

# Capital Structure And Market Valuation Of Quoted Agricultural Firms In Nigeria

Engr. YABRIFA, FELIX DISEYE<sup>1</sup> and Dr. AMANAWA, DAVID EBIEGBERI<sup>2</sup>

<sup>1</sup> Doctoral Candidate, Department of Economics (Ph.D in Petroleum and Energy Economics)  
Rivers State University, Poert-Harcourt, Rivers State, Nigeria.

[Felix2yab@yahoo.co.uk](mailto:Felix2yab@yahoo.co.uk)

<sup>2</sup> Faculty Member/Researcher at the Centre for Continuing Education,  
Ignatius Ajuru University of Education, Rivers State, Nigeria.

[david.amanawa@iaue.edu.ng](mailto:david.amanawa@iaue.edu.ng)

**Abstract:** *This study examined how capital structure affects the market valuation of publicly traded agricultural enterprises in Nigeria. The study was led by four distinct aims, research questions, and hypotheses. The study proxied capital structure (independent variable) by debt-to-assets ratio, debt-to-equity ratio, long-term debt ratio, and short-term debt ratio. In contrast, market valuation (dependent variable) was measured by market capitalization. The study was anchored on the Trade-off theory, Agency Cost theory, Pecking Order theory, and Miller and Modigliani (M-M) Theory. An ex post facto research design was used in the investigation. The study used panel data collected from the Nigerian Exchange Group (NGX) Fact Book. The data analysis technique adopted was the Panel Least Square (PLS) regression technique. The hypotheses formulated were tested at a 5% significance level using p-values obtained from the regression analysis. The findings of the study showed that there is a positive and significant relationship between debt-to-assets ratio and market capitalization, there is a positive and significant relationship between debt-to-equity ratio and market capitalization, there is a positive and significant relationship between long-term debt ratio and market capitalization, and lastly, there is a positive and significant relationship between short-term debt ratio and market capitalization of quoted agricultural firms in Nigeria. The study concluded that capital structure positively and significantly affects the market valuation of quoted agricultural firms in Nigeria. Among others, It was recommended that agricultural firms use more of a long-term debt ratio as it increases their market valuation. Also, agricultural firms in Nigeria should continue to strategically plan and manage their debt structure to improve their profitability and market valuation.*

**Keywords:** Capital Structure, Market Valuation, Agriculture, Nigeria

## BACKGROUND TO THE STUDY

Every firm needs money to run its operations because, without it, success is unachievable. The money required might be for expanding the firm or for day-to-day operations. This demonstrates the significance of money in the operations of any firm. We call this money "capital." Thus, capital describes the resources used to finance a firm. Companies prepared to raise money for their endeavors often obtain funding from two main sources. Internal and external sources are the two categories of sources. The term "internal source" describes the money from within a business, primarily from retained revenues produced or gained from their own operations.

Similarly, a company can search elsewhere for funding to expand its operations. External finance refers to any funding that is not obtained from the profits generated by their operations. Obtaining external capital might involve expanding a company's co-ownership or taking out a loan outright, which can raise the enterprise's market value (Sebastian & Onuegbu, 2018).

Hence, one of the vital ways to increase the market valuation of firms is the capital market. As a result, the form and degree of the link between capital structure and the market value of businesses have garnered interest in the finance literature. The choice of combining the several funding sources a company employs to support its operations and capital projects is known as its capital structure. These sources include the use of common and preferred shares, known as equity financing, and long-term debt financing. One of the primary objectives of financial managers is to optimize shareholder wealth by identifying the optimal allocation of a company's financial resources and maximizing the company's value through resource allocation decisions. The capital structure of a company and its capacity to satisfy the needs of various stakeholders (Onoalapo & Kajola, 2010). Any business organization must make a basic choice about its capital structure to optimize return to all stakeholders because it greatly affects the firm's capacity to compete in the market (Awunyo & Badu, 2012).

Uche (2012) noted that the primary aim of capital structure is to maximize shareholder wealth or increase the firm's market value. Jerry and Gordon (2015) also discovered that proxies for capital structure, such as debt-to-assets, debt-to-equity, long-term debt, and short-term debt, increase firm market value volatility. They believe there is still much debate regarding whether or not flaws like

agency costs, bankruptcy, and other issues determine the best capital structure for a company to maximize shareholder wealth. According to Pandy (2015), when the economy is doing well, a company's main goal when employing financial leverage is to increase shareholder wealth. This assumption is predicated on the possibility of obtaining fixed-priced funds, such as bank and financial institution loans, for less money than the company's net asset return rate. Therefore, the profits per share (EPS) rises, and the firm's market value grows when the difference between the earnings created by assets funded by borrowed funds and the cost of these funds is transferred to the shareholders. In addition, Chandrasekharan (2012) noted that optimal capital structure is generally believed to help firms maximize profit. This is because capital structure represents a means for the decision-making of many firms, facilitates the maximization of return on investment, and boosts the efficiency of financing and dividend decisions (Chandrasekharan, 2012). As a result, financing decisions generally facilitate the survival and growth of firms, which calls for the need to channel efforts of business towards realizing efficient decisions that will protect the shareholder's interest and improve the financial performance of firms.

Furthermore, the capital structure of a firm is an important tool in the survival of the bank because it goes a long way in determining its growth, development, and sustainability over time. This is because it remains the overall source of finance an organization uses in financing its operations, ranging from retained earnings to equity and debt finance, leading to increased financial performance (Gambo, Ahmad & Musa, 2016). Supporting this, Dada and Ghazali (2016) stated that capital structure decisions are important for any business establishment because they are needed to maximize the wealth of business stakeholders. Such decisions significantly impact a firm's ability to compete in a competitive atmosphere.

Ohaka, Edori, and Ekweozor (2020) conducted an empirical study that demonstrated the positive and significant impact of firm size, short- and long-term debt, and both on the financial performance of publicly traded companies in the Nigerian capital market. Based on these data, the authors concluded that debt financing is essential to a company's overall financial performance. Furthermore, Ahmadu, Malami, Musa, and Haruna (2018) ascertained that short-term debt ratio, long-term debt ratio, and total-debt equity ratio are important capital structure variables that positively affect the financial performance measured by return on asset. However, capital structure is not a significant factor in determining a firm's performance; the results of Sebastian and Onuegbu (2018) also showed that long-term debt negatively and negligibly impacted returns on assets to total asset ratio and the total debt to equity ratio. In addition to this, the results of Nwude et al. (2016)'s empirical study also demonstrated that capital structure has a negative and significant impact on the performance of Nigerian quoted firms; as a result, capital structure negatively affects Nigerian quoted firms' performance, which is consistent with the pecking order theory.

Furthermore, Ofulue, Ezeagba, Amahalu, and Obi (2021) found that debt-to-equity ratio and long-term debt ratio as the proxies of financial leverage have a significant negative relationship with cash value added while short-term debt ratio significantly and positively relates to cash value added of quoted industrial goods firms in Nigeria. Moreover, Edore and Ujuju (2020) established that long-term debt has a significant and positive effect on the value of sampled companies' performance, while medium-term debt and short-term debts also significantly and positively influence sampled quoted companies' value. In addition, Segun and Vincent (2022) found that debt level significantly affects the financial performance of listed agricultural firms in Nigeria, while long-term debt and debt to equity level do not affect their financial performance. Against the backdrop of the importance of capital structure, this study is set to examine the effects of capital structure on the market valuation of quoted agricultural firms in Nigeria.

### **STATEMENT OF THE PROBLEM**

For a firm to perform efficiently, it has to develop a capital structure that lowers the cost of debt (capital), generates tax shield benefits from debt financing, and reduces the agency cost of debt and equity. However, the optimal capital structure for a firm is not easy to determine. A firm would have to issue various securities in a countless mixture to determine a combination that maximizes its overall value. What qualifies as optimal capital structure remains one of the most controversial issues in modern finance. In contrast, failure to consider capital structure might lead to low profitability, failure to invest in high-return projects, and ultimately, a decrease in the value and shareholders' wealth (in a nutshell, poor firm performance). For most financial and business analysts, the causes of companies' failure are not unconnected to poor financing decisions, weak capital base, absence of optimal capital structure, and high cost of debt capital, among others.

Furthermore, many managers of agricultural firms in Nigeria are said to be facing a lot of challenges relative to capital structure. One major problem is determining the best way to choose a combination of debt and equity to achieve optimum capital structure that would minimize the firm's cost of capital and improve return to shareholders. Unfortunately, many financial managers of agricultural firms do not have clear-cut guidelines that they can consult when deciding on a connection with capital structure. Thus, optimal capital structure puzzles many managers, while poor knowledge of capital structure can lead to low profitability and poor market value.

Specifically, Nigerian agricultural firms face several challenges concerning capital structure, which can affect their market value and hinder their growth and sustainability. First, many Nigerian agricultural firms struggle to access affordable financing options. They often face difficulties obtaining long-term loans due to the high interest rates and stringent collateral requirements imposed by

financial institutions. Limited access to financing restricts their ability to invest in modern technology, expand operations, and optimize production capacity, leading to decreased profitability and market value. In addition to this, many agricultural firms in Nigeria often face high borrowing costs, which erode profitability and hinder investment opportunities. High interest rates in the country make debt financing expensive, which can significantly impact these firms' capital structure. The cost of borrowing reduces the willingness of agricultural firms to take on additional debt, resulting in lower financial leverage ratios. Also, Nigerian agricultural firms often face the challenges of a volatile macroeconomic environment characterized by high inflation rates, fluctuating exchange rates, and policy uncertainties. These factors contribute to higher production costs, reduce consumer purchasing power, and increase the risk of default on debt obligations. The uncertainty in the business environment makes it challenging for agricultural firms to plan and execute long-term investment strategies, consequently reducing their market value.

Consequently, many studies have empirically determined the effects of capital structure on the performance of firms across the world, Nigeria inclusive. However, there is a knowledge gap, and the researcher is optimistic that this present study fits in to fill such a gap. To start with, conflicting results emanated from the empirical studies reviewed, while some studies (Segun & Vincent, 2022; Edore & Ujuju, 2020; Sebastian & Onuegbu, 2018; Nwude, Itiri, Agbadua & Udeh, 2016) found a negative relation running from capital structure to performance, some studies (Ohaka, Edori & Ekweozor, 2020; Ahmadu, Malami, Musa & Haruna, 2018) found positive relation running from financial structure to performance. To the best of the researcher's knowledge, most of these empirical works are of foreign origin, and their findings may not be compatible with the Nigerian situation, considering environmental differences. Also, very few studies are available on the effect of capital structure on the market valuation of quoted agricultural firms in Nigeria. In addition, most of these studies are not current or up-to-date as they failed to use the most recent data. In other words, none of the related studies used 2022 data. To fill this gap, this study intends to empirically analyze "the effects of capital structure on market valuation of quoted agricultural firms in Nigeria." The study will make use of panel data that covers up to 2022. This will make this study more current or up-to-date than previous related studies.

### OBJECTIVES OF THE STUDY

This study aims to examine the effect of capital structure on the market valuation of quoted agricultural firms in Nigeria. The specific objectives are stated as follows:

1. To analyze the effect of the debt-to-assets ratio (DAR) on market valuation of quoted agricultural firms in Nigeria.
2. To determine the effect of debt-to-equity ratio (DER) on market valuation of quoted agricultural firms in Nigeria.
3. To ascertain the effect of long-term debt ratio (LTDR) on market valuation of quoted agricultural firms in Nigeria.
4. To examine the effect of short-term debt ratio (STDR) on market valuation of quoted agricultural firms in Nigeria.

### RESEARCH QUESTIONS

The following research questions are presented and will be addressed in this study in order to meet the aforementioned goals:

1. To what extent does debt-to-assets ratio (DAR) affect market valuation of quoted agricultural firms in Nigeria?
2. To what extent does debt-to-equity ratio (DER) affect market valuation of quoted agricultural firms in Nigeria?
3. To what extent does long-term debt ratio (LTDR) affect return on market valuation of quoted agricultural firms in Nigeria?
4. To what extent does short-term debt ratio (STDR) affect market valuation of quoted agricultural firms in Nigeria?

### RESEARCH HYPOTHESES

These are the hypotheses that have been developed and will be investigated in this study in order to fulfill the aforementioned goals and address the research questions:

**H<sub>01</sub>:** There is no significant relationship between debt-to-assets ratio (DAR) and market valuation of quoted agricultural firms in Nigeria.

**H<sub>02</sub>:** There is no significant relationship between debt-to-equity ratio (DER) and market valuation of quoted agricultural firms in Nigeria.

**H<sub>03</sub>:** There is no significant relationship between long-term debt ratio (LTDR) and market valuation of quoted agricultural firms in Nigeria. debt-to-equity ratio

**H<sub>04</sub>:** There is no significant relationship between short-term debt ratio (STDR) and market valuation of quoted agricultural firms in Nigeria.

### SIGNIFICANCE OF THE STUDY

This study has used an empirical approach to appraise the effects of capital structure on market valuation of quoted agricultural firms in Nigeria. The study will therefore be of great significance to different groups and personnel in the following ways:

First and foremost, this study will theoretically and empirically add to the existing body of knowledge and as well make up for the paucity of scholarly literature on effects of capital structure on market valuation of quoted agricultural firms in Nigeria. In addition, it will possibly spur other studies aimed at either sustaining or debunking its evidence. Also, the study will give an insight into some

of the statutory provisions put in place by relevant regulatory authorities to strengthen the financing decision of agricultural firms in Nigeria.

