

## FINANCE MIX AND RETURN ON ASSETS

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### ABSTRACT

Financing is assumed to be one of the most fundamental areas in a firm. Capital structure is of great importance because it creates an organized and flexible way of raising capital. This study investigates the influence of capital structure on Return on Asset of quoted firms in Nigeria. The study used secondary data from 2012-2016 collected from the annual reports and accounts of 15 quoted agricultural and agro-allied companies published by the Nigeria stock exchange. It has been established that there is a significant relationship between capital structure and profitability of listed firms in Nigeria before the adoption of IFRS. It is not well known based on recent research that there is a relationship between capital structure and profitability after the adoption of IFRS. Therefore, this study seeks to investigate whether there the relationship still subsists after the adoption of IFRS in Nigeria. The Regression analysis and descriptive statistics was adopted to study the relationship between capital structure proxied by Debt ratio (DR), Debt to Equity ratio (DER), Asset tangible (TANG) and Age of firm (AGE) with profitability proxied by (ROA). The findings of the study show that the debt ratio has a negative insignificant relationship with the profitability of the firm while the Debt to Equity ratio has a positive insignificant relationship with the profitability of the firm. Based on the findings of the study, the following recommendations were made; Managers should let their capital structure be as a result of the business needs however, they should not load the business with too much debt than it has the room for as this can lead to financial challenges like bankruptcy. Firms are encouraged to employ the use of inexpensive source of finance sources instead of expensive fixed interest - bearing debt.

**Keywords:** *Capital structure, Debt ratio, Debt to equity ratio, Return on assets.*

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## INTRODUCTION

Financing is assumed to be one of the most fundamental areas in a firm. It is therefore expected that a finance manager concerns himself with ascertaining the optimal capital structure for the firm. Capital structure refers to the synthesis of debt and equity or blend of debt and equity which a firm uses to finance its operations and for growth. The availability of capital in the operations of an organization is essential as it is a determining factor in whether the firm can continue in the future as understood from the principle of going-concern. Unavailability of capital will cause the firm to go into liquidation. Presumably, the main objective of businesses other than non-profit organizations is to make and maximize profit. The profitability of a firm is a major factor to consider when investors take investment decisions. Therefore, profitability is one of the main methods of assessing financial performance. The financial performance of a firm provides necessary information to shareholders and stakeholders on the continuity of the firm, the firm's liquidity position and the firm's solvency. The decision of the method of finance employed by the firm could negatively and positively affect the firm's financial performance. The process of selecting the method of financing firm is a very vital decision that financial managers have to make and take into consideration the interest rate on bank loans, the level of competition in the stock market and the fluctuations in the price of stock.

There is shortage of the literature on studies that examines the relationship between capital structures and profitability in Nigeria after the adoption of IFRS now that listed firms in Nigeria has mandatorily adopted the use of IFRS since 2012. However, it has been established that there is a significant relationship between capital structure and profitability of listed firms in Nigeria before the adoption of IFRS. It is not well known based on recent research that there is a relationship between Capital structure and profitability after the adoption of IFRS. This study seeks to investigate whether there the relationship still subsists after the adoption of IFRS in Nigeria. This study offered to fill this gap in the literature. In this study, debt to equity ratio and debt ratio are used as proxies for capital structure, while ROA is used as proxy for financial performance. This study is therefore aimed at examining the effect of capital structure (synthesis of debt and equity) on financial performance of firms in Nigeria

## **OBJECTIVES OF THE STUDY**

The main focus of this research is to study is to examine the impact of capital structure on financial performance. The specific objectives are as follows:

1. To determine the relationship between debt ratio and financial performance
2. To ascertain to what extent debt to equity ratio affects financial performance

## **RESEARCH QUESTIONS**

These research questions are designed to help achieve the goals and objectives of the study. They are as follows:

1. Is there a relationship between debt ratio and financial performance?
2. To what extent does debt to equity ratio affect financial performance?

