

Original Research Article

THE IMPACT OF FINANCIAL STRUCTURE ON FIRM PERFORMANCE: A STUDY OF NIGERIA AGRICULTURAL AND HEALTHCARE SECTOR

Abstract

This study examines the impact of financial structure on performance of agricultural and healthcare firms listed in Nigerian Stock Exchange for a period of twenty one (21) years 1993 to 2013. The study selected fifteen (15) out of the sixteen (16) firms listed on agricultural and healthcare sector. Data were collected from the Nigerian Stock Exchange factbook of various issues as relevant and was analysed using the panel technique of data analysis. Financial structure was surrogated by total debt to total equity ratio while firm's performance was measured by return on assets and return on equity. The analysis for agricultural firms revealed that financial structure albeit total debt to total equity impact negatively on performance. On the contrary, healthcare firm's analysis indicate that financial structure impact positively on agricultural and healthcare sector performance. The relationship between financial structure and agricultural firm performance supports the pecking order theory while that of the healthcare firms aligned with the trade-off theory. Summarily, financial structure impacted negatively on agricultural firm's performance and impacted positively on healthcare firm performance. To this effect, we suggests that it is very crucial for firm's management to carefully look at the debt-equity mix, which according to the result of the study, impact negatively and positively on performance of firms in agricultural and healthcare sector respectively.

KEY WORDS: Financial Structure, Firm Performance, Return on Assets, Return on Equity, Agricultural and Healthcare Firms

1.1 BACKGROUND OF THE STUDY

Financial structure and firm performance has received considerable attention in the finance literature following the seminal work of Modigliani and Miller (1958). Financial structure relates to the combination of sources from which long term funds are raise for the business. In other words, it means the composition of the firm's long term funds comprising of common equity, preference equity and debt. The financial structure of a firm consists of various sources, which are presented in the equity and liability side of the balance sheet (Modugu, 2013). Financial structure proposes the ratio between owned capital and borrowed capital. While planning the financial structure, proper balance between debt and equity is indispensable. There is no strongly binding rule in deciding the optimal financial structure. A firm may decide to go for equity financing or may decide on a certain ratio between equity and debt financing.

Firm's financial structure decision is necessary for it to compete effectively in the business environment. The decision is also important because of the need to maximize returns to various firm constituencies. The desire of most firm is to have a mix of debt, preferred stock and common stock which will maximise shareholders wealth or

47 maximize market price per share. Weighted average cost of capital depends on the mix
48 of different securities in the financial structure. A change of different securities in the
49 financial structure will cause a change in the financial structure. Hence, there will be a
50 mix of different securities in the financial structure at which weighted average cost of
51 capital will be the least. Modigliani and Miller (1958) noted that in a world without
52 corporate taxes financial structure is irrelevant. The firm value is independent of the
53 financial structure decision as the value of a firm equals operating income divided by
54 operating cost of capital. Thus, the mix between debt and equity is not important. Any
55 benefit of low cost debt is completely offset by an increase in cost of equity due to use
56 of borrowing.

57 Furthermore, Modigliani and Miller (1958) observed that with corporate taxes, value
58 of levered firm equals the value of unlevered plus the value of the tax shield.
59 Correspondingly, the higher the debt in the financial structure, the higher will be the
60 value of a levered firm. The firm value can be increased by an equivalent increase in
61 leverage level, and by implication, the firm should issue maximum debt. This is not
62 the practice in the real world where firms by and large prefer internal financing and
63 moderately source debt financing due to fear of bankruptcy cost. Debt financing gives
64 firm tax advantage. On the other hand, the firm is under pressure to meet obligations
65 arising from interest and principal payment. In the event that these obligations are not
66 satisfied, the firm may be face with some ilk of financial difficulty. The possibility of
67 bankruptcy has a negative impact on the value of the firm. Nonetheless, it is not the
68 risk of bankruptcy itself that lowers value. Rather it is the cost associated with
69 bankruptcy that lowers value. As the proportion of debt in the firm's financial
70 structure is increased, the probability of bankruptcy increases also. Subsequently, the
71 rate of return required by debt holders increases with leverage. The optimal ratio of
72 debt to equity is determined by taking an increasing amounts of debt until the
73 marginal gain from leverage is equal to the marginal expected loss from the
74 bankruptcy cost.