In addition, managers of agricultural firms that have the sole obligation of maximizing shareholders' wealth will be able to use the output of this study to predict the possible outcomes of the changes their firms undertake on capital structure. Thus, the study will assist them in choosing a capital structure that maximizes the shareholders' wealth and improves their firms' market valuation. The results of this study will also be helpful to investors who want to see a favorable return on their investments, particularly in agricultural enterprises, since they will allow them to determine the degree of risk to which their assets are exposed.

Furthermore, through the findings and recommendations of this study, shareholders will be able to make informed and good decisions regarding their equity interest in relation to the capital structure options available to their firms. Lastly, this study will serve as a source of data and accurate information to future researchers interested in carrying out research on the topic "the effects of capital structure on market valuation of quoted agricultural firms in Nigeria". In other words, researchers and scholars that might want to conduct future research on the topic will benefit from this research work as it will serve as a source of vital information and references.

### **SCOPE OF THE STUDY**

This study centers on the investigation of the effects of capital structure on market valuation of quoted agricultural firms in Nigeria. The content of the study focuses on capital structure and its proxies (debt-to-assets ratio, debt-to-equity ratio, long-term debt ratio and short-term debt ratio) as well as market valuation and its measure (market capitalization). Furthermore, the time scope of the study is between 2012 and 2022 using panel data to be extracted mainly from corporate annual financial report/statement of agricultural firms in Nigeria quoted on the Nigerian Exchange Group (NGX) as at December 31<sup>st</sup>, 2022. Lastly, the geographical scope of the study is agricultural firms in Nigeria.

### **CONCEPTUAL REVIEW**

#### **Concept of Capital structure**

This covers the many kinds of liabilities and stocks. A company's capital structure describes the combination of its financial responsibilities. An organization can finance its assets in one of two ways: either through external debt or internal equity. A company's capital structure is how it finances itself by combining stock and debt, both long- and short-term. It demonstrates how a business uses several funding sources to support its expansion and general operations (McMenamin, 2009). Capital structure can be described as the combination of long-term debt, preference debt, common equity, and debentures—all of which exclude short-term credit, such as overdraft—that a company uses to finance its operations. Leverage is the amount of debt a company utilizes to fund its assets. According to Uche (2012), a company is considered highly levered if it has a large amount of debt in its capital structure, and it is considered unlevered if it has none.

Capital structure encompasses various avenues open to a firm to finance its operations. A firm can finance its assets by only equity, only debt or a hybrid of the two. Bonds, debentures and other forms of long-term debt can be mixed with equity in order to derive tax shield benefit and maximize the market value of a firm's shares (Mahira, 2011). However, there are several kinds of equity and debt. These include bonds, bank loans, accounts payable, line of credit, preferred shares, and retained earnings (untaxed reserves). Firms' capital structures differ according to their size, nature, and a few other factors, including age, size, asset composition, profitability, growth, risk, and liquidity (Al-Najjar & Taylor, 2018).

The term "capital structure" describes how a business supports itself using a mix of debt, equity, and hybrid instruments. It is clear from all of the aforementioned definitions that capital structure, in short, relates to the liability structure of a company. To optimize shareholder value and reduce the company's cost of capital, capital structure management aims to combine various funding sources (Ross, 2015). Capital structure of a corporation is such a critical aspect that boosts its performance. The combination of a firm's financial liabilities is referred to as its capital structure. From the perspective of strategic management, it has been a significant problem since it is related to a company's capacity to satisfy the needs of different stakeholders (Onalapo & Kajola, 2010).

#### **Capital Structure Decisions for Firms**

According to Benito (2013) the capital structure decisions of firms have serious implications on both the macro and micro-levels of the economy. On the micro level, the capital structure decisions of companies cost them a lot of time and money in searching out and ascertaining the best capital structure policy to adopt and this has been evidenced amongst firms (Harris & Raviv, 1991). Capital structure decisions' importance cannot be overemphasized and therefore, it is of necessity that firms should know this before deciding its mix. Similarly, at the macroeconomic level, the capital structure decisions have great implications. In deciding the capital structure of firms, Benito (2013) also argued that firms should determine their capital structure based on applying the trade-off theory or the pecking order theory. He argued that in applying the trade-off theory, firms will settle for the capital structure at that margin where firms trade-off the benefits of an additional debt against the costs. The benefits of additional debt include reduced agency cost of



deriving the debt, tax cover as a result of interest payable on the debt; and the costs of debt include bankruptcy cost as a result of non re-payment of debt (Brealey & Myers, 2010).

A company's capital structure decision may be seen from both the management and ownership perspectives (Du & Dai, 2012). According to Pindado and Torre (2014), the objectives and motivations of the people in charge of the company impact its capital structure. They argued that when the owners who have a high stake in organization is in control of capital structure policy, they would prefer debt financing to equity capital because debt capital would act as a good check on the managers appointed to run the organization. This is so because the managers would want to do all their best to ensure they perform and pay off the debt. At the same time, these controlling owners would not want to dilute their ownership control by selling their stake to new shareholders who would want to invest in the company. Hence, there is a discouragement from engaging equity finance in financing the operation of the company. Therefore, when shareholders are in control of the capital structure policy, they would prefer debt financing. But when managers are in control, they would play less on debt capital because of the risk and the disciplinary role debt plays.

Pindado and Torre (2014) further state that the best way to control managerial discretion and effective management control of the firm is through debt financing. Moreover, the use of debt capital tends to align the interest of managers with those of shareholders. They further said that the use of debt financing tends to reduce the costs associated with the agency problem due to the fact that use of debt would cause the managers to subject their actions to public scrutiny as a result of the financing reporting requirements of the regulatory authorities. Frank and Goyal (2003) in a related study also identified that the agency theory can be applicable to using debt financing to curb the tendency managers may have in overspending their free cash flows.

### Determinants of Capital Structure

According to Nwude (2013) some of the determinants of capital structure include:

- i. Size of the company:** The size and goodwill of a company influence its ability to raise funds from different sources. Some small firms find it difficult to raise long-term loans and where it is available, the risks, terms and interest rates involved are high. Large companies can easily raise funds through various sources. Thus, small firms will be forced to adopt low debt capital structure while large ones will be encouraged to have high debt capital structure.
- ii. Flexibility:** This refers to the company's capacity to modify its capital structure to meet the demands of evolving circumstances. When funding is needed, the firm should be able to raise it without undue delay or expense. Such changing conditions may allow a borrower to replace an expensive source of funds with cheaper source. For instance, if a company has an outstanding debt at 35% interest rate while the interest rate is 15%, with flexibility allowed, the company should borrow at 15% and pay off the outstanding debt that attract 35% interest rate.
- iii. Asset Structure:** Asset structure of a business influences the sources of funds in several ways. For instance, firms with marketable assets, both current and fixed assets can attract long-term debts extensively. Such companies include those in the delivery of essential products and services like the utilities (water, electricity, communications, and housing) can easily obtain long term debts from many sources. Businesses that primarily own inventories and receivables, the value of which depends on the ongoing success of the particular business, tend to rely more on short-term financing than on long-term debt financing. Examples of such business entities can be seen in the wholesale and retail trading outfits. Therefore, the amount and quality of assets, guarantees or other forms of security that are available to lenders determine the type of borrowing.
- iv. Stability of Sales:** A company can incur fixed costs of debt with less risk when revenues and earnings are more stable than when they are prone to periodic changes. Equity financing may be desirable if sales and earnings are growing at a favorable rate. This will attract high share price to the common stock and also increase the proceeds from sale of external equity. Furthermore, the debt-servicing capacity is dependent upon the profitability as well as the volume of sales. The ease with which new firms may enter the industry and the ability of competing firms to expand capacity will influence profit margins. A growth industry promises higher profit margins, but such margins are likely to increase through additional entry. In fact, stability of sales and profits means companies can incur interest charged with less risk than when sales and profits are volatile.
- v. Marketability of Financial Instruments:** The readiness of the investors to buy the financial securities, if floated, should be ascertained. The timing of the flotation in a given period of time and the reasonability of the demand of the investors should be considered. The method of financing should be evaluated with the general market conditions. If the equity market is depressed and the debt market is favored use debt issues, otherwise use equity. If the economy is in a period of boom, the market will demand for equity stocks. As such, if the economy is experiencing a recession, because of high level of risk, investors will prefer debt instruments that guarantee them periodic earnings.
- vi. Borrowing Powers:** This is normally entrenched in the articles of association of a company. The guideline on how and when to exercise the borrowing powers should be followed. If there is no such provision in place, the business may not raise funds by means of issuing debts instruments. However, prudent financial management dictates that a firm should only borrow money up to the level of its debt capacity.
- vii. Management Attitude:** If the existing management is governed by its desire to continue its control over the company as in entrepreneurship, without any outside or external interference, then shareholders equity will be most appropriate. The wisest

course of action for a firm is to maintain control and provide dividends and capital gains to its shareholders. Large firms whose stock is widely owned may choose additional sales of common stock, because they will have little influence on the control of the firm. At times, the management is often less willing to take risk of heavy fixed charges, which will deplete the earnings. In contrast, the owners of small firms may prefer to avoid issuing common stock in order to be assured of continued control because they have confidence in the prospects of their companies. Manager of such firms are often willing to incur high debt ratios because they can see large potential gains resulting from leverage.

**viii. Dividend Policy:** This plays its own part in the sense that the higher the payout ratio, the higher the need for external funding and vice versa. Cash flow available to meet payments of interest and principal to lenders must be convincing as to meet these obligations safely.

**ix. Trading on Equity:** Trading on equity is the raising of loans based on the existence of equity interests in order to take advantage of the cheap fixed charge interest on the loans to make higher profit for the equity holders. A firm is said to trade on thick equity when the amount of borrowed funds is small compared to the amount of equity interest outstanding. When the proportion of borrowed funds is large compared to the amount of equity interests, it is trading on thin equity. In a period of boom in business activities, interest charge is often less than the amount of dividends that are paid out to shareholders, hence it is better to be financially levered. However, a company wishing to trade on equity is advised to take time and ensure that it has stable earnings; the product has no wide elasticity; it has large fixed assets investment; and the field of enterprise should be well established.

**x. Relative Cost of Raising Debt and Equity Capitals:** Flotation cost of issuing equity and debt instruments should be weighed against each other. The one that offers the cheaper cost is usually preferred.

### Proxies of Capital structure

The proxies of capital structure adopted in this study include debt-to-assets ratio, debt-to-equity ratio, long-term debt ratio and short-term debt ratio. These proxies are discussed below:

**a. Debt-to-Asset Ratio:** The percentage of a company's assets that are financed by loans or other long-term financial commitments is expressed as the total debt ratio. According to Abor (2009), the ratio offers a broad assessment of a company's long-term financial situation, including its capacity to satisfy loan obligations. A decline in the long-term debt to total assets ratio from year to year may indicate that a corporation is gradually moving away from using debt to expand. The calculation for the long-term debt to total assets ratio is: long-term debt / total assets = long-term debt to total asset ratio (Benito, 2013). Though this measure is included in the two measures already outlined above, some analysts largely use this measure, given that most interest costs are incurred on a long term borrowed funds, and because long-term borrowing places "multiple - years - fixed financial obligations on a firm" (Brealey & Myers, 2010). Mathematically, debt to asset ratio is given as:

$$\text{Debt-to-Asset Ratio (DAR)} = \frac{\text{total debt}}{\text{total assets}}$$

**b. Debt-to-Equity Ratio:** Debt/equity ratio is similar to the debt ratio and relates the amount of a firm's debt financing to the amount of equity financing. Actually, this measure of cost of debt capital is not a new measure. According to Nwude (2013) debt/equity ratio is the quantitative measure of the proportion of the total debt to residual owners' equity. Thus, it is an indicator of a company's capital structure on whether the company is more reliant on borrowing (debt) or using shareholders' capital (equity) to fund assets and operations. A debt ratio used to assess a firm's financial leverage is called the debt/equity (D/E) ratio, which is computed by dividing the total liabilities of the company by the equity held by its stockholders. According to McMenamin (2009), the D/E ratio shows how much debt a firm is utilizing to fund its assets in relation to the value of shareholders' equity. Mathematically, debt/equity ratio is given as:

$$\text{Debt-to-Equity Ratio (DER)} = \frac{\text{total debt}}{\text{equity}}$$

**c. Short-Term Debt Ratio:** Short-term debt ratio is the amount of a firm's short debt financing to the amount of firm's total asset. Every debt committed by a company that is due within a year is included in the account known as "short-term debt," which is displayed in the current liabilities section of the company's statement of financial status. Among other things, short-term bank loans typically make up the debt in a company's liabilities statement (Olaniyi, Elulu & Abdusalam, 2015). Additionally, Onoja and Ovayioza (2015) discovered that short-term debts are better at lowering management discretion and moral hazard on the part of the company. Actually, one key indicator of a company's financial health is the total quantity of outstanding short-term debt. Since short-term debt is thought to be less expensive or more affordable for businesses, it is the ideal financing option (Nwude, Itiri & Agbadua, 2016).