## **Research hypotheses**

### **Hypothesis 1**

**H<sub>0</sub>:** There is no relationship between debt ratio and financial performance

**H<sub>1</sub>:** There is a relationship between debt ratio and financial performance

### **hypothesis 2**

**H<sub>0</sub>:** There is no relationship between debt to equity ratio and financial performance

**H<sub>1</sub>:** There is a relationship between debt to equity ratio and financial performance

## **LITERATURE REVIEW**

### **Conceptual Framework**

Conceptual framework could be described the system of norms, principles, expectations, and beliefs that sustain and update your research. It is used to create theoretical differences and organize ideas. The major aim of this research topic is carry out an analysis of the relationship between capital structure and firms' financial performance. According to Miles and Huberman (1994), conceptual framework can be defined as one explains, either graphically or in narrative form, the salient factors,

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concepts, or variables and the presumed relationships among them. A conceptual framework is an analytical tool with several differences and contexts. It is used to make ideal and notional distinctions and organize ideas. Strong conceptual frameworks capture something real and do this in a way that is easy to commit to memory and apply. This research topic seeks to describe in this chapter the background understanding of capital structure, various theories of capital structure and definition of capital structure and its composition.

### **Capital Structure**

A firm's performance as considered factually could be affected by so many factors and capital investment decisions as well as capital structure is considered to be a main contributor. Capital structure is referred to as the combination of the debt and equity used to finance the overall operations of the firm. A firm's financial structure is therefore the structure of its liabilities and owner's equity. Capital structure of a firm refers to the combination of various securities issued by the firm to finance its operations. Capital structure has been discovered to be one of the most important aspects of capital investment decisions since the financial performance in the long run or short run depends on the determinations. As a general rule, there should be a proper mix of debt and equity capital in financing the firm's assets. A firm funds its operations with capital raised from various sources. A mix of these sources is what is referred to as capital structure. The capital structure of a firm consists of several sources which include different proposition of debt instruments, preferred and common stock which are presented in the equity and liability side of the statement of financial position.

### **Debt and Financial Performance**

Debt financing can be described as money borrowed to run your business that has a fixed rate of interest and a predetermined maturity date. The principal is expected to be paid fully at the maturity date. Debt financing is usually divided into two categories based on the time frame; Long term debt financing and small term debt financing. Long term debt financing is usually for capital intensive projects and it is owed for a period that exceeds a year from the date on the balance sheet. Long term debt financing includes instruments such as bank loan, debenture, mortgage bonds, or other obligations not due for one year. Short term debt financing also known as operating loan consists of current liabilities

incurred for the day to day operations of the firm and is due within a year. Short term debt financing includes instruments such as trade credit, account payables, etc. So, it is safe to assume that debt financing is a mix of long term and short-term debt financing.

Debt financing arises when an organization raises funds for working capital or for embarking on capital projects by issuing bonds, bills or notes to individuals and/or institutional investors. In return for loaning the money, the individuals or institutions now turn out to be creditors and obtain a promise the principal and interest on the debt will be paid back. It involves borrowing a fixed sum from a lender, which is then repaid with interest. It means borrowing money and not relinquishing ownership. Debt financing frequently accompanies stringent conditions or agreements notwithstanding paying interest and important at indicated dates. Inability to meet the obligation prerequisites will bring about extreme results. Many sorts of independent ventures advantage from debt financing, especially, those in customary divisions like retail, neighborliness and assembling. To meet all requirements for advances and secured credit extensions, organizations need to demonstrate some working history and productivity. Before you look for debt financing, you need justifiable reason motivation to trust that you'll have enough income later on to pay off the debt. Lenders typically require surety or a personal guarantee, a business plan, good credit records, copies of your tax returns, annual financial reports, and an application.

### **Equity and Financial Performance**

Equity financing could be viewed as a method of financing where a company issues out for sale, a certain percentage of its stock to an investor in exchange for capital for financing projects and for funding operational activities. It involves the investors purchasing a portion of the company's ownership with the aim of getting profit in return in form of dividends. Distinct from debt financing, equity financing does not require annual interest payment. It also doesn't require any form of collateral. The Brundtland Commission's definition of sustainable development is grounded on intergenerational equity: 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (1990, p. 87). Equity can as well be applied in communities, societies, states and nations, and across generations.

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A major disadvantage of equity financing is that the investors become part owners of the company. Since shareholders have a say in decision making in the organization, equity finance investors also have a say in decision making. Equity financing is best for innovation startups and high-risk technology or any other business industry that does not have a steady cash flow.