75 In a bid to explain the impact financial structure decision has on firm performance,
76 several theories such as perking order theory, trade off theory and the agency cost
77 theory were developed by some academic scholars in the past. The perking order
78 theory as pioneered by Myers and Majluf (1984) argues that equity is a less preferred
79 means to raise capital because managers issue new equity (who are assumed to know
80 better about true conditions of the firm than investors). Investors believe that
81 managers overvalue the firms and are taking advantage of this over-valuation. As a
82 result, investors will place a lower value to the new equity issuance. The perking
83 order theory preserves that businesses adhere to a hierarchy of financing sources and
84 prefer internal financing when available, and debt is preferred over equity if external
85 financing is required. Thus, the form of debt a firm chooses can act as a signal of its
86 need for external finance. This sort of signalling can affect how outside investors view
87 the firm as a potential investment, and once again must be considered by the people in
88 charge of the firm when making financial structure decisions.

89 The agency cost theory by Jensen and Meckling (1976) brings to light the relationship
90 that exist between firm managers, shareholders and debt holders as well as the impact
91 this relationship exert on the financial structure. On the standpoint of agency theory,

the optimal financial structure of the capital stems from a concession between sources of financing via common equity, preference equity and debts such that conflict of interest between suppliers of funds (equity and debt holders) and managers is appeased. Grigore and Stefan-Duicu (2013) envisaged that the indebtedness allows shareholders and managers to adhere to same objectives, but causes other conflicts (between managers and shareholders, on the one hand, and creditors, on the other side). The optimal level of indebtedness is the one that allows the minimization of overall agency costs (Grigore and Stefan-Duicu, 2013).

Statement of the Problem

According to Chartered Financial Analyst Institute (2013) determining the debt to equity ratio that maximizes a firm value is difficult as it depends on business risk of the firm (greater the business risk, the lower the optimal financial structure), tax situation of the firm (if the firm cannot use tax deductions, then there is no benefit from debt), degree to which the firm's assets are tangible (the more tangible, the greater the optimal financial structure), firm's corporate governance (the better the governance, the lower the cost of equity and, therefore, the greater the financial structure) and transparency of the financial information (the more transparent, the lower the cost of equity and, therefore, the greater the optimal financial structure).

Scholars in financial literature have not found the debt to equity ratio that maximizes the value of a firm despite its theoretical influence. The best that academics and practitioners have been able to achieve are prescriptions that satisfies short-term goals. For instance, the empirical findings of Cheng and Tzeng (2014) asserted that the positive impact of financial structure on the firm value tends to be stronger for firms of higher financial quality, firms with greater growth opportunities and firms with higher corporate tax rates. Furthermore, leverage may also have a positive impact on firm value provided that a firm with a higher free cash flow, a higher corporate rate or a higher inflation, is able to properly capitalize on the resultant opportunities. While this can be true in some circumstances, it fails to consider either the intricacies of the competitive environment which the firm operate, or the long-term survival needs of the firm. Ramadan (2015), Sourmade and Hayajneh (2014), Rayan (2008) and Akinlo and Asaolu (2012) have found that financial structure negatively impact on firm performance. On the basis of the argument above, empirical studies on the impact of financial structure on firm performance are inconsistent and controversial. The All Progressive Change (APC) led government has taking agricultural and healthcare sectors as its priorities. The president of the Federal Republic of Nigeria, Muhammadu Buhari, on 8th February, 2015 said the government will give agriculture the needed attention as part of effort to diversify the economy due to the fall in crude oil prices in the international market which has resulted in dwindling revenue of the federal government. The government has also embarked on healthcare sector reforms as a means of preventing capital flight through health tourism. It is ideal to look at the impact of financial structure on agricultural and healthcare sector of the economy based on priority placed on these sectors by the federal government under President Muhammadu Buhari.

Objectives of the Study

The focal intent of this study is to examine the impact of financial structure on performance of agricultural and healthcare firms. Explicitly, the study will:

1. Examine the impact of financial structure on return on assets of agricultural and healthcare firms.
2. Evaluate the impact of financial structure on return on equity of agricultural and healthcare firms.

The hypotheses that will be tested in the course of this study are affirmed below as:

1. Financial structure has no significant impact on return on assets of agricultural and healthcare Nigerian firms.
2. Financial structure has no significant impact on return on equity of agricultural and healthcare Nigerian firms.