Mathematically, short-term debt ratio is given as:

$$\text{Short-Term Debt Ratio (STDR)} = \frac{\text{short term debt}}{\text{total debt}}$$

**d. Long-term Debt Ratio:** Long-term debt ratio is the amount of a firm's long debt financing to the amount of firm total asset. The percentage of assets funded by debt that is due after more than a year is shown by long-term debts. Bonds and long-term loans are included. Because lenders are demanding a bigger return in return for taking on the greater risk of making long-term loans, these bonds and loans often have higher interest rates. In actuality, long-term debt restricts management discretion by decreasing the likelihood of overinvestment and gaining access to fresh funding (Hart & Moore, 2015). The long-term debt to total assets ratio

indicates the percentage of a company's assets that are funded by loans or other long-term financial obligations. According to Abor (2009), the ratio offers a broad assessment of a company's long-term financial situation, including its capacity to satisfy loan obligations. The calculation for the long-term debt to total assets ratio is:  $\text{long-term debt} / \text{total assets} = \text{long-term debt to total asset ratio}$  (Benito, 2013). Though this measure is included in the two measures already outlined above, some analysts largely use this measure, given that most interest costs are incurred on a long term borrowed funds, and because long-term borrowing places "multiple - years - fixed financial obligations on a firm" (Brealey & Myers, 2010). Long term debt ratio is the long-term debt divided by total asset. Mathematically, long-term debt ratio is given as:

$$\text{Long-Term Debt Ratio (LTDR)} = \frac{\text{long term debt}}{\text{total assets}}$$

### Concept of Market Valuation

Valuation is the process of determining the intrinsic value of common stocks. In order to understand valuation, two main concepts of value must be understood. First, the discounted cash flow approach is the widely recognized theoretical foundation for valuing any financial asset (Reilly & Brown, 2013). An assessment of the current value of each anticipated future cash flow to shareholders is necessary for valuation. Put another way, it entails speculating about the numerous variables influencing future cash flows while gazing into an uncertain future. Since the future is uncertain, intrinsic value estimates will always be subjective and imprecise. A market value is an economic concept that reflects the value of a business. It is the value a business is worth at a particular date. It is, in theory, the sum of money required to purchase or acquire control of a company firm (Magni, 2019). The amount that an asset or business is worth, as determined by market participants, in the financial market is referred to as its market value. It is frequently used to refer to a company's market capitalization, which is determined by multiplying the number of shares in circulation by the price at which the shares are currently trading. Either book value or market value can be used to calculate a company's value. In other words, the accounting net worth and book value can be used to measure the value of a firm. High net worth firms are considered to have a higher firm value when compared to others (Magni, 2019).

Therefore, market valuation is defined as the art or science of determining the worth of a specific stake in a business for a specific purpose at a given moment in time while taking into consideration all other market elements and all firm qualities. It is the estimation of firm value to reflect its exchange price in the open market at a given point in time (Ogunba & Iroham, 2010). According to Babawale (2006), just as investment performance measures for equities and bonds are based on actual transaction prices that are easily observable, those valuations are necessary as a proxy for obtainable transaction prices in the measurement of investment performance for commercial property assets. As the foundation for performance analyses, financing choices, transactional or development guidance, taxation, and dispute resolution, accurate valuations are essential to a robust real estate market and a stable economy (Royal Institute of Chartered Surveyors, 2012).

### Proxies of Market Valuation

The proxies of market valuation adopted in this study include market value, market capitalization and net present value. These measures are discussed in this section as follow:

#### a. Market Value

The amount that an asset or business is worth, as determined by market participants, in the financial market is referred to as its market value. It is commonly used to describe the market capitalization of a corporation, which is calculated by multiplying the number of shares that are circulating by the current share price. The present cost of an asset, market-traded securities, or business is referred to as its market value. More simply, it is used to describe the value of these on the market. A market value is an economic concept that reflects the value of a business. It is the value a business is worth at a particular date. Theoretically, it is an amount that needs to be paid to buy/take over a business entity (Watson & Head, 2004). Either book value or market value can be used to calculate a company's worth. There are various extents to which the value of a firm can be measured. The accounting net worth and book value can be used to measure the value of a firm. High net worth firms are considered to have a higher firm value when compared to others. Using the book value of a firm is faced with various problems a result of certain issues in accounting. Also, a firm market value can be determined through the value of outstanding shares. A firm that has a relatively larger market value of outstanding shares is considered to have a higher firm value (Waswa, 2013). An organization's assets are represented by its market value. It is important since it explains the business owners' wealth. As the company's representative, the manager is in charge of maximizing the company's value to the best of their abilities, which is the main goal of every organization. A corporation with a high market value is likely wealthy, which maximizes the wealth of its stockholders. The business value is a reflection of the investors' and shareholders' degree of prosperity. One metric used to evaluate a company's performance is its market value. The firm value of the company is another way that investors view it, and it is connected to the stock price. A higher business value will result from a high stock price, claim Ftouhi, Ayed, and Zemzem (2010). According to Bhabra (2007), firm value is the public's objective assessment of a company and its direction for sustainability, whereas market value is the amount a wealthy buyer pays to purchase it. The aforementioned makes it evident that market value, which is typically linked to stock price, is the investors' assessment of a company's degree of success. Price to book value is a common indicator of market value.

#### b. Market Capitalization

The entire worth of all of a company's stock shares is known as market capitalization. It is computed by multiplying a stock's price by the total number of shares that are outstanding. Since outstanding stock is purchased and sold on open markets, capitalization plays a role in some types of stock valuation and may serve as a gauge of the general public's perception of a company's net value. Only a company's equity worth is reflected in its market capitalization. The distribution of a company's total value between debt and equity is largely determined by the capital structure that a company chooses (Pandy, 2005).

**c. Net Present Value (NPV)**

The net present value rule discounts future expected payoffs to see if the present value of these payoffs is higher than the initial investment. The higher the net present value, the bigger the positive difference between the present value of future payoffs and the initial investment. The discounting procedure takes place because the value of a dollar today for instance, is not the same as the value of a naira in a year (Wambach, 2010). Net present value is the difference over a certain period of time between the present value of cash inflows and outflows. In capital budgeting and investment planning, net present value is used to assess the profitability of a proposed project or investment. The outcome of computations performed to determine a future stream of payments' current worth is known as net present value. It may be used to assess comparable investment options and takes the time worth of money into consideration. Any project or investment with a negative net present value need to be avoided. The net present value is dependent on a discount rate, which may be obtained from the cost of the capital needed to undertake the investment. Stated differently, it is the difference over a certain period of time between the present value of cash inflows and outflows. The fact that net present value analysis relies on potentially unreliable assumptions about future occurrences is a significant disadvantage.

## THEORETICAL FRAMEWORK

Many theories have been propounded on capital structure and market valuation. Some of these theories, on which this study is anchored, are discussed as follow:

### Trade-off Theory

The Trade-off Theory, which Myers (1984) presented, argues for the importance of capital structure. The M&M theorem controversy gave rise to the hypothesis (Ajibola, Wisdom & Qudus, 2018). According to this view, businesses have an ideal capital structure and are moving in the right direction. It also underlined the necessity of striking a balance between tax benefits and bankruptcy costs for businesses using debt in their capital structures. According to Ohaka, Edori and Ekweozor (2020) Trade off theory has to do with cost-benefit analysis performed in business operations. The theory states that the trade-off between the benefits the debts cost is the optimal capital structure. According to Graham and Harvey (2001) the trade-off theory connotes firms' choice of leverage between the benefits and cost of debt and the trade-off of costs and benefits of borrowing while holding firms' asset constant as a determinant of a firms' optimal debt ratio. The trade-off theory summarized the balance of diverse benefits and cost as it concerns debt for optimal capital structure. Trade-off theory states that companies with more growth potential should take longer to borrow money since they are more likely to lose value in a financial crisis. This is so because safe firms are predicted by trade-off theory. In other words, companies with more taxable revenue and greater physical assets to protect should have higher debt ratios. A riskier company, one that has more intangible assets whose value could vanish in the event of a liquidation, will need to rely more on equity funding. According to trade-off theory, more prosperous businesses should be able to service more debt and have more taxable revenue to shelter; as a result, a larger debt ratio is expected.

### Agency Cost Theory

The theory was first developed by Berle and Means in 1932 and improved upon by Jensen and Meckling in 1976). This theory acknowledged the fact that debt is the main factor that gives rise to conflict of interest between equity holders (principal) and managers (agent) in an organization. This problem is associated with principal principle relationship. Managers may overinvest in initiatives with negative net present value (NPV) due to the availability of free cash flow, which would lower the firm's worth. Therefore, the capability of the manager to promote their interests is restricted by the availability of free cash flows. Jensen and Meckling (1976) posited that "there will always be conflict of interest between owners and managers which may results to an increase in agency costs and because of this there is need to separate ownership from control to achieve optimal capital structure". Jensen and Meckling (1976) further emphasize that the ownership structure of the company affects the probability distribution of the cash flows it generates, and that this fact may be utilized to explain the ideal capital structure. Hence, the scholars conclude that, given increasing agency costs with both the equity-holders and debt holders, the optimal capital structure can be attained by combining the outside debt and equity to reduce the agency costs.

### Pecking Order Theory

This theory, also known as information symmetry theory, was postulated by Myers. According to his opinion, companies would rather fund new investments internally using retained earnings, then externally using debt, and lastly issuing new shares. He argues that optimal debt/equity mix is difficult to define as equity appears at the top and base of the pecking order. Internal funds incur no



floatation costs and require no relation of the firm's proprietary financial information which may include firms' potential investment opportunities and gains expected to accrue as resulting from undertaking such investments. The Pecking Order theory underscores or draws attention to what a firm's management chooses - a pecking order of alternative sources of finance that are available to a firm (Myers, 1984). First, every firm chooses to finance its operations with the available profits from the previous years. This profit is also known as retained earnings. Second, if there is no internal finance, or what is available is insufficient, the firm will choose to borrow funds from external sources, example; financial institutions such as banks. Third, the firm issues new shares as a last resort.

In Pecking Order theory, management favours internal financing than debt financing. In an article, "The Capital Structure Puzzle", Myers (1984) discussed why pecking order is adopted by various firms; this is because it goes against the shareholders' interest in returns. Managerial view has it that professional managers avoid relying on debt finance, because it would subject them to the control or discipline of the capital market (Myers, 1984). Another issue worthy of note is that of transaction costs; financing a firm's operation with retained earnings is cheaper than with debt since debt finance is associated with high costs. Most profitable firms that adopt this pecking order theory make use of their internal finance to fund their operations, while the less profitable firms resort to external finance to fund their operations (Myers, 1984). According to Hutchinson (1995), profit retention has an opportunity cost attached to it. To say the least, the more the firm is willing to risk by employing debt finance, the more the possible profits.

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

In 1958, Modigliani and Miller proposed this hypothesis. The Modigliani and Miller (MM) Theory shows that a firm's capital structure has no impact on its value, provided that a few critical assumptions are met. In Modigliani and Miller's universe, the capital market is taken to be ideal, with free information available to both insiders and outsiders, no transaction costs, no bankruptcy fees, no taxes, no option between debt and equity, and flawless internal and external fund substitution. According to the M-M hypothesis, a company's worth shouldn't be based on its capital structure. The idea went on to say that a company's worth should be determined by the risks and returns associated with its activities rather than by how it funds them, and that all capital structure levels should have the same weighted average cost of capital and market value. Capital structure may become important to the firm's value if these fundamental presumptions are loosened (Egbeonu, Edori & Edori, 2016).

The argument that there isn't a perfect market in the actual world has been used to refute this notion. The trade-off hypothesis is an attempt to loosen these presumptions, mainly the notion that there are no taxes or costs associated with bankruptcy. The M&M theory opined the irrelevancy of capital structure in the performance of firm. Modigliani and Miller (M&M) assume that in the determination of a firm's share value, dividend is irrelevant, reason being that it has no "impact on the shareholder's wealth. According to the theory, in the absence of corporate tax, transaction cost and agency cost (perfect market conditions), the capital mixed in the firm's statement of financial position is insignificance to the performance (Ohaka, Edori & Ekweozor, 2020).

### **Empirical Review**

Chinedu (2022) researched the association between capital structure and financial performance of listed pharmaceutical businesses in Nigeria from 2013 to 2017. The Nigerian Exchange Group designated ten (10) pharmaceutical companies in Nigeria as the population of the study, which employed an ex post facto research design, in 2021. From 2013 to 2017, information was taken from the annual reports of the chosen publicly listed pharmaceutical businesses. The data collected with Stata12 statistical software was analyzed using multiple regression analysis. The research discovered a positive and significant association between equity capital and profit before tax of Nigerian listed pharmaceutical companies. It also indicated the existence of a positive and significant association between listed companies' equity capital and return on assets. As a result, it was advised that management of Nigeria's listed pharmaceutical companies focus more on equity capital since it plays a significant role in boosting profit before taxes and that equity capital should be promoted in order to highlight the asset return of these companies.

Evbayiro-Osagie and Enadeghe (2022) investigated the effect of capital structure on the performance of nonfinancial firms in Sub-Saharan Africa. The study was empirically carried out from 2012 to 2020, covering a period of nine years. The study sampled forty non-financial firms in Sub-Saharan Africa. The study proxied capital structure by long term debt to equity, total debt, total debt to equity, and total debt to total assets while return-on-assets was used to proxy performance. The study made use of panel data will regression technique was employed. The result of the study showed that by long term debt to equity, total debt and total debt to equity have positive effect on return-on-assets performance; while total debt to total assets has a negative impact on return-on-assets performance, and all variables were significant at 1 percent level. According to the study, management should stick to their current policies and exercise extreme caution when deciding how much long-term debt is appropriate to include in their capital structure build-up, as long-term debt to equity explains corporate performance in Sub-Saharan African countries.