### **Profitability of Firms**

The concept profitability can be defined as the capability of an investment to yield a return from its use. It is the ability for the firm to make more than the initial investment. As owners invest their funds in the firm with an expectation of at least a reasonable return, if not high returns, is considered for a strong business environment and gives the firm an edge with its competitors. It can be remarked that profitability is helpful in providing a useful basis for measuring business and overall efficiency. Thus, profitability is the ability of an organization to earn profit; It is a composite concept relating the efficiency of an organization to earn profit. The impact of profitability on leverage has been studied by many scholars and it is negatively related to leverage. Many studies (Titman & Wessels 1988; Rajan & Zingals, 1995) find that profitability is adversely related to debt level. Whereas some researchers claim a positive relationship exists between profitability and leverage. Leverage positively correlated with profitability. Profitability is a variable fixating on the two theories of Static Trade-off Theory and Pecking Order Theory on the capital structure. The tradeoff theory says that organizations look for debt levels that adjust the duty focal points of extra debt against the expenses of conceivable money related pain. The tradeoff theory predicts direct obtaining by assessment paying firms. The pecking order theory is saying that the firm will borrow, as opposed to issuing equity, when inner income is not adequate to store capital expenditures. Subsequently the measure of debt will reflect the company's total requirement for external fund (Myers, 2001). Founded on the pecking order theory, a negative relationship exists between profitability and debt financing. Profitable companies generate enough cash which in turn can be used as a source of internal financing. Shayam-Sunder and Myers (1999) claim that the relationship between profitability and leverage can be supported by the pecking order theory. On the other hand, tradeoff theory predicts a positive relationship between profitability and leverage.

### **Asset Tangibility and Financial Performance**

Assets tangibility can be seen ratio of tangible assets also referred to as fixed or non-current assets to total assets of the firm. As assets play an important role in the financial performance, profitability tends to be as a result of presence of tangible assets. The presence of effective tangible asset leads to the availability of good collateral for loan acquisition which boosts the capital structure of the business organization. The capital structure of a business organization is a combination of debt and equity of the firm. The financing instruments of that firm meaning that the firm is able to possess more loan for financing projects or investment that can lead to good returns or profit in a long run.

### **Determinants of Capital Structure**

There are diverse factors that can negatively or positively influence firm's capital structure. These factors that affect the capital structure can be grouped in two parts as external and internal factors. The external factors rising from firm's external environment and essentially are out of the control of the firm's managers such as country's economic, institutional factors. Rajan and Zingales (1995) discover that institutional factors including tax code, bankruptcy law, and development of capital market can affect firm capital structures. Holstrom and Tirole (1997) claim that small and medium scale enterprises have tougher constrain than bigger firms for external financing, and so, macroeconomic and institutional factors have greater effect on their leverage.

Deming and Maksimovic (1996) examined the relationship between domestic capital market development and firm leverage and discovered significant negative relationship between domestic market development and leverage. Schmukler and Vesperoni (2006) studied relation between country's financial liberalizations and leverage. They find that financial liberalization does not change leverage ratio, but it changes debt structure and increases portion of short term debt. Deesomsak et al, (2004) examined determinants of capital structure in Asian pacific countries and discover that firm's environment can affect the capital structure. They show that 1997 Asian economic crisis significantly affected the firm's capital structure. Voulgaris et al, (2004) examined the determinants of capital structure of companies in Greece and discovered that stringent monetary and fiscal regulation have more impact on small and medium

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scale enterprises than large firms. Internal factors are those that the firm's managers have control over, may be not total or complete control such as firm's characteristics. This study focuses on the important factor of capital structure in both developed and developing countries including asset structure, profitability, growth opportunity, liquidity and business risk.

## **THEORETICAL FRAMEWORK**

### **Traditional Theory**

The net operating approach and the net income approach is an agreement of the traditional view. It is concerned with the increased value of the firm or cost of capital being reduced by the cautious mix of debt and equity capital. As we have known earlier that capital structure is a combination of debt and equity, the traditional theory is of the opinion that debt financing is less expensive than equity acquisition and advises that it's better for a firm to borrow than for it to consist of several owners. The theory assumes that if the cost of debt stays the same and it reaches a substantial level then there would be an increase and therefore the weighted cost of capital will fall without delay an external source of finance is brought forth and the appointment of increase in the level of gearing and also the market value of the firm and the market value per share will be increased where the weighted cost of capital is the lowest point. The traditional theory speculates that there is an optimal capital structure which increases the firm's value and decreases the cost of capital.