2.0 REVIEW OF RELATED LITERATURE

Conceptual Exposition

Financial structure is considered as one of the important determinant of firm's success thus, the firm's choice of financial structure remains a complicated issue considering the unexplained financing behaviour (Bhardwaj, Vikas and Bargal, 2010). Decision that relates to financial structure is very necessary and crucial for every firm (Tan and Hamidb, 2014). In their attempt to maximise the overall value, firms differs with respect to financial structures (Modugu, 2013). The financial structure of a firm is defined to be the menu of the firm's liabilities that is, the right-hand side of the balance sheet. A great variety of types of securities can be and are used in firms' financial structures. In addition to common stock equity, some typical examples are bank loans, commercial paper, secured bonds, debentures, convertible bonds, income bonds, preferred stock, and warrants. The purpose of financial structure is to provide an overview of the level of the firm's risk. As a rule of thumb, the higher the proportion of debt financing a firm has, the higher its exposure to risk will be. A firm's financial structure points out how its assets are financed. When a firm finances its operations by opening up or increasing capital to an investor albeit preferred shares, common shares, or retained earnings, it avoids debt risk, thus reducing the potential that it will go bankrupt. Moreover, the owner may choose debt funding and maintain control over the company, increasing returns on the operations. Debt takes the form of a corporate bond issue, long-term loan, or short-term debt. The latter directly impacts the working capital. It is very important for a firm to manage its debt and equity financing because a favourable ratio will be attractive to potential investors in the business.

Performance is the execution or accomplishment of work feats etc. or a particular action, deed or proceeding. However, the manner in which or the efficiency with which something reacts or fulfils its intended purpose is defined as performance. Performance may thus, mean different things to different businesses. Success or failure in the economic sense is judged in relation to expectations, return on invested capital and the objective of the business concern. In understanding the term performance, a clear distinction needs to be drawn between performance measures and performance indicators. Performance measures need to be based on cat evaluation of the causes and effects of policy intervention whereas a performance indicator is less precise and usually provides only intermediate measure of achievement. Financial performance is the blue print of the financial affairs of an entity and reveals how a firm has prospered under the leadership of its management. The financial performance

of any firm can always be judged in the lights of its objectives and the main objective of a firm is to earn profit and to enlarge profit by making the most efficient use of the resources available to them. The financial performance of firms could be analysed by a composite index of not only quantifiable selected trends and ratios, an analysis of the financial statements, a study of the cash flow and the fund flow statements etc. but also qualitative factors like operational efficiency and effectiveness and socio-economic development of the country.

Theoretical Background

Following the proposition of Modigliani and Miller (1958) on the inappropriateness of financing cradle in determination of a firm value, the literature on financial structure has been expanded by many theoretical and empirical contributions (Chepkemai, 2013). The trade-off theory argues that an optimal financial structure may result from the balancing of the agency costs and benefits of debt (Jensen & Meckling, 1976). The use of debt by a firm assuage the probable conflict between firm managers and common stock holders by alleviating dependence on external equity and by establishing a commitment to pay out cash in the form of interest. Nevertheless, according to Myers (1977), debt engenders a conflict of interest between bond holders and owners in the form of the “under investment” and “asset substitution” problems (Rajagopal, 2008). The under investment problem occurs when shareholders forego positive net present value projects if they anticipate that profits will be used to pay off bond holders: a problem that is more pronounced in the case of growth firms. Rajagopal (2008) noted that the asset substitution problem lies in the shareholders’ incentive for risk shifting within a relationship where bond holders have a fixed claim on the firm’s cash flows but shareholders hold the residual claim; the latter can then take action so as to increase the value of their claims while imposing additional, uncompensated risk on bond holders.

Myers and Majluf (1984) through the pecking order theory suggested that when there is an information asymmetry between managers or inside owners and outside investors, the choice of or adjustments to the financial structure can influence the market’s perception of the future stream of cash flows and affect the value of the firm. The issuance of new equity in the presence of information asymmetry could signal bad news (Myers and Majluf, 1984). Considered together with transactions costs, this information effect suggests a preference by the firm for a hierarchy of funding sources: internally generated equity is preferred to debt, which, due to its lower uncertainty and associated cost, is in turn preferred to external equity (Rajagopal, 2008). In consistence with the pecking order theory, internal financing is preferred to raising funds externally. Thus, a more profitable firm that has a greater availability of internal funds will tend to rely less on external borrowing. A firm with greater investment opportunities will make more profit which in turn reduce the preference of debt, financing of operations will be heavily relied on internal financing.