Akani and Chukwuemeka (2021) examined the relationship between capital structure decision and performance of quoted small and medium scale enterprise in Nigeria. The objective was to investigate how various components of capital structure affects return on equity. Ten small and medium enterprises were selected from the population. Panel time series data were sourced from audited financial statement of the sampled small and medium enterprises. Retained earnings, loan capital, equity capital, and return on equity were all included in the model. Fixed effect model was adopted after a cross examination of the validity of the models. It was found that 89.6 percent of the total variations in the return on equity is accounted for, by the explanatory variables. The findings proved that short term debt ratio have positive but no significant effect, retained earnings have positive but no significant effect, debt to total assets ratio have positive but no significant effect while ordinary share capital and debt equity ratio have negative and no significant effect on return on equity of the quoted small and medium scale enterprise. In line with the pecking order hypothesis, the study suggested that small and medium-sized businesses use retained earnings, borrowed capital, and equity capital to fund initiatives. The small and medium-sized business companies that are quoted need to be aware of the financing issues that are represented by the distinction between various financing sources, especially when it comes to investment debt funds that outweigh capital costs. This has an impact on sales volume and profitability growth. The small and medium-sized business enterprises that are being quoted have to understand the connection between capital structure choices and profitability, considering the external environment as a crucial component of their strategy research.

An examination of the impact of capital structure on the corporate performance of agricultural companies listed on the Nigeria Stock Exchange (NSE) was given by Chika and Afamefuna in 2021. More specifically, the impact on return on assets, return on equity, and net profit margin were determined for total debt to total assets, total debt to total equity, and short-term debt to total assets, respectively. The annual reports of all the companies listed on the Nigerian Stock Exchange (NSE) served as the source of secondary data for the years 2007 through 2018. The Panel Ordinary Least Square (POLS) and the Granger Causality test were the techniques employed in estimating the models. The results of the analysis revealed that total debt to total assets, total debt to total equity, short-term debt to total assets have a significant effect on return on assets, return on equity, and net profit margin of agricultural firms in Nigeria. Firms in the agricultural sector are encouraged to fund their operations with more equity capital as debt financing negatively influences shareholder wealth. Also, management of agricultural firms should consider the use of more short-term debt relative to equity capital in preference to long-term debt in their financing mix.

The financial structure and business performance of Nigerian consumer goods manufacturing companies listed on the Nigerian Stock Exchange were studied by Oke and Fadaka (2021). This study was required due to inconsistent findings about the relationship between capital structure and business performance. Secondary data were gathered from manufacturers of consumer products that were listed on the Nigerian stock market. The panel data approach was utilized to sample the 18 listed manufacturing businesses from 2008 to 2018, and a total of 18 companies were employed in this study. The study employed return on equity, return on asset, Tobin's Q, and earning per share—popular accounting and financial metrics that are widely used in the extensive literature on the topic—as the dependent variable. The study's independent variable, capital structure, was measured using growth, total debt ratios, long-term debt, and short-term debt. Size was also a control variable in the study. Regression analysis performed for this study's results demonstrated that, among listed Nigerian manufacturing businesses, capital structure and company performance are negatively correlated. Furthermore, for the 18 consumer products manufacturing businesses, there was a favorable association between growth and performance.

Omotola, Phillips, and Nuga (2021) investigated the effects of a few selected Nigerian telecoms businesses' financial structures on their operational performance. The annual financial statements of five telecommunication firms listed on the Nigerian stock exchange ranging from 2016-2020 were used for this study. In order to test the significant impact of capital structure on a firm's performance, the study used a fixed effect regression model. As a result, the equity ratio and debt ratio were used as indicators of capital structure, and return on asset (ROA), return on equity (ROE), and earnings per share (EPS) were used as proxies for firm performance. The finding revealed that capital structure has positive significant effect on corporate performance of selected telecommunication firms in Nigeria. According to the report, telecom businesses should have policies in place that will support increases in their profit after taxes, dividends, and turnover since these factors have the potential to significantly improve both the performance of the business and its market capitalization value.

Kolapo, Dada, and Mokuolu (2021) used data from a few listed Nigerian pharmaceutical companies from 2009 to 2017 to investigate the impact of capital structure on business performance. The study adopted the panel regression analysis with dependent variables proxied financial performance as return on asset (ROA) and return on equity (ROE), while independent variables are debt to equity ratio (DER), long term debt ratio (LDR), short term debt ratio (SDR), total asset (SIZE) and inflation rate (INF). The fixed effect results in the two models indicate that only firm size was significant and negatively connected to pharmaceutical firms' performance using return on asset. From the outcomes, there is evidence of no significant rapport between capital structure and performance of firms in the pharmaceutical industry in Nigeria. However, the significance of the two models adopted connotes that there are other variables outside the models that predict performance in the pharmaceutical industry, these variables can further be explored by other

researchers. However, based on the findings from the study, it was recommended that pharmaceutical firms should be cautious with their funding mix.

Asen et al., (2021) investigated the impact of capital structure metrics on the performance of Nigerian manufacturing firms. They were using annualized panel data for fifteen listed companies from various industry groupings between 1999 and 2018. The financial businesses were not included in the research because of their distinct capital structure and the stringent legal regulations surrounding their funding options. The study's main focus is on non-financial companies. The firm's market and book values are measured by capital structure. The findings show that while ROA has a negative impact on LDTA, D\_E, and TDTA, performance proxy measured by ROE and Tobin's Q strongly impacts SDTA, SIZE, LDTA, and TDTA. When compared to other book values, the results showed a strong correlation between Tobin's Q and financial performance. A more accurate indicator of performance throughout the review period is Tobin's Q. The survey also showed that short-term debt is a popular source of funding for Nigerian businesses, which is consistent with the Pecking Order Theory. It is important to remember that the impact of capital structure on company performance cannot be adequately explained by a single hypothesis.

Akindele, Asri, and Adedeji (2020) looked at how capital structure affected the performance of Nigerian commercial banks. The study analyzed data gathered from a sample of fourteen listed commercial banks between 2009 and 2016 using panel regression approach. Profit after tax and profits per share were utilized as performance indicators. The result showed a significant relationship between debt and profitability of commercial banks in Nigeria. The study concluded that debt can be significantly influenced by liquidity and shareholders' wealth. As a result, the research advised commercial bank management to utilize retained earnings and see debt as the least preferred option for financing the organization's capital structure rather than relying solely on debt capital.

Ohaka, Edori and Ekweozor (2020) examined the effect of debt financing on firm's financial performance in Nigeria. The study adopted the random sampling techniques to arrive at the sample size of the study. The secondary data was used in the study. Panel econometric tools were used to analyze the panel data of various companies across sectors in the capital market. The results of the analysis revealed that, size of the firm; short term debt and long-term debt have positive and significance impact on the financial performance of listed firms in Nigeria capital market. Since there is a positive and significant relationship between the variables, the study concluded that debt financing plays a significant role in a firm's financial performance. It then recommended that larger firms increase the proportion of debt in their financing operations to improve their financial performance.

Aniefor and Onatuyeh (2019) examined the effect of debt financing on the corporate performance of Listed Consumer Goods firms in Nigeria. Based on data extracted from the audited annual reports of fifteen (15) companies listed on the Nigerian Stock Exchange (NSE) between 2006 and 2017, panel regression analysis found that total debt, long-term debt, and short-term debt to asset ratios positively impact the performance of consumer goods companies in Nigeria. Based on its results, the report made many recommendations, including that Nigerian companies should concentrate more on creating internal strategies that can enhance their performance rather than relying too heavily on short-term debt, which accounts for the majority of their leverage.

Using time series data from 2000 to 2017, Uzokwe (2019) investigated the impact of debt financing on the financial performance of listed corporations in the Nigerian stock market. The relationship between debt to equity ratio, debt to equity ratio, equity ratio, total liability ratio, and long-term debt ratio was used to predict return on equity and return on assets. As a method of data analysis, multiple regressions were performed with the help of the statistical package for social sciences. With a correlation coefficient ( $r$ ) of.872, model one indicates that there is a high degree of association between return on assets and explanatory factors. With a coefficient of determination ( $r^2$ ) of.678, it can be concluded that changes in financial leverage account for 67.8% of variations in return on assets. Additionally, the correlation corresponding to the computed F-value of 8.338 is.004, indicating strong model usefulness. According to the significance test that was carried out and is displayed in the tables above, ROA has a computed value of 242.032 and a matching significance/probability value of.014. The direction of the variables is indicated by the positive sign of the t-value (1.653). Model two revealed a correlation coefficient ( $r$ ) of.772, which suggests that the explanatory factors and return on assets are highly correlated. With a coefficient of determination ( $r^2$ ) of.639, it can be concluded that changes in financial leverage account for 63.9% of variations in return on equity. Additionally, the correlation corresponding to the computed F-value of 7.644 is.004, indicating a decent model usefulness. According to the significance test that was carried out and is displayed in the tables above, ROE has a computed value of 568.906 and a matching significance/probability value of.003. The direction of the variables is indicated by the positive sign of the t-value (3.310). According to the study, management of the companies should put in a lot of effort to optimize the capital structure in order to maximize returns on equity and assets. Management of Nigerian companies should also increase their capital structure commitments in order to increase profits from their business dealings.

Kenn-Ndubuisi and Nweke (2019) used 80 non-financial companies listed on the Nigerian Stock Exchange between 2000 and 2015 to investigate the association between financial leverage and business financial performance in Nigeria. The debt to equity, cost of debt, debt to asset, and long-term debt to capital ratios were the measures used to illustrate financial leverage. To test hypotheses, panel data techniques such as the marginal model, fixed effect model, random effect model, and pooled regression model had been used. The findings of the study revealed earnings per share is significant and negatively related to the debt-to-equity ratio and the

total debt to total asset measures of financial leverage while the return on equity shows an insignificant relationship with the financial leverage measures in Nigeria while the direction of the relationship differs from one variable to the other. It was positive with the total debt to capital ratio and the cost of debt while the total debt to asset ratio, long term debt to capital ratios and the debt-to-equity ratio was negative.

Aziz and Abbas (2019) empirically investigated debt financing effect on firms' performance on Pakistan nonfinancial sector. The study attempted to examine the association of various debts financing on firms' performance in fourteen (14) sectors of Pakistan by employing the secondary method of data collection. Data were collected from fourteen (14) various sectors (Pakistan Stock Exchange) for nine (9) years period spanning from 2006 to 2014. Using the correlation analysis to check the strength of the relationship, the result indicated a negative effect of debt financing though significance on financial performance in Pakistan.

Omollo, Muturi, and Wanjare (2018) investigated how different debt arrangements—short-term, long-term, and total debt—affect the financial performance of Kenyan listed enterprises as shown by their return on equity and return on assets. Pooled ordinary least squares (OLS), fixed effects (FE), and random effects (RE) are three panel econometric methodologies used in this study to examine the impact of debt on the financial performance of forty non-financial companies listed between 2009 and 2015 on the Nairobi Securities Exchange. According to empirical findings, debt, both long-term and short-term, has a statistically significant negative impact on asset returns in both OLS and RE. Nevertheless, using all available estimating techniques, the debt metrics have no discernible impact on returns on equity. These contradictory empirical data partially support the ideas of Modigliani and Miller and partially follow the trade-off. Financial managers should thus modify debt levels to make sure they function at their best. Conversely, in order to reduce the default risks linked to excessive leverage, credit institutions should only fund companies up to the point where profitability is maximized.

Ehikioya (2018) investigated the variables affecting Nigerian enterprises' decisions on capital structure. The study analyzes data from Nigerian enterprises from 2011 to 2015 using a panel data regression model. The empirical analysis's conclusion shows that Nigerian businesses prefer to employ retained earnings and short-term loans on a rollover basis to fund their operations. This study's conclusion supports the idea that debt declines as profitability and growth prospects increase. The results demonstrate a positive and substantial association between the debt strategy of Nigerian enterprises and the tangibility of their assets and company size. Additionally, the data shows a negative and substantial association between the debt ratio of Nigerian enterprises and management ownership. The results of the study indicated a non-significant positive correlation between debt and non-debt tax shielding. The study shows that the variables influencing Nigerian enterprises' decisions on capital structure may be explained by both the trade-off and pecking order theories. As a result, this research recommended that stakeholders expand the financial markets and make it easier for businesses to get long-term funding for development and economic growth.

Sebastain and Onuegbu (2018) investigated how capital structure affected the performance of Nigerian corporations, concentrating on the consumer products industry. The data was analyzed using the multiple regression of ordinary least square (OLS) analytical approach. The study's findings demonstrated that capital structure had a negative and negligible effect on the corporate performance of Nigerian consumer products companies. It was shown that the returns on assets were negatively impacted by the long-term debt ratio to total assets as well as by the overall debt ratio to equity. Accordingly, the study came to the conclusion that capital structure has little bearing on how well a company performs. The study concluded that since there is a negative correlation between the capital structure and the profitability of corporate firms, managers should exercise caution when utilizing debt as a source of funding. Additionally, as this is compatible with the pecking order idea, business enterprises should attempt to finance their operations using retained earnings and only turn to debt as a last resort. This suggests that the study strongly advises corporate firms to finance their operations with a greater proportion of equity than debt. This is because, while debt capital can increase a business's value, there comes a point at which it becomes unfavorable or detrimental to the enterprise.