### **Modigliani-Miller Theory (M&M)**

The Modigliani-Miller theorem (of Franco Modigliani, Merton Miller) forms the foundation for contemporary thinking on capital structure. M&M's capital structure irrelevance theory was published in 1958 states that under specific situations of no bankruptcy cost, no taxes, an efficient market, and in irregular information, the worth of firm is not relevant how the firm is financed. It is of little concern if the firm's capital is raised by issuing stock or selling debt. It is of no importance what the firm's dividend policy is. The theorem forms the foundation for contemporary thinking on capital structure, though it is generally viewed as a solely theoretical result since it neglects many essential factors in the capital structure decision. The theorem states that, in a perfect market, how a firm is funded is unrelated to its value. It is of the opinion that the ways



which a firm is financed has no impact with the profitability of the firm's value saying that the firms' profitability is due to the inflows and the worth of the assets invested in by the firm. M&M implies that unless the assumptions of no taxes, VAT with corporate taxes, firms should be financed with all debts as it will lead to tax reduction since the tax will be deducted from the debt interest. This result offers the grounds with which to study real world reasons why capital structure is important, that is, the capital structure employed can affect the company's value. The Modigliani and Millers based on what they called homemade leverage, implied that investors do not need the company to acquire a loan on their behalf rather the individual investors acquire it themselves, claiming that investors receive nothing from corporate leverage that the individual cannot get on its own especially on the assumption that individuals and companies have the same interest rate on borrowings.

### **Trade off Theory**

The tradeoff theory is an addition to the M&M theory considering the additional risk that debt acquisition carries. The trade-off theory of capital structure refers to the notion that a company chooses how much debt finance and how much equity finance to be employed by matching the costs and benefits. The tradeoff theory says that there's a maximum level of debt where an additional increase is equal to the extra cost of the financial suffering. The standard version of the hypothesis can be traced back to Kraus and Litzenberger who considered equilibrium between the dead-weight costs of bankruptcy and the tax saving benefits of debt. The calculation of the extra cost of the financial suffering is the hardest job such that one can determine the optimal debt level. Therefore, the theory argues that firms should find out the optimum level of the debt and equity financing. The obvious candidate is bankruptcy. Kraus and Litzenberger (1973) offer a standard statement of the theory that optimal leverage mirrors a tradeoff between the tax benefits of debt and the deadweight costs of bankruptcy.

An essential objective of the theory is to elucidate the fact that firms usually are funded partly with debt and partly with equity. It states that there is a gain to financing with debt, that is tax benefits and there is a cost of financing with debt which include the costs of financial distress including bankruptcy costs of debt and non-bankruptcy costs (e.g. staff resigning, suppliers demanding payment terms that will place the firm at a disadvantage, bondholder/stockholder internal strife, etc.). The benefit of

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further rises in debt drops as debt rises, while the cost rises, so that a firm that is enhancing its total value will place emphasis on this trade-off when selecting how much debt and equity to use for financing.

### **Static Trade off Theory**

The theory states that every business organization has an optimum debt to equity ratio that maximizes its value. In a static trade-off framework, the business organization is seen as setting a goal debt to value ratio and steadily working towards it (Myers, 1984). De Angelo and Masulis (1980), the tradeoff theorist, postulate that a firm sets a target debt level and then moves towards it. The theory is opinion that a firm selects the amount of debt finance and the amount of equity finance to use by striking a balance between the costs and benefits. The static tradeoff theory of capital structure says that a firm should choose their mix of debt and equity financing aiming to bring balance to the cost and benefits of the debt acquisition.

### **Dynamic Trade off Theory**

What drives a firm's capital structure decisions is one of the most controversial issues in corporate finance. Although several explanations have been proposed for a firm's capital structure choice, such as those based on the trade-off between the tax benefits of debt and the expected costs of bankruptcy (Kraus & Litzenger 1973); Stiglitz (1972) took the extreme move of assuming away uncertainty. The first dynamic models to contemplate the tax savings set against bankruptcy cost trade-off are Kane, Marcus, and MacDonald (1984) and Brennan and Schwartz (1984). Their model took into consideration: bankruptcy costs, uncertainty and taxes but no transaction cost. The businesses sustain high debt level and exploit tax savings as there is no transaction cost.