Empirical Studies

The theories of financial structure have been largely studied in developed and under-developed countries of the world and the findings provides support to the various theories. A brief of such studies and findings are put together here. Stekla, Grycova, Homolka (2015) assessed the development of financial structure and capital disparity

across the farmers' cooperatives from fourteen regions of the Czech Republic for time series 2009 – 2013. Data were obtained and processed from the database of enterprises of Albertina. The financial and economic crisis lowered the debt to equity ratio and debt to assets ratio and the profitability ratios as well and the indicators reports V-shaped trend. The disparity of the ratio values among regions at the end of the monitored period seems not to be changed. Usually, Prague as the region with the highest GDP per capita during the monitored period reports usually the extreme values in most ratios and higher deviations in debt ratios and lower deviations in profitability ratios. Also, the impact of financial structure indicators on the profitability of cooperatives seems to be not significant during the monitored period.

Saeed, Munir, Lodhi, Riaz and Iqbal (2014) conducted an empirical study on the determinants of the financial structure of pharmaceutical firms of Pakistan listed at Karachi Stock Exchange. The study used data from 2004-2011 from the statement of balance sheet analysis published by Central Bank of Pakistan. The study employed a fixed effect panel data methodology using different variables related to firm characteristics (firm size, profitability, tangibility, growth, liquidity, earning volatility, non-debt tax shields) and corporate governance (CEO duality, CEO Tenure, Board size) and their effect was seen on the debt ratio, which acted as the proxy variable for the financial structure.

Jawade (2014) investigated the influence of financial structure on performance of pharmaceutical firms across various market capitalizations. With the criteria of firm being of Indian origin and having profits during the duration under study, firms were randomly chosen across capitalization categories. Data for period of 2008-2013 was undertaken for the study. The study asserted that the firms studied have been cautious in their approach for bringing in optimal financial structure. Irrespective of capitalization, firms have not particularly shown an inclination for pecking order theory or chosen the option of leverage even if in best position to do so. However, there were some exceptions which indeed followed the theory of resorting to pecking order but it could be measured as an aberration rather than a rule.

Bassey, Arene and Okpukpara (2014) examined the determinants of financial structure of agro-listed firms in Nigeria, using data generated from the financial statements of twenty eight (28) agro-allied firms, which have been listed in the Nigeria Stock Exchange (NSE) from 2005 to 2010. The major tool for data analysis was Ordinary Least Squares (OLS), which was used to analyse the identified firm-specific variables that affect short and long term debt ratios. In terms of short term debt ratio, large firms were perceived to have enough tangible assets at their disposal to pledge as collateral and access debt capital. Highly tangible firms also use more short-term debts, as high tangible asset reduced the magnitude of debt loss incurred by debt providers if the firms default. Growing listed firms used more short term debts, presumably due to their huge capital requirement for financing new short term investment opportunities and the need to meet current liabilities and other overhead expenses. The result further shows agro-listed firms with high taxes use more short term debts in their finances. Highly profitable firms do not depend on short-term debts, as they are perceived to be liquid enough to finance their short term investment through retained earnings at the expense of taking short term debts. In terms of long term debt ratio, highly profitable firms use less long term debts, implying that they have enough internally generated funds for their financing needs at the expense of

borrowing. Large sized firms depend on long term debt for their finances because of high tangible assets at their disposal as collaterals.

Tan and Hamid (2014) explored the relationship between financial structure and firm performance. The sample of the study was 41 listed firms in Bursa Malaysia from year 2007 to year 2011. This study used four financial structure measures as independent variables which are short-term debt to total assets, long-term debt to total assets, total debt to total assets and total debt to total equity. Another five firm performance indices as dependent variables which are return on equity, return on assets, gross profit margin, earnings per share and price earnings. Financial structure variable which measured by total debt to total assets, short-term debt to total assets and long-term debt to total assets have significant positive relationships with return on equity, return on assets; and significant negative relationships with gross profit margin. In sum, the results showed that there is a relationship and significant influence between financial structure and corporate performance in Malaysia plantation sector firms.