Tonye, Andabai, and Bina (2018) looked at financial leverage and how it affected Nigerian companies' corporate performance between 1999 and 2016. We used and gathered secondary data from the yearly reports and descriptions of different topics. Long-term debt was employed as the dependent variable in the study to gauge financial leverage, while return on equity and return on asset served as the explanatory variables to gauge the corporate performance of Nigerian companies. We used the Ordinary Least Square (OLS) econometrics approach to generate and test hypotheses. According to the study, return on asset significantly improved the long-term debt of Nigerian businesses. The long-term debt of Nigerian businesses was significantly positively impacted by return on equity. According to the coefficient of determination, changes in corporate performance indicators in Nigeria may account for around 36% of the fluctuations in long-term debt. The study also came to the conclusion that financial leverage significantly affects how well Nigerian companies perform as a whole. The study suggested that the balance sheet of the company should include an efficient management of long-term debts as well as other components of working capital.

The impact of debt financing on the financial performance of manufacturing enterprises listed on the Nairobi Securities Exchange was studied by Karuma, Ndambiri, and Oluoch (2018). During the five years from 2013 to 2017, the study looked into how interest rates, corporation tax rates, long-term and short-term debt, and manufacturing enterprises listed on the Nairobi Securities Exchange

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affected their financial success. Because the study took into account the link between one dependent variable and many independent variables, multiple linear regression models were used. The data were analyzed using regression analysis, correlation analysis, and descriptive statistics. The data was analyzed using the Statistical Package for the Social Sciences (SPSS) program. It was determined that accounts payable had a substantial impact on ROA at a significance level of 0.00, which is less than 0.05. With a significance level of 0.132, higher than 0.05, bank overdraft was shown to be unimportant to ROA, but debentures were determined to be significant with a significance level of 0.016, lower than 0.05. The ROA was shown to be unaffected by bank loans and interest payments, with significance values of 0.957 and 0.726, respectively, both larger than 0.05. With a significance level of 0.014, less than 0.05, tax interest was found to be relevant to ROA, but expense deductions were determined to be insignificant with a significance level of 0.480 which is greater than 0.05.

Ahmadu, Malami, Musa and Haruna (2018) examined the effect of financial leverage on the financial performance, using secondary data obtained from the annual reports of five (5) quoted conglomerates firms in Nigeria for a period of twelve (12) years, from 2005 to 2016. The study adopted ex-post factor and longitudinal research designs. Descriptive statistics comprising mean, median, minimum, maximum, standard deviation, coefficient of variation, skewness and kurtosis were used to present the data, while fixed effects model (FEM) were used in evaluating the effect of financial leverage variables: short-term debt ratio (STDR), long-term debt ratio (LTDR) and total-debt equity ratio (TDER) on the financial performance represented by the return on asset (ROA). The regression results of the FEM reveal that STDR has a positive significant effect on the financial performance measured by ROA at 1 per cent level of significance, while LTDR and TDER have negative and significant effect on the financial performance at 1 per cent level of significance. The study concludes that increase in the proportion of short-term debt in the capital structure of quoted conglomerates firms in Nigeria will enhance financial performance. The study recommended that quoted firms in the Conglomerates Sector of Nigeria should substitute all the proportion of long-term debt in the capital structure with short-term debt.

Abeywardhana and Magoro (2017) empirically studied “debt capital and financial performance: A comparative analysis of South Africa and Sri Lanka listed companies.” The study analyzed data from 2011-2015 of the “wholesale and retail sector companies in South Africa and Sri Lanka”. The fixed-effects (within) regression method was adopted in the data analysis. The result showed a negative impact of short term and long-term debts on financial performance in both sectors in South Africa but in Sri Lanka, short term debt showed a negative impact while long term debt showed a positive impact.

Harelimana (2017) conducted a comparison research between I&M Bank and Bank of Kigali over a six-year period beginning in 2010 with the goal of determining the impact of debt financing on corporate performance. The research employed a descriptive and correlative methodology. The amount of debt and profitability for both I&M Bank and Bank of Kigali were shown to be strongly positively correlated by the study. This is often less costly and may be increased with a comparatively low interest rate, which raises profit levels and, thus, performance. With an average SGR of 21% and an IGR of 1.7%, Bank of Kigali's internal financial health was remarkably steady when compared to that of its rival, I&M Bank, which had an average SGR of 10% and an IGR of 0.6%, according to sustainability metrics. Nonetheless, the fluctuation in both SGR and IGR has little effect on the debt levels. According to the report, Bank of Kigali outperformed I&M Bank in terms of financial performance.

Onchong, Muturi and Atambo (2016) investigated the impact of debt financing on financial performance of the firm over the short-term and long-term. For the purpose of this study, a population 60 firms with debt in their capital structure in Nairobi Security exchange were evaluated. Three independent variables were examined; they include short term debt ratio (STDR) and long debt term ratio (LTDR) in determining financial performance of the firms in form of return of assets (ROA), liquidity ratio and profit margin ratio as dependent. This study utilized secondary data from audited financial report of these firms between periods of 2009-2012. From the study, it emerged that the regression analysis coefficient on the debt effects on return on asset suggest that a unit increase of short-term debt reduces return on asset by. However, the finding relating to profit margin ratio suggests a different outcome. A unit increase in short term debt however will reduce the profit margin ratio by 1.054. The liquidity ratio response to a unit increase in short term debt ratio leads to a decrease of liquidity ratio by 0.838. From this study, it is evident that at 95% confidence level, the variables produce statistically significant values (high t-values,  $p < 0.1$ .) hence when the variables are combined hence, they can be relied on to explain debt financing of the firms listed at the Nairobi securities exchange. From the study findings, it would be safe to conclude that debt ratio had an inverse relationship with return on asset.

An empirical study by Yakubu, Baba, and Ibrahim (2016) looked at how Nigerian banks' profitability was affected by their capital structure, which includes both borrowed and owners' cash. Using an autoregressive distributed lag model, the study examined a sample of 13 Deposit Money Banks (DMBs) between 2005 and 2014. It discovered that 83% of the DMBs' total assets were not funded by the owners, supporting the notion that banks are heavily leveraged businesses. The results also revealed evidence of a positive and considerable effect of both owners' and borrowed money on profitability, which is consistent with the agency and static trade-off theories of capital structure as well as other empirical findings in Nigeria. On the other hand, during the research period, borrowed monies were shown to be more common in improving the performance of DMBs. In light of these conclusions, the study

suggests that DMBs learn about and comprehend the dynamics of capital structure in order to make the best possible capital mix decisions.

An empirical analysis of the effect of debt structure on the performance of Nigerian listed enterprises was presented by Nwude et al. (2016). The study employed 12-year annualized panel data covering the years 2001-2012, analyzing a cross-section of forty-three enterprises belonging to several sectoral groupings. The Nigeria Stock Exchange factbooks and the yearly reports of the sampled companies were the sources of the data. Due to unobserved heterogeneity in the dataset, the study used three regression estimations: Pooled OLS, Fixed Effects, and Random Effects. Regression estimates' results demonstrated that, throughout the reviewed period, debt structure had a negative and substantial influence on Nigerian listed enterprises' performance. The study came to the conclusion that debt structure has a negative impact on Nigerian listed enterprises' performance, which is consistent with the pecking order hypothesis.

Sohail and Ulfat (2015) made an effort to investigate the relationship between various forms of debt financing and the performance of businesses in 14 Pakistani industries. For a period of nine years, secondary data on fourteen distinct sectors of the Pakistan Stock Exchange is gathered (2006 to 2014). The study's findings showed that debt financing has a major and detrimental effect on Pakistani businesses' performance. The results of this study suggested that businesses should depend more on their internal funding sources since they are a cheap and dependable source of funding in the Pakistani setting.

Adesina, Nwidobie, and Adesina (2015) looked at the effect of ten Nigerian banks' post-consolidation capital structure on their financial performance between 2005 and 2012. The research, which used equity and debt as independent variables, profit before tax as a dependent variable, and Ordinary Least Squares as a regression approach, demonstrates that capital structure and the profitability of Nigerian listed banks are significantly positively correlated. The research recommended, among other things, supporting Nigerian banks with a combination of debt and equity capital to boost profits.

Ojonugwa (2015) investigated how debt financing affected Nigerian privatized companies' performance. The research makes use of panel data that was collected between 2002 and 2009 from the Securities and Exchange Commission and the Nigerian Stock Exchange. According to our Ordinary Least Square (OLS) results, corporate financing through debt tends to improve post-privatization performance of enterprises up to a certain point; beyond that, every increase in the percentage of debt in a firm's capital (assets) leads in a decrease in performance. The optimal debt financing to capital (assets) of privatized enterprises is determined by the results to be 34.3%, 32.4%, and 38.3%. As a result, the report made many recommendations, one of which was that businesses in Nigeria maintain an ideal debt-to-capital ratio.

In Akeem et al.'s (2014) analysis of the capital structure's effect on the performance of ten randomly chosen businesses listed on the Nigerian Stock Exchange, secondary data from 2003 to 2012 was analyzed using Generalized Least Squares Regression. The study found that capital structure had a negative impact on business performance as measured by return on investment and return on asset. It achieved this by utilizing company age as a control variable and the capital structure variables total debt to equity, total debt to asset, and long-term debt to capital. The report suggested that businesses should finance their operations primarily via stock rather than debt.

Idode et al. (2014) used an ex post-factor study approach and multiple regression analysis to look at how capital structure affected Nigerian banks' profitability between 2008 and 2012. The research uses the ratios of total debt to total assets and total equity to total assets as independent variables and return on assets (ROA), which is calculated as earnings before taxes (EBT) divided by total assets as a measure of bank performance. The results demonstrate that capital structure significantly boosts Nigerian banks' profitability. Based on these results, the research suggested—backed by the agency and pecking order theories—that directors and management finance their firm operations using a combination of loan and equity.

From 2000 to 2010, Awunyo and Badu (2012) conducted an empirical investigation of the correlation between seven listed Ghanaian banks' capital structure and performance. The authors used the debt-to-equity ratio as an independent variable, firm size, firm age, current liabilities, and board size as control variables, and return on assets, return on equity, and Tobin's Q as proxies for bank performance. The study, which using panel regression methods, found a strong negative relationship between the selected banks' high leverage and both Tobin's Q and return on equity. Additionally, the study demonstrated that capital structure had a little detrimental effect on return on assets. The findings were ascribed by the authors to the banks' excessive reliance on short-term loans, which results in high bank lending rates and limited bond market activity. The study makes several recommendations, including that Ghanaian listed banks should rely more on internally generated funds to finance their operations and that they should look for low interest-bearing loans when using debt so that the tax shield benefit of the loan will outweigh any associated financial distress.

Olokoyo (2012) examined the overall effects of capital structure (leverage) on the performance of 101 companies listed on the Nigerian Stock Market between 2003 and 2007 in terms of return on equity, return on assets, and Tobin's Q. A firm's leverage has a significant negative impact on its accounting performance measure (ROA), according to the study, which uses panel data analysis

with Fixed-effect estimation, Random-effect estimation, and Pooled Regression Model. All of the leverage measures also have a positive and highly significant relationship with the market performance measure (Tobin's Q). According to the report, Nigerian businesses are either primarily funded by equity capital or by a combination of short-term loan and equity capital. The study also demonstrates that a firm's size has a major beneficial impact on its performance and that the maturity structure of debts has a considerable impact on companies' success.

### **EVALUATION/SUMMARY OF LITERATURE REVIEWED**

This chapter has critically reviewed related literatures on the effects of capital structure on market valuation of quoted agricultural firms in Nigeria. The chapter has reviewed various, theories, concepts and empirical studies. Having reviewed different literature in this chapter, there is obviously a gap and the researcher is optimistic that this present study fits in to fill such gap. To start with, conflicting results emanated from the empirical studies reviewed; while some of the studies found a negative relation running from capital structure to performance, others found positive relation running from capital structure to performance. To the best of researcher's knowledge also, most of these empirical works are of foreign origin whose findings may not be compatible with the Nigerian situation considering environmental differences. Also, none of the studies are available on the effect of capital structure on market valuation among agricultural firms in Nigeria. In addition, most of these studies are not current or up-to-date as they failed to make use of most recent data. In order words, none of the related studies made use of 2022 data. In a bid to fill this gap, this study intends to empirically analyze "the effects of capital structure on market valuation of quoted agricultural firms in Nigeria". The study will make use of panel data that cover up 2022. This will make this study to be more current or up-to-date than previous related studies carried out.

### **RESEARCH DESIGN**

The research design adopted in this study is ex post facto research design. Ex post facto study, often known as after-the-fact research, is a type of research design in which the inquiry begins independently of the researcher after the fact has happened. Ex post facto research design is the basis of most social research conducted in situations when it is not feasible nor appropriate to modify the features of human participants (events). Ex post facto research design is also applied as a substitute for true experimental research to test hypotheses about cause-and-effect relationships or in situations in which it is not practical or ethically acceptable to apply the full protocol of a true experimental design. Thus, the research design is perfect for this research because the time scope being considered in this study shows that the events had already taken place and as such, the researcher is only trying to analyse it.