Miller (1977), adverse selection costs (Myers & Majluf 1984), and market timing (Baker and Wurgler 2002), the empirical evidence on the relevance of each explanation is still largely debatable. In response to this debate, particularly that on the relevance of the static trade-off theory (Myers 1993); Andrade and Kaplan (1998); Graham (2000), academics have turned to dynamic versions of the trade-off theory. Fischer, Heinkel, and Zechner (1989), for instance, show that in the presence of recapitalization costs, a firm's debt ratio can vary over time because any

leverage ratios within a set of boundaries are optimal. Therefore, according to their argument, firms with similar characteristics can have different leverage ratios at any point in time. However, to the extent that these firms have similar recapitalization criteria, it is also possible that their capital structures display similar inter temporal behavior. Consequently, the dynamic trade-off theory which was proposed by Fischer et al. (1989) suggests that firms take recapitalization actions only when the benefits from recapitalization outweigh the costs.

### **Agency Theory**

The dominant idea behind the Principal-Agent model is that the Principal is too pre-occupied to carry out a given task and so hires the Agent but being too pre-occupied also means that the Principal cannot effectively monitor the Agent. There are numerous of ways that the Principal may then try to encourage the Agent: this note examines incentive contracts (similar to profit sharing or sharecropping). Taken literally and alone, the basic Principal-Agent model may seem too abstract to be beneficial. But we start with this theory because it is an important building block for many deliberations throughout the course relating to not only managing the incentives of individuals but also managing the incentives of organizational units (such as teams, departments or divisions) and of firms themselves (such as suppliers, partners).

This theory is concerned with the relationship between shareholders and agents usually the company's managers. In this theory, shareholders are the actual owners of the company and the job of the agent is limited to making sure that the shareholders' value is fully maximized. Jensen and Meckling (1976) proposed the concept of agency costs. An agency relationship exists between the shareholders and creditors of the firms that have substantial amounts of debt. The conflict now arises because the interests of the shareholders differ from that of the managers as the shareholders make sure that excess cash flow comes back to them in form of dividend while the agent is aimed at using the free cash flow to fulfill the need for self-aggrandizement and prestige and invest in unprofitable projects. And if the shareholders want this to actually happen, they have to undertake a cost called agency cost.

### **Pecking Order Theory**

Effective and operative financial management and what characters affect their capital structure is significant for an organization to obtain improve

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the company's operational performance. A false decision about the capital structure may result in financial distress and even to bankruptcy. There are several theories developed to investigate alternative capital structures. Among all these theories include the static trade off theory which derived by Modigliani and Miller (1963) was the initial and most recognized which describes the formulation of capital structure. Their trade off theory is of the opinion that there are optimal capital structures by trading off the advantages and disadvantages of debt and equity. The main benefit of debt is tax deductibility of interest and the costs are bankruptcy cost (Kim, 1978) and agency cost (Jesen and Meckling, 1976); (Myers, 1977). However, recent studies have shown a concentrated departure from the tradeoff theory to pecking order theory.

The theory is of the assumption that there are three sources of financing which is: internally generated, debt issue and equity issue. The theory is on a basis that company should finance themselves first on their internally generated cash, then on debt issue, and lastly on the equity issue. The theory makes this lead on this fact of asymmetric information meaning that an investor cannot have the same information with the managers because the managers work in the company and is able to have information pertaining to all the investment and project showing the true values of the firm. The theory also said that there is a signaling affect that because of the information the managers have, he can undervalue the stock so it is always preferable to issue debt than equity. In contrast to the tradeoff theory, the pecking order theory insists that there is no optimal amount of debt and its always preferable that the companies should finance themselves from retained earnings. Moreover, it argues that the D/E ratio shows the internal financing capability as well as new investment opportunities will have low D/E ratio, while firms with more investment opportunities but restricted internal funding will have high D/E ratio.