#### **Population of the Study**

The population of study consisted of all the five (5) agricultural firms quoted on the Nigerian Stock Exchange, (NSE) as at first quarter of 2022.

#### **Sampling Technique and Sample Size**

Since the study makes use of secondary data and these data are readily available, the study therefore makes use of judgmental sampling technique to sample all the five (5) agricultural firms that are quoted on the Nigerian Exchange Group (NGX). The decision is based on the fact that they fully satisfied the listing requirement of Nigerian Exchange Group (NGX) and all have available data required for the study.

#### **Data Collection Method**

This study employed secondary type of data which were sourced or retrieved from Nigerian Exchange Group (NGX) fact book. Specifically, panel data were used and these data were sourced from the corporate annual financial report/statement of the agricultural firms in Nigeria quoted on the Nigerian Exchange Group (NGX). This source of data was considered reliable and dependable. The data covered a period of nine years ranging from 2014 to 2022.

#### **Model Specification**

This section developed and specified the model adopted in this study to empirically determine the effects of capital structure on market valuation of quoted agricultural firms in Nigeria. However, since this study is interested in establishing relationships between variables and possible projections, multiple regression model is therefore adopted. The model of this study is built on the work of Sebastain and Onuegbu (2018) in their analysis of the impact of capital structure on corporate performance in Nigeria with special focus on consumer goods firm sector of the economy. However, the model for the study is modified not only to incorporate the all the variables adopted but also to remove variables that are not included in this study. Thus, the model is expressed in its functional, mathematical and econometric forms respectively:

#### **Functional Model**

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The functional form of the model is specified as follows:

$$MCAP = f(DAR, DER, LTDR, STDR) \tag{3.1}$$

**Mathematical Model:**

Equation (3.1) is transformed into a mathematical model as follows:

$$MCAP_t = \beta_0 + \beta_1DAR_t + \beta_2DER_t + \beta_3LTDR_t + \beta_4STDR_t \tag{3.2}$$

**Pooled Regression Model Specification**

Equation (3.2) is transformed into a pool regression model as follows:

$$MCAP_{it} = \beta_0 + \beta_1DAR_{it} + \beta_2DER_{it} + \beta_3LTDR_{it} + \beta_4STDR_{it} + \mu_t \tag{3.3}$$

**Fixed Effect Model Specification**

Equation (3.3) is transformed into a fixed effect model as follows:

$$MCAP_{it} = \beta_0 + \beta_1DAR_{it} + \beta_2DER_{it} + \beta_3LTDR_{it} + \beta_4STDR_{it} + \sum_i^9 = 1\alpha_i idum\epsilon_{1it} \tag{3.4}$$

**Random Effect Model Specification**

Equation (3.4) is transformed into a random effect model as follows:

$$MCAP_{it} = \beta_0 + \beta_1DAR_{it} + \beta_2DER_{it} + \beta_3LTDR_{it} + \beta_4STDR_{it} + \mu_i + \epsilon_{1it} \tag{3.5}$$

Where:

MCAP = market capitalization

DAR = debt-to-asset ratio

DER = debt-to-equity ratio

LTDR = long-term debt ratio

STDR = short-term debt ratio

$\beta_0$  = regression intercept

$\beta_1$  = parameter of debt-to-asset ratio

$\beta_2$  = parameter of debt-to-equity ratio

$\beta_3$  = parameter of long-term debt ratio

$\beta_4$  = parameter of short-term debt ratio

$t$  = time subscript

$\mu_t$  = disturbance or error term

**A Priori Expectation**

The *a priori expectation* will evaluate the parameter in terms of its meeting the standard economic theory expectation. Economic theory explains the nature of the variables being used and their relationship with one another. The evaluation therefore is based on whether the parameter conforms to economic postulations or not. The *a priori expectation* for this study is summarized in table 3.1 below:

**Table 3.1: A Priori Expectation**

Parameters	A Priori Signs
$\beta_0$	Positive/Negative
$\beta_1$	Positive
$\beta_2$	Positive
$\beta_3$	Positive
$\beta_4$	Positive

*Source: Researcher's Computation, 2023.*

From table 3.1 above, the expected relationships are stated as follows:

- i.  $\beta_1 > 0$ : This means that debt-to-assets ratio is expected to contribute positively to market valuation of quoted agricultural firms in Nigeria.
- ii.  $\beta_2 > 0$ : This means that debt-to-equity ratio is expected to contribute positively to market valuation of quoted agricultural firms in Nigeria.
- iii.  $\beta_3 > 0$ : This means that long-term debt ratio is expected to contribute positively to market valuation of quoted agricultural firms in Nigeria.
- iv.  $\beta_4 > 0$ : This means that short-term debt ratio is expected to contribute positively to market valuation of quoted agricultural firms in Nigeria.

**Operational Measures of Research Variables**



This section focuses on the process of developing and measuring variables of interest both individually and in relation to other variables that will yield data to answer the research question(s). The variables to be investigated in this study are the independent variable and the dependent variable. This is summarized in the table below:

### Dependent (Explained) Variable

For the purpose of this study, the explained (dependent) variable is the market valuation quoted agricultural firms in Nigeria as measured by market capitalization:

- **Market Capitalization:** Market capitalization, commonly called market cap, is the market value of a publicly traded company's outstanding shares.

### Independent (Explanatory) Variables

For the purpose of this study, the independent (explanatory) variable is capital structure and it is proxied by debt-to-assets ratio, debt-to-equity ratio, long-term debt ratio and short-term debt ratio:

- **Debt-to-Asset Ratio (DAR):** The total debt ratio is a measurement representing the percentage of a corporation's assets financed with loans or other financial obligations lasting more than one year. The formula for calculating debt-to-asset ratio is:

$$\text{Debt-to-Asset Ratio (DAR)} = \frac{\text{total debt}}{\text{total assets}}$$

- **Debt-To-Equity Ratio (DER):** This is the quantitative measure of the proportion of the total debt to residual owners' equity. Thus, it is an indicator of a company's capital structure on whether the company is more reliant on borrowing (debt) or using shareholders' capital (equity) to fund assets and operations. The formula for calculating debt-to-equity ratio is:

$$\text{Debt-to-Equity Ratio (DER)} = \frac{\text{total debt}}{\text{equity}}$$

- **Long-Term Debt Ratio:** Long-term debt ratio is the amount of a firm's long debt financing to the amount of firm total asset. Long-term debts show the percentage of assets financed with debt which is payable after more than one year. It includes bonds and long-term loans. Mathematically, long-term debt ratio is given as:

$$\text{Long-Term Debt Ratio (LTDR)} = \frac{\text{long term debt}}{\text{total assets}}$$

- **Short-Term Debt Ratio:** Short-term debt ratio is the amount of a firm's short debt financing to the amount of firm's total asset. Short-term debt is an account shown in the current liabilities portion of a firm's statement of financial position and it comprises of any debt incurred by a firm that is due within a year period. Mathematically, debt to equity ratio is given as:

$$\text{Short-Term Debt Ratio (STDR)} = \frac{\text{short tem debt}}{\text{total debt}}$$

## DATA ANALYSIS TECHNIQUE

### Hausman Test

This is the most commonly used method for evaluating fixed and random effects. It shows whether sectional unit differences are fixed or random. It has an asymptotic chi-square distribution with degrees of freedom equal to the number of independent variables. If the variables are significantly correlated, then the fixed effects estimation is consistent and efficient, and should be adopted. On the other hand, if the variables are not significantly correlated, then the random effects estimation is consistent and efficient, and should be adopted (Gujurati, Porter & Gunasakar, 2013).

### Panel Least Squares

The panel data sourced for the purpose of this study were analyzed and interpreted using regression analysis. However, the Panel Least Squares method was used to estimate the parameters of the regression model. The adoption of this technique would be based on the premise that the Panel Least Square is assumed to be the Best Linear Unbiased Estimator. It also has minimum variance. To achieve this, the data extracted from corporate annual financial report/statement of the Nigeria Stock Exchange for the period 2014-2022 were arranged in excel spreadsheet and exported to Econometric Views (E-Views) 12 statistical package for proper analysis. Also, the study adopted descriptive statistical technique and Jarque-Bera statistics to show the normal distribution of the regression variables. In addition, serial correlation tests would be carried out using the Breusch-Godfrey approach while the test of heteroskedasticity would be carried out using the Breusch-Pagan-Godfrey test of Heteroskedasticity. Furthermore, the model would be evaluated using the following tests:

**Regression coefficient:** This measures the extent to which the independent variables affect the dependent variable in the study.

**The R-squared (R<sup>2</sup>):** The R-squared measures the goodness of fit. It shows the percentage of the total variation in the dependent variable that is explained by the independent variable. The value of R-squared is between 0 and 1. The higher the R-squared the better the goodness of fit of the regression plane to the sample observations, and the closer the R-squared to zero, the worse the fit.

**The Adjusted R-squared (R<sup>2</sup>):** This is also coefficient of multiple determinations. It measures the percentage of the total variation of the dependent variable explained by changes in the independent variables.

**The t-test:** This was used to test the validity of the parameter estimate. It is used to decide whether the independent variables are individually significant or not. To achieve this, 5% level of significance with (n-k) degrees of freedom was used. Where n is the number of observation and k is the number of parameters.

**Decision Rule:** Reject the null hypothesis ( $H_0$ ) at 5% level of significance if the t-calculated value is greater than the t-tabulated value, On the other hand, accept the null hypothesis ( $H_0$ ) at 5% level of significance if the t-calculated value is less than the t-tabulated value.

**The F-test:** The F-test was used to ascertain whether the estimated model is significant or not. It will also be used to determine whether independent variables are jointly significant or not. To achieve this, 5% level of significance with (n-k) and (k-1) degrees of freedom would be used. Where n is the number of observation and k is the number of parameters.

**Decision Rule:** Reject the null hypothesis ( $H_0$ ) at 5% level of significance if the F-calculated value is greater than the F-tabulated value, On the other hand, accept the null hypothesis ( $H_0$ ) at 5% level of significance if the F-calculated value is less than the F-tabulated value.

### DATA PRESENTATION

The section presents the result of descriptive analysis as follow:

**Table 4.2: Presentation of Descriptive Analysis Result**

	MCAP	DAR	DER	LTDR	STDR
Mean	88.68911	0.665111	1.364444	0.128000	0.826000
Median	72.90000	0.690000	1.410000	0.130000	0.820000
Maximum	201.6000	0.810000	2.690000	0.220000	0.990000
Minimum	1.010000	0.400000	0.120000	0.000000	0.620000
Std. Dev.	48.58750	0.092457	0.703344	0.040091	0.097407
Skewness	1.153220	-1.098977	0.274465	-0.513037	-0.403702
Kurtosis	3.443993	3.675660	2.309543	4.470070	2.394050
Jarque-Bera	10.34399	9.914100	1.458855	6.026125	1.910771
Probability	0.005673	0.007034	0.482185	0.049141	0.384664
Sum	3991.010	29.93000	61.40000	5.760000	37.17000
Sum Sq. Dev.	103872.8	0.376124	21.76651	0.070720	0.417480
<b>Observations</b>	45	45	45	45	45

**Source:** *Researcher's Computation, 2023.*

The descriptive statistics of market capitalization (MCAP), debt-to-asset ratio (DAR), debt-to-equity ratio (DER), long-term debt ratio (LTDR) and short-term debt ratio (STDR) are shown in the Table 4.1 above. As revealed by the table, market capitalization (MCAP) has a mean of 88.68 while the minimum market capitalization (MCAP) in the observations is 1.01 and the maximum market capitalization (MCAP) is 201.6. The standard deviation of 48.59 shows the level at which the market capitalization (MCAP) deviates from the mean. Market capitalization (MCAP) is positively skewed at 1.153 with a probability value of 0.005, indicating that market capitalization is not normally distributed.

Also, debt-to-asset ratio (DAR) has a mean of 0.67% while the minimum debt-to-asset ratio (DAR) in the observations is 0.4% and the maximum debt-to-asset ratio (DAR) is 0.81%. The standard deviation of 0.09% shows the level at which the debt-to-asset ratio (DAR) deviates from the mean. debt-to-asset ratio (DAR) is negatively skewed at -1.09% with a probability value of 0.007, indicating that debt-to-asset ratio is not normally distributed.

Furthermore, debt-to-equity ratio (DER) has a mean of 1.36%. It can be observed from table 4.1 that the minimum debt-to-equity ratio (DER) in the observations is 0.12% and the maximum debt-to-equity ratio (DER) is 2.69%. The standard deviation of 0.70 shows the level at which the debt-to-equity ratio (DER) deviates from the mean. Debt-to-equity ratio (DER) is positively skewed at 0.27% with a probability value of 0.482%, indicating that debt-to-equity ratio is normally distributed.

Additionally, long-term debt ratio (LTDR) has a mean of 0.128%. It can be observed from table 4.2 that the minimum long-term debt ratio (LTDR) in the observations is 0.01% and the maximum long-term debt ratio (LTDR) is 0.22%. The standard deviation of 0.04% shows the level at which the long-term debt ratio deviates from the mean. Long-term debt ratio (LTDR) is negatively skewed at -0.51% with a probability value of 0.049, indicating that long-term debt ratio is not normally distributed.

Lastly, short-term debt ratio (STDR) has a mean of 0.826%. It can be observed from table 4.1 that the minimum short-term debt ratio (STDR) in the observations is 0.62% and the maximum short-term debt ratio (STDR) is 0.99%. The standard deviation of 0.097 shows the level at which the short-term debt ratio (STDR) deviates from the mean. Short-term debt ratio (STDR) is negatively skewed at -0.403% with a probability value of 0.384, indicating that long-term debt ratio is normally distributed.

**PRE-ESTIMATION TEST**

**Unit Root Test**

Most time series data tend to contain infinite variances that are not mean-reverting and lie on the unit circle. It is, however, observed that results estimated from such series are usually resulting in spurious regression that makes little or no economic sense. Thus, the Im, Pesaran & Shin and Levin, Lin & Chu panel unit roots test were employed in this study to test for the time series properties of model variables. The null hypothesis states that the variable under investigation has a common unit root process against the alternative which states that variable under investigation does not have a common unit root process. The decision rule is to reject the null hypothesis if the probability value Levin, Lin and Chu t-statistics is less than or equal to 0.05 level of significance. The results of the Thus, the Im, Pesaran & Shin and Levin, Lin & Chu panel unit roots test are presented in table 4.2 below:

**Table 4.2: Summary of Im, Pesaran & Shin Test and Levin, Lin & Chu Test Panel Unit Roots Test Results**

Variables	IM, PESARAN AND SHIN W-STAT			LEVIN, LIN & CHU (LLC)TEST		
	Statistic	Prob.**	Order of Integration	Statistic	Prob.**	Order of Integration
$MCAP_t$	-2.26145	0.0119	I(0)	-5.90157	0.0000	I(0)
$DAR_t$	-3.58663	0.0002	I(0)	-5.48520	0.0000	I(0)
$DER_t$	-2.61774	0.0044	I(0)	-4.34090	0.0000	I(0)
$LTDR_t$	-2.18538	0.0144	I(0)	-2.38425	0.0086	I(0)
$STDR_t$	-2.21675	0.0133	I(0)	-4.49355	0.0000	I(0)

Source: *Researcher's Computation, 2023.*

The results of panel unit root in Table 4.2 above show that all variables were stationary at level forms since the probability values of LLC are less than 0.05; thereby indicating that all variables were integrated of order zero, that is [I(0)]. In other words, after comparing the probability value of Levin, Lin and Chu t-statistics against the alpha value at 0.05 level of significance, it was ascertained that market capitalization (MCAP), debt-to-asset ratio (DAR), debt-to-equity ratio (DER), long-term debt ratio (LTDR) and short-term debt ratio (STDR) were integrated at order I(0) and were as a result stationary at levels. However, since the variables were integrated of the same order I(0), we cannot test for cointegration but estimate the panel regression based on the order of integration of the model variables.

**POOLED MODEL ANALYSIS**

**Table 4.3: Presentation of Pooled Model Analysis Results**

Variable	Dependent Variable: $MCAP_t$			
	Coefficient	Std. Error	t-Statistic	Prob.
C	5.481975	0.213605	25.66413	0.0000
$DAR_t$	-0.000600	0.013965	-0.042974	0.9658
$DER_t$	0.066015	0.105622	0.625012	0.5333
$LTDR_t$	0.235085	0.459751	0.511332	0.6102
$STDR_t$	0.138473	0.811270	0.170686	0.8648

R-squared = 0.249854; Adjusted R-squared = 0.213310; F-statistic = 1.364229; Prob(F-statistic) = 0.251464; Durbin-Watson stat = 1.233618

Source: *Researcher's Computation, 2023.*

**Interpretation of the Coefficients and Its P-values:** The result of the pooled regression model analysis in Table 4.3 shows that market capitalization (MCAP) is negatively affected by debt-to-asset ratio (DAR). This means that market capitalization (MCAP) will decrease by 0.000600 given a unit increase in debt-to-asset ratio (DAR) while market capitalization (MCAP) will increase by 0.000600 given a unit decrease in debt-to-asset ratio (DAR). However, debt-to-asset ratio (DAR) is not statistically significant given that its p-value of 0.9658 is greater than 0.05 at 5% level of significance. Therefore, it can be inferred that debt-to-asset ratio (DAR) has a negative and insignificant effect on market capitalization (MCAP).

Also, the result of the pooled regression model analysis in Table 4.3 shows that market capitalization (MCAP) is positively influenced by debt-to-equity ratio (DER). This means that market capitalization (MCAP) will increase by 0.066015 given a unit increase in debt-to-equity ratio (DER) while market capitalization (MCAP) will decrease by 0.066015 given a unit decrease in debt-to-equity ratio (DER). However, debt-to-equity ratio (DER) is not statistically significant given that its p-value of 0.5333 is greater

than 0.05 at 5% level of significance. Therefore, it can be inferred that debt-to-equity ratio (DER) has a positive and non-significant effect on market capitalization (MCAP).

In addition, the result of the pooled regression model analysis in Table 4.3 shows that market capitalization (MCAP) is positively influenced by long-term debt ratio (LTDR). This means that market capitalization (MCAP) will increase by 0.235085 given a unit increase in long-term debt ratio (LTDR) while market capitalization (MCAP) will decrease by 0.235085 given a unit decrease in long-term debt ratio (LTDR). However, long-term debt ratio (LTDR) is not statistically significant given that its p-value of 0.6102 is greater than 0.05 at 5% level of significance. Therefore, it can be inferred that long-term debt ratio (LTDR) has a positive and insignificant effect on market capitalization (MCAP).

Also, the result of the pooled regression model analysis in Table 4.3 shows that short-term debt ratio (STDR) has a positive effect on market capitalization (MCAP). This means that market capitalization (MCAP) will increase by 0.138473 given a unit increase in short-term debt ratio (STDR) while market capitalization (MCAP) will decrease by 0.138473 given a unit decrease in short-term debt ratio (STDR). However, short-term debt ratio (STDR) is not statistically significant given that its p-value of 0.8648 is greater than 0.05 at 5% level of significance. Therefore, it can be inferred that short-term debt ratio (STDR) has a positive and insignificant effect on market capitalization (MCAP).

**Interpretation of Adjusted R-Squared:** From the empirical result of the pooled regression model analysis presented in Table 4.3, the adjusted R-squared obtained is 0.213310. This shows that if the coefficient of determination is adjusted, approximately twenty-one percent (21%) of the changes in market capitalization are attributable to changes in debt-to-asset ratio, debt-to-equity ratio, long-term debt ratio and short-term debt ratio while the remaining seventy-nine percent (79%) of the variation in the model is equally captured by the error term (unknown factors outside the model).

**Significance of Overall Parameter (Estimated Model):** Prob (F-statistic value) is used to test the overall significance of the pooled model at 5% level of significance and joint significant effects of the independent variables on the dependent variable. To determine this, we compare the prob (F-statistic value) with the alpha value of 0.05. From the pooled regression model result, prob (F-statistic value) is 0.251464 while the alpha value is 0.05. However, since the prob (F-statistic) value is greater than the alpha value, we therefore conclude that the pooled model estimated is not statistically significant. This also means that debt-to-asset ratio, debt-to-equity ratio, long-term debt ratio and short-term debt ratio have no joint significant effects on market capitalization.

#### FIXED EFFECT MODEL ANALYSIS

**Table 4.4: Results of Fixed Effect Model Analysis**

Variable	Dependent Variable: $MCAP_t$			
	Coefficient	Std. Error	t-Statistic	Prob.
C	200.6999	18.65994	10.75565	0.0000
$DAR_t$	-0.089301	0.026937	-3.315134	0.0013
$DER_t$	0.025756	0.145033	0.177588	0.8594
$LTDR_t$	0.337485	0.433265	0.778935	0.4380
$STDR_t$	0.256905	0.103061	2.492759	0.0144
<b>Effects Specification</b>				
<b>Cross-Section Fixed (Dummy Variables)</b>				
R-squared = 0.558986; Adjusted R-squared = 0.498637; F-statistic = 9.262528;				
Prob(F-statistic) = 0.000000; Durbin-Watson stat = 1.464328				

**Source:** *Researcher's Computation, 2023.*

**Interpretation of the Coefficients and Its P-values:** The result of the fixed effect regression model analysis in Table 4.4 shows that market capitalization (MCAP) is negatively affected by debt-to-asset ratio (DAR). This means that market capitalization (MCAP) will decrease by 0.089301 given a unit increase in debt-to-asset ratio (DAR) while market capitalization (MCAP) will increase by 0.089301 given a unit decrease in debt-to-asset ratio (DAR). However, debt-to-asset ratio (DAR) is statistically significant given that its p-value of 0.0013 is less than 0.05 at 5% level of significance. Therefore, it can be inferred that debt-to-asset ratio (DAR) has a negative and significant effect on market capitalization (MCAP).

Also, the result of the fixed effect regression model analysis in Table 4.4 shows that market capitalization (MCAP) is positively influenced by debt-to-equity ratio (DER). This means that market capitalization (MCAP) will increase by 0.025756 given a unit increase in debt-to-equity ratio (DER) while market capitalization (MCAP) will decrease by 0.025756 given a unit decrease in debt-



to-equity ratio (DER). However, debt-to-equity ratio (DER) is not statistically significant given that its p-value of 0.8594 is greater than 0.05 at 5% level of significance. Therefore, it can be inferred that debt-to-equity ratio (DER) has a positive and insignificant effect on market capitalization (MCAP).

In addition, the result of the fixed effect regression model analysis in Table 4.4 shows that market capitalization (MCAP) is positively influenced by long-term debt ratio (LTDR). This means that market capitalization (MCAP) will increase by 0.337485 given a unit increase in long-term debt ratio (LTDR) while market capitalization (MCAP) will decrease by 0.337485 given a unit decrease in long-term debt ratio (LTDR). However, long-term debt ratio (LTDR) is not statistically significant given that its p-value of 0.4380 is greater than 0.05 at 5% level of significance. Therefore, it can be inferred that long-term debt ratio (LTDR) has a positive and insignificant effect on market capitalization (MCAP).

Also, the result of the fixed effect regression model analysis in Table 4.4 shows that short-term debt ratio (STDR) has a positive effect on market capitalization (MCAP). This means that market capitalization (MCAP) will increase by 0.256905 given a unit increase in short-term debt ratio (STDR) while market capitalization (MCAP) will decrease by 0.256905 given a unit decrease in short-term debt ratio (STDR). However, short-term debt ratio (STDR) is statistically significant given that its p-value of 0.000 is less than 0.05 at 5% level of significance. Therefore, it can be inferred that short-term debt ratio (STDR) has a positive and significant effect on market capitalization (MCAP).

**Interpretation of Adjusted R-Squared:** From the empirical result of the fixed effect regression model analysis presented in Table 4.4, the adjusted R-squared obtained is 0.498637. This shows that if the coefficient of determination is adjusted, approximately forty-nine percent (49%) of the changes in market capitalization are attributable to changes in debt-to-asset ratio, debt-to-equity ratio, long-term debt ratio and short-term debt ratio while the remaining fifty-one percent (51%) of the variation in the model is equally captured by the error term (unknown factors outside the model).

**Significance of Overall Parameter (Estimated Model):** Prob (F-statistic value) is used to test the overall significance of the fixed effect model at 5% level of significance and joint significant effects of the independent variables on the dependent variable. To determine this, we compare the prob (F-statistic value) with the alpha value of 0.05. From the fixed effect regression model result, prob (F-statistic value) is 0.000000 while the alpha value is 0.05. However, since the prob(F-statistic) value is less than the alpha value, we therefore conclude that the fixed effect model estimated is statistically significant. This also means that debt-to-asset ratio, debt-to-equity ratio, long-term debt ratio and short-term debt ratio have joint significant effects on market capitalization.

### RANDOM EFFECT MODEL ANALYSIS

Table 4.5: Presentation of Random Effect Model Analysis Results

Variable	Dependent Variable: $MCAP_t$			
	Coefficient	Std. Error	t-Statistic	Prob.
C	202.6161	31.95640	6.340392	0.0000
$DAR_t$	1.232517	0.521117	2.365144	0.0199
$DER_t$	0.872297	0.415512	2.099329	0.0388
$LTDR_t$	0.059606	0.023004	2.591109	0.0109
$STDR_t$	0.219925	0.095206	2.309991	0.0231
<b>Effects Specification</b>				
Period random			83.14258	0.6485
Idiosyncratic random			76.67622	61.20645
<b>Weighted Statistics</b>				
R-squared = 0.844906; Adjusted R-squared = 0.802939; F-statistic = 20.13275;				
Prob(F-statistic) = 0.000000; Durbin-Watson stat = 2.139053				

Source: *Researcher's Computation, 2023.*

**Interpretation of the Coefficients and Its P-values:** The result of the random effect regression model analysis in Table 4.5 shows that market capitalization (MCAP) is negatively affected by debt-to-asset ratio (DAR). This means that market capitalization (MCAP) will decrease by 1.232517 given a unit increase in debt-to-asset ratio (DAR) while market capitalization (MCAP) will increase by 1.232517 given a unit decrease in debt-to-asset ratio (DAR). However, debt-to-asset ratio (DAR) is statistically

significant given that its p-value of 0.0199 is less than 0.05 at 5% level of significance. Therefore, it can be inferred that debt-to-asset ratio (DAR) has a negative and significant effect on market capitalization (MCAP).