### **Empirical Evidence**

This research will not complete and insufficient if previous empirical studies on the subject are not consulted. Empirical studies of previous study show the terms, objectives and results conclusions in relation with the current study. It is considered necessary to enable the researcher see some gaps that might have been accounted for in these previous studies. Mwangi and Birundu, 2015 using a five-year operation on 40 SMEs with multiple regression resulted on the findings that there is no significant effect of debt ratio, asset turnover and asset tangibility on the financial

performance. Salawu, 2009 concluded using 50 companies of listed companies of listed firms in Nigeria, a secondary data analysis was carried out which resulted that there is an insignificant relationship between capital structure and profitability measured as earnings after tax and interest divided by net assets. Khidmat and Rehman, 2014 concluded on a 9-year period financial statement analysis of ten listed companies in the chemical sector of Pakistan that capital structure has a negative and significant relationship on profitability measured by return on asset (ROA) and return on equity (ROE) measuring capital structure on the basis of debt ratio. Anafo, Amponteng and Yin, 2015 carried out their studies on 17 listed banks of the Ghana stock exchange during the period from 2007 to 2013 concluding that both long term and short-term debt to total asset have a positive and significant relationship to return on assets (ROA) and return on equity (ROE). Badar and Saeed, 2013 after carrying out a 5-year period analysis on 10 firms from the sugar sector of Pakistan found out that short term debt ratio and asset turnover has a positive significant relationship on profitability.

## **METHODOLOGY**

This chapter searches out best research methodology necessary for the collection, presentation and analysis of data for the study with the aim of getting objective results. The methodology of this study includes research design, population of study, sample size and sampling procedure, method and sources of data collection and method of data analysis. This chapter attempts to carry out the effect of capital structure on firm's performance using model specification with some specific variables.

### **Research Design**

In determining the relationship between capital structure and financial performance of selected firms listed on Nigerian Stock Exchange, descriptive research design was adopted in this study. In line with Salawu (2009) as well as Khidmat and Rehman (2014), secondary data was used. The secondary data of the sampled firms were obtained from the annual reports of the carefully chosen Agriculture and Agro-allied companies, between 2012 and 2016. This study was essentially a quantitative research and therefore requires computation of information arithmetically to get the outcome. The required data could only obtainable from the selected companies' annual reports.

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### **Population of Study**

The population of this study constitutes of 15 selected Agricultural and Agro-allied listed firms on the Nigerian Stock Exchange (NSE). These companies were carefully chosen because they represent 68% of the population on the NSE in which the minimum percentage of population needed to conduct a research is 5%. These companies were selected because of the Nigerian government's drive for economic diversification from the Oil sector to the Agricultural sector. Firms in the financial sector were left out because they are guided by special regulations. Listed firms are used for this study because they usually file their annual reports with the Nigerian Stock Exchange (NSE). The population of this study is streamlined to 2012-2016. It is limited to this period because it is the period subsequent to the adoption of the International Financial Reporting Standards (IFRS) in Nigeria. The adoption of IFRS aided the progress of this reasearch work due to ease in comprability of financial statements between the selected firms.

### **Sample Size and Sampling Procedure**

Sample Random Sampling method was used to select the 15listed agricultural and agro-allied firms on the Nigerian Stock Exchange (NSE). Due to inaccessibility of resources, the annual reports since inception of the selected company could not be examined. Therefore, the study is limited to some of the population. This study intends on using 5 years (2012-2016).

### **Sources and Method of Data Collection**

This research limited its analysis to the use of data taken from the selected firms' annual reports. This is in line with previous studies on the relationship between capital structure and financial performance Salawu (2009) as well as Khidmat and Rehman (2014). To begin with, the selected firms' annual report is the main method of communication between ompanies and stakeholders (employees, general public, etc). Secondly, it gives room for comparability of this study with most other preceding studies that used annual reports of firms. Finally, the main officially authorized and official information sources for firms are considered to be the firms' annual reports.

### **Method of Data Presentation and Analysis**

In line with the previous literature, data analysis and measurement methods used include Regression analysis (Salawu, 2009; Khidmat & Rehman, 2014). In this study time period used is from 2012 till 2016. The selected time interval enables us to examine if there is a noteworthy relationship between Capital structure and profitability of the selected agro-allied firms on Nigerian Stock Exchange (Salawu, 2009; Khidmat & Rehman, 2014). During this period of time, all listed companies in Nigerian Stock Exchange have been compelled by the Nigerian government to adopt International Financial Reporting Standards.

### **Operationalization of Variables**

Operationalization exactly defines each variable, therefore increasing the quality of the results and improving the strength of the design. I compared a measure of profitability (dependent variable) and its effect on capital structure (independent variable).

### **Independent Variables**

Two independent variables which served as proxy for capital structure would be used to measure capital structure in the research were identified as debt ratio and debt equity ratio.

### **Dependent Variable**

One dependent variable which is profitability will be used and measured by using return on assets (ROA).

### **Control Variables**

Control variables considered to be related to Capital structure are used in this study. These include Asset tangibility and Age of the firm.

### **MODEL SPECIFICATION**

The independent variable here is capital structure while the dependent variable is profitability. Profitability of the firm is dependent lying on the capital structure. I intend on using the regression formula for the study to show the relationship between variables i.e. the dependent and independent variables. This is expressed as thus:

$$ROA = \beta_0 + \beta_1 DR + \beta_2 DER + \beta_3 AGE + \beta_4 TANG + e_{it} \quad (1)$$

Where:

ROA = Return on Assets

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DR = Debt ratio (ratio of total debt to total assets)

DER = Debt to equity (ratio of debt to equity)

AGE = Age of the firm (control variable)

TANG = Asset Tangibility (control variable)

$\beta_0$  = Constant

$\beta_1, \beta_2, \beta_3, \beta_4$  = Coefficient of slope parameters

e = Error term

### **Apriori Expectation**

Hypothetically, the researcher is expectant of a significant positive relationship between the capital structure and return on assets (ROA).

Whereby we have:

$\beta_1 > 0$ : There is a significant positive relationship between DR and ROA

$\beta_2 > 0$ : There is a significant positive relationship between DER and ROA

$\beta_3 > 0$ : There is a significant positive relationship between AGE and ROA

$\beta_4 > 0$ : There is a significant positive relationship between TANG and ROA

### **Data Presentation and Analysis**

#### **Descriptive Statistics**

The Descriptive technique shows the summary of the data for a number of variables in a single table and calculates the systemized values. Variables can be well organized by the size of their means, or the way the variable is being selected. The table below shows the descriptive statistics. The Descriptive results disclose representation of data exists between dependent variable and each of the independent variables.



**Model: Capital Structure and Return on Assets**

**Table 4.2.1 Descriptive Statistics of Variables (2012-2016)**

	ROA	DR	DER	TANG	AGE
Mean	0.079302	0.511484	1.311685	0.752027	33.20000
Median	0.091486	0.516398	1.067814	0.862223	33.00000
Maximum	0.375490	0.776684	3.477965	1.158414	53.00000
Minimum	-0.100643	0.177877	0.199380	0.135945	21.00000
Std. Dev.	0.112297	0.160909	0.911520	0.299847	10.59481
Skewness	0.617550	-0.184923	1.123682	-1.226078	0.629999
Kurtosis	3.341830	2.583625	3.337604	3.049148	2.211924
Jarque-Bera	1.710750	0.323078	5.379816	6.266125	2.300687
Probability	0.425124	0.850833	0.067887	0.043584	0.316528
Sum	1.982550	12.78710	32.79212	18.80068	830.0000
Sum Sq. Dev.	0.302653	0.621400	19.94084	2.157803	2694.000
Observations	25	25	25	25	25

*Source: Author's computation using E-VIEWS*

Comment: ROA signifies return on assets, DR signifies short debt ratio, DER signifies debt to equity ratio, TANG signifies Asset tangibility and AGE signifies age of the firm.

**Interpretation**

Table 4.2.1 gives details for summary statistics for the ROA, DR, DER, TANG and AGE variables used in the research. Analytical examination of the variables disclosed issues. The results above show that the coefficient of Skewness for ROA, DR, DER, TANG and AGE were 3.3, 2.6, 3.3, 3.04 and 2.2 respectively thus indicating that the positive kurtosis for ROA, DR, DER, TANG and AGE are skewed to the right positively. The regression data quality is good and this is because of the relatively small values of standard deviations.