Also, the result of the random effect regression model analysis in Table 4.5 shows that market capitalization (MCAP) is positively influenced by debt-to-equity ratio (DER). This means that Market capitalization (MCAP) will increase by 0.872297 given a unit increase in debt-to-equity ratio (DER) while Market capitalization (MCAP) will decrease by 0.872297 given a unit decrease in debt-to-equity ratio (DER). However, debt-to-equity ratio (DER) is statistically significant given that its p-value of 0.0388 is less than 0.05 at 5% level of significance. Therefore, it can be inferred that debt-to-equity ratio (DER) has a positive and significant effect on market capitalization (MCAP).

In addition, the result of the random effect regression model analysis in Table 4.5 shows that market capitalization (MCAP) is positively influenced by long-term debt ratio (LTDR). This means that market capitalization (MCAP) will increase by 0.059606 given a unit increase in long-term debt ratio (LTDR) while market capitalization (MCAP) will decrease by 0.059606 given a unit decrease in long-term debt ratio (LTDR). However, long-term debt ratio (LTDR) is statistically significant given that its p-value of 0.0109 is less than 0.05 at 5% level of significance. Therefore, it can be inferred that long-term debt ratio (LTDR) has a positive and significant effect on market capitalization (MCAP).

Also, the result of the random effect regression model analysis in Table 4.5 shows that short-term debt ratio (STDR) has a positive effect on market capitalization (MCAP). This means that market capitalization (MCAP) will increase by 0.219925 given a unit increase in short-term debt ratio (STDR) while market capitalization (MCAP) will decrease by 0.219925 given a unit decrease in short-term debt ratio (STDR). However, short-term debt ratio (STDR) is statistically significant given that its p-value of 0.0231 is less than 0.05 at 5% level of significance. Therefore, it can be inferred that short-term debt ratio (STDR) has a positive and significant effect on market capitalization (MCAP).

**Interpretation of Adjusted R-Squared:** From the empirical result of the random effect regression model analysis presented in Table 4.5, the adjusted R-squared obtained is 0.844906. This shows that if the coefficient of determination is adjusted, approximately eighty-four percent (84%) of the changes in market capitalization are attributable to changes in debt-to-asset ratio, debt-to-equity ratio, long-term debt ratio and short-term debt ratio while the remaining sixteen percent (16%) of the variation in the model is equally captured by the error term (unknown factors outside the model).

**Significance of Overall Parameter (Estimated Model):** Prob (F-statistic value) is used to test the overall significance of the random effect model at 5% level of significance and joint significant effects of the independent variables on the dependent variable. To determine this, we compare the prob (F-statistic value) with the alpha value of 0.05. From the random effect regression model result, prob (F-statistic value) is 0.000000 while the alpha value is 0.05. However, since the prob(F-statistic) value is less than the alpha value, we therefore conclude that the random effect model estimated is statistically significant. This also means that debt-to-asset ratio, debt-to-equity ratio, long-term debt ratio and short-term debt ratio have joint significant effects on market capitalization.

**Hausman Test**

The Hausman specification test (1978) was conducted to determine whether either fixed or random effect model is suitable for the study. Fixed effect model is applied to dominate for omitted variables that are constant over time but vary between observations while the Random effect model is used when some omitted variables is constant between observations but vary over time. The hypothesis for Hausman test is stated below:

**H<sub>0</sub>:** Random effect model is appropriate

**H<sub>1</sub>:** Fixed effect model is appropriate

**Table 4.6: Results of Hausman’s Test**

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Period random	1.492842	4	0.8279

Source: *Researcher’s Computation, 2023.*

The result of the Hausman test is shown in Table 4.6. From the Table, the chi-square statistic value (1.492842) with a probability value of 0.8279 suggests that the random effect model is appropriate and should be preferred over fixed effect model. Specifically, since the p-value of 0.8279 is greater than 0.05, we therefore retain the null hypothesis and conclude that random effect model is appropriate for this study.

**HYPOTHESES TESTING**

The four null hypotheses formulated and stated earlier in this study are tested in this section using the p-value:

**The Decision Rule:**

Reject the null hypothesis ( $H_0$ ) at 5% level of significant if the p-value is less than 0.05. On the other hand, accept the null hypothesis ( $H_0$ ) at 5% level of significant if the p-value value is greater than 0.05.

**Restatement of Hypothesis One:**

**H<sub>01</sub>:** There is no significant relationship between debt-to-assets ratio (DAR) and market valuation of quoted agricultural firms in Nigeria.

**H<sub>A1</sub>:** There is a significant relationship between debt-to-assets ratio (DAR) and market valuation of quoted agricultural firms in Nigeria.

**Interpretation One:** The first hypothesis was tested at 5% level of significance. The findings revealed that the P-value (0.0199) for debt-to-assets ratio is less than 0.05. Hence, the null hypothesis one is rejected while the alternative hypothesis one is accepted. The conclusion is that there is a significant relationship between debt-to-assets ratio (DAR) and market valuation of quoted agricultural firms in Nigeria.

**Restatement of Hypothesis Two:**

**H<sub>02</sub>:** There is no significant relationship between debt-to-equity ratio (DER) and market valuation of quoted agricultural firms in Nigeria.

**H<sub>A2</sub>:** There is a significant relationship between debt-to-equity ratio (DER) and market valuation of quoted agricultural firms in Nigeria.

**Interpretation Two:** The second hypothesis was tested at 5% level of significance. The findings revealed that the P-value (0.0388) for debt-to-equity ratio is less than 0.05. Hence, the null hypothesis two is rejected while the alternative hypothesis two is accepted. The conclusion is that there is a significant relationship between debt-to-equity ratio (DER) and market valuation of quoted agricultural firms in Nigeria.

**Restatement of Hypothesis Three:**

**H<sub>03</sub>:** There is no significant relationship between long-term debt ratio (LTDR) and market valuation of quoted agricultural firms in Nigeria. debt-to-equity ratio.

**H<sub>A3</sub>:** There is significant relationship between long-term debt ratio (LTDR) and market valuation of quoted agricultural firms in Nigeria. debt-to-equity ratio.

**Interpretation Three:** The third hypothesis was tested at 5% level of significance. The findings revealed that the P-value (0.0109) for long-term debt ratio is less than 0.05. Hence, the null hypothesis three is rejected while the alternative hypothesis three is accepted. The conclusion is that there is a significant relationship between long-term debt ratio (LTDR) and market valuation of quoted agricultural firms in Nigeria. debt-to-equity ratio.

**Restatement of Hypothesis Four:**

**H<sub>04</sub>:** There is no significant relationship between short-term debt ratio (STDR) and market valuation of quoted agricultural firms in Nigeria.

**H<sub>A4</sub>:** There is significant relationship between short-term debt ratio (STDR) and market valuation of quoted agricultural firms in Nigeria.

**Interpretation Four:** The third hypothesis was tested at 5% level of significance. The findings revealed that the P-value (0.0231) for short-term debt ratio is less than 0.05. Hence, the null hypothesis four is rejected while the alternative hypothesis four is accepted. The conclusion is that there is a significant relationship between short-term debt ratio (STDR) and market valuation of quoted agricultural firms in Nigeria.

## DISCUSSION OF FINDINGS

The study has empirically determined the effects of capital structure on market valuation of quoted agricultural firms in Nigeria. The study made use panel data which were sourced from Nigerian Exchange Group (NGX). In this chapter however, the data sourced were analyzed using Panel Least Square (PLS) technique of regression analysis.

The study found that debt-to-assets ratio has a positive relationship with market valuation of quoted agricultural firms in Nigeria. This was confirmed by a positive coefficient of debt-to-assets ratio. Also, from the first hypothesis tested, debt-to-assets ratio is found to have a significant relationship with market valuation of quoted agricultural firms in Nigeria. This therefore means that debt-to-assets ratio has a positive and significant effect on market valuation of quoted agricultural firms in Nigeria. This finding is related to the finding of Aniefor and Onatuyeh (2019) who established that there is significant relationship between total debts to assets ratio and market capitalization of the selected quoted consumer firms in Nigeria.

Furthermore, the study found that debt-to-equity ratio has a positive relationship with market valuation of quoted agricultural firms in Nigeria. This was confirmed by a positive coefficient of debt-to-equity ratio. From the second hypothesis tested, debt-to-equity ratio is found to have a significant relationship with market valuation of quoted agricultural firms in Nigeria. This therefore means that debt-to-equity ratio has a positive and significant effect on market valuation of quoted agricultural firms in Nigeria. This finding is related to the finding of Sohail and Ulfat (2019) who established that the relationship between debt-to-equity ratio and market

valuation is positive because when the debt-to-equity ratio increases then, companies achieve the economies of scale and increase the valuation of companies.

In addition, the study found that long-term debt ratio has a positive relationship with market valuation of quoted agricultural firms in Nigeria. This was confirmed by a positive coefficient of long-term debt ratio. From the third hypothesis tested, long-term debt ratio is found to have a significant relationship with market valuation of quoted agricultural firms in Nigeria. This therefore means that long-term debt ratio has a positive and significant effect on market valuation of quoted agricultural firms in Nigeria. This finding is related to the finding of Tonye, Andabai and Bina (2018) which stated that market capitalization had a positive significant effect on long-term debt of firms in Nigeria. Also, Onoja and Ovayioza, (2015) also found clear evidence of a positive relationship between long-term debt and firms' performance.

Lastly, the study found that short-term debt ratio has a positive relationship with market valuation of quoted agricultural firms in Nigeria. This was confirmed by a positive coefficient of debt-to-assets ratio. Also, from the fourth hypothesis tested, short-term debt ratio is found to have a significant relationship with market valuation of quoted agricultural firms in Nigeria. This therefore means that short-term debt ratio has a positive and significant effect on market valuation of quoted agricultural firms in Nigeria. This finding is related to the finding of Sohail and Ulfat (2015) who established that short term debts has a positive effect on market capitalization (MCAP) of the selected consumer goods firms quoted on the Nigerian Stock Exchange during 2006-2017.

### **SUMMARY**

This study examined the effects of capital structure on market valuation of quoted agricultural firms in Nigeria. The study covered a period of nine years using data spanning from 2014 through 2022. Debt-to-assets ratio, debt-to-equity ratio, short-term debt ratio and long-term debt ratio were used as the proxies of capital structure while market capitalization was used to measure market valuation. The study made use time series data which were sourced from Nigerian Exchange Group (NGX). The data sourced were analysed by Panel Least Square (PLS) technique of regression analysis. The findings of the study are summarized as follows:

1. Market capitalization, debt-to-assets ratio, debt-to-equity ratio, short-term debt ratio and long-term debt ratio were all stationary at levels.
2. There is a positive and significant relationship between debt-to-assets ratio and market valuation of quoted agricultural firms in Nigeria.
3. There is a positive and significant relationship between debt-to-equity ratio and market valuation of quoted agricultural firms in Nigeria.
4. There is a positive and significant relationship between long-term debt ratio and market valuation of quoted agricultural firms in Nigeria.
5. There is a positive and significant relationship between short-term debt ratio and market valuation of quoted agricultural firms in Nigeria.
6. About eighty-four percent of variation in market valuation of quoted agricultural firms in Nigeria is explained by variations in debt-to-assets ratio, debt-to-equity ratio, short-term debt ratio and long-term debt ratio.
7. Debt-to-assets ratio, debt-to-equity ratio, short-term debt ratio and long-term debt ratio joined together exert significant effect on market valuation of quoted agricultural firms in Nigeria. Thus, the implication of this is that capital structure has significant effect on market valuation of quoted agricultural firms in Nigeria.

### **CONCLUSION**

The study has empirically examined the effect of capital structure on market valuation of quoted agricultural firms in Nigeria. The study found that debt-to-assets ratio, debt-to-equity ratio, short-term debt ratio and long-term debt ratio have joint significant effects on economic performance in Nigeria measured by market capitalization. Based on the findings, the study has yielded empirical evidence and thus concluded that capital structure positively and significantly affects market valuation of quoted agricultural firms in Nigeria.

### **RECOMMENDATIONS**

Based on the research findings and the conclusion drawn, the following are recommended:

1. Given that short term debt ratio and long-term debt ratio have a positive and significant effect on market valuation, agricultural firms should use combination of short-term debt ratio long-term debt ratio as it increases their value and performance.
2. Given the positive and significant relationship between short-term debt ratio and market valuation, agricultural firms should also rely more on short-term debt, which forms the major part of their leverage, and focus more on developing internal strategies that can help improve their market value.
3. Given the positive and significant relationship between debt-to-assets ratio and market valuation, agricultural firms in Nigeria should continue to strategically plan and manage their debt structure in order to improve their profitability and market valuation.



4. Investors should also consider the financial structure of any manufacturing firm before investing in them as the strength of a firm's capital mix determines the level of returns.
5. Government should liaise with the stakeholders in the agricultural sector in order to develop the market to enable manufacturing firms to raise long-term debt so as to avoid over-reliance of short-term debt which is associated with high cost.

#### SUGGESTIONS FOR FUTURE STUDIES

This study can be improved upon by future researchers in the following ways:

1. Replicating this specific study and doing it using other sectors apart from agricultural sector would be the best approach to finding more evidence for or against the four questions that were proposed.
2. Further research can be done using other techniques of data analysis.
3. There is need for future researchers to enquire the effect of capital structure on profitability of financial performance of agricultural firms as well as other kinds of firms in Nigeria.

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