**Regression Analysis**

In this section regression analysis was used to examine the impact of capital structure on profitability of firms (ROA) from 2012 to 2016.

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### Model 1: Capital Structure and Return on Assets (ROA)

Table 4.3.1 Regression Results of the Variables (2012-2016)

MODEL	Coefficient	Std. Error	t-statistics	Prob.
CONSTANT	0.110809	0.029170	3.798788	0.0003
DR	0.001037	0.002076	0.499240	0.6192
DER	2.65E-05	9.87E-06	2.690634	0.0089
TANG	0.000452	0.000876	0.515849	0.6076
AGE	-2.57E-05	0.000746	-0.034509	0.9726

**R-squared** = 0.113146 *Source: Author's computation using E-VIEWS.*

*Predictors: CONSTANT, DR, DER, TANG, AGE.*

*Dependent Variable: ROA*

### Interpretation

The regression analysis results as displayed in table 4.3.1 indicates that there's an insignificant relationship between Debt Ratio(DR) and the financial performance of firms in Nigeria proxied by ROA, where the coefficient is 0.001037 which makes the coefficient value non-significant to ROA and a t-statistics value of 0.5. This indicates that the higher the level of DR in the firm's capital structure then the higher the return on Assets of firms, in other words, it means DR locus of firms is related with an increase in the return on Assets of such firms. Also, the results of Asset tangibility (TANG) shows that it is positively insignificant to Return on Assets (ROA) as shown by its t-statistics value of 0.5. There is therefore no relationship between TANG and ROA of firms in Nigeria. It was also shown that Age of firm (AGE) is negatively insignificant to ROA as shown by its t-statistics value of -0.035. Hence, there is no relationship between AGE and financial performance of Nigerian firms. But as regards to Debt to Equity Ratio (DER), results show that DER is a positively significant to between return on assets (ROA) with a t-statistics value of 2.7. Hence, there is a positive significant relationship between DER and financial performance of firms in Nigeria in line with the apriori expectation at 1% level of significance.

### Testing of Hypotheses

Hypothesis testing is used to examine the relationship that happens between capital structure and profitability of firms. Two key testable hypotheses were formulated in Chapter one of this study. We subject these propositions to empirical testing drawing from the results of our descriptive and regression analysis. Using the regression analysis by

observing the values of the coefficient and t-statistics value is used to check the hypothesis.

### **Hypothesis One**

As shown in table 4.3.1 where the coefficient value is 0.001037 and probability value is 0.6192 with a t-statistics value of 0.499240, this shows a positive insignificant relationship between Debt ratio and profitability of Nigeria firms proxied by ROA. Therefore, we accept the null hypothesis. This is in line with Mwangi and Birundu, (2015), using a five-year operation on 40 SMEs with multiple regression resulted on the findings that there is no significant effect of debt ratio on financial performance.

### **Hypothesis Two**

As shown in table 4.3.1 where the coefficient value is 2.65E-05, with a probability value 0.0089 of and t-statistics value is 2.690634, this shows a positive significant relationship between Debt to Equity ratio and profitability of Nigeria firm's proxy by ROA with 1% level of significance and 99% confidence level. Therefore, it leads to rejecting the null hypothesis and we accept the alternative hypothesis.

## **CONCLUSION**

This study examined the relationship between capital structure and financial performance of firms on the Nigerian Stock Exchange. Fifteen companies were used and the study employed descriptive statistics and regression technique using E-VIEWS 9 software package in analyzing the data collected for a period of five years 2012-2016. The result of this study is in line Vatavu, (2015) that shows a positive relationship between capital structure and firm's profitability. Specifically we found that debt ratio has an insignificant relationship with financial performance of firms in Nigeria. Also debt to equity ratio has a significant relationship with financial performance of firms in Nigeria. This result backs up the pecking order theory that insists that there is no optimal amount of debt and its always preferable that the companies should finance themselves from retained earnings. Therefore, debt financing leads to less cash flow which enables managers to allocate firm's resources optimally.

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**Reference** to this paper should be made as follows: Adebola Olubukola Otekunrin et al., (2019), Finance Mix and Return on Assets. *J. of Sciences and Multidisciplinary Research*, Vol. 11, No. 1, Pp. 28-50

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