Njagi (2013) looked into the relationship between financial structure and financial performance of agricultural firms listed at the Nairobi Stock Exchange. The population of the study was all the 7 firms listed in the Nairobi Stock Exchange under the agricultural sector. Secondary data were used in the study. The study being descriptive in nature, the quantitative method of data analysis and inferential analysis were used as analysis techniques. The Adjusted R-squared showed that there was variation of financial performance of agricultural firms listed in the Nairobi Stock Exchange due to variations in short term long term debt and revenue. The study revealed that financial structure of a firm is a factor influencing the financial performance of agricultural firms listed in the Nairobi Stock Exchange. From the findings on the correlation analysis the study revealed that there was a strong relationship between financial structure and financial performance.

Mohammadzadeha, Rahimi, Rahimi, Aarabic and Salamzadeha (2013) determined the relationship between the financial structure and the profitability of pharmaceutical firms in Iran. For this purpose, top 30 Iranian pharmaceutical firms defined as study samples and their financial data were gathered for the period of 2001-2010. They applied the net margin profit and debts to asset ratio were used as indicators of profitability and financial structure, respectively and sales growth was used as a control variable. Results showed that there was a significant negative relationship between profitability and financial structure which means that pharmaceutical firms have established a pecking order theory and internal financing by the firms have led to more profitability.

Ana, Dragan and Monica (2012) attempted to identify empirical evidences for structural determinants on Macedonian agricultural firms' financial performance and to explain the financial strategy of these firms to earn profit. The relationship was econometrically tested by the specification of a fixed-effect model. Following previous studies and relaying on pecking-order theory and trade-off theory, the analysis applies on a dynamic panel data consisting of 26 Macedonian agricultural firms during the period 2006-2010. The agricultural firms' financial structure determinant was tested by the specification of two different models: the first model used debt-to-equity ratio as a financial structure indicator and the second one used the

debt ratio. Results suggest that Macedonian agricultural firms in the short run are limited by pricing flexibility undertaking different strategies to increase profitability. Furthermore, statistical evidences do not support the hypothesis of that high-levered agricultural firms in Macedonia have higher opportunities to profit.

Kumar, Anjum and Nayyar (2012) ascertained the financial structure pattern of various pharmaceutical firms for the period of 2007-2011 and analyse the effect of changes in financial structure on its investment pattern over the period .The study also attempted to make an intra-firm analysis with the objective of determining the importance of debt-equity mix for the effective investment policy. The study concluded that financial structure decision of the pharmaceutical firms have very little effect on its investment pattern, which defines that the firm is using long term sources of funds to finance its current assets and its operational activities of its business with the object to attain the long term solvency and maximising profitability with least cost of capital.

Zambuto, Billitteri and Nigro (2011) dealt with the financial structure problem in the pharmaceutical industry that has recently changed its business model because of the biotechnology advent. They proposed some set of hypotheses that explains the drivers of financial structure decision in the industry and tested their validity over a sample of 50 biopharmaceutical firms. The obtained result showed that pecking order theory is suitable to explain intra industry differences in financial structure while growth opportunities are the most explicative variable.

Nurmet (2011) evaluated the developments in agricultural firms' financial structure, analysing trends in financing structure of Estonian agricultural firms from 1996 to 2008. The problem was, if sector's higher debt level causes higher leverage on farm level, and does debt ratio having influence on farm profitability. The analysis was based on data of Estonian Statistics, and used the method of financial ratio trend analysis. The results were presented on average enterprise basis. Results showed that debt levels have increased gradually, without causing specific changes in debt-to-equity ratios.

Bhardwaj, Chaudhary and Bargal (2010) tried to examine, analyse and discover the industry benchmark and scrutinize how financial structure plays a momentous role in the firm's overall growth. The financial results of the various pharmaceuticals firms were considered and concluded that leverage seems to be working in favour of the few firms while moving in opposite direction for the other firms. Firms that have been moderately geared are able to generate good returns to equity.

Franc-Da,browska (2009) presented the results of research concerning relationships between two financial structure theories (hierarchy theory and substitution theory) and dividend payment policies in Polish stock firms of the agricultural and foodstuff sector (2001–2006). The research hypothesis was verified positively; firm management limits dividend payment according to the hierarchy theory and prefers internal sources of financing economic activities. In order to verify the hypothesis, the methods of descriptive analysis, financial analysis and descriptive statistics were applied, together with a fixed effects model.

3.0 METHODOLOGY

The population of this study is made of agricultural and healthcare firms listed in Nigerian Stock Exchange for the period 1993 to 2013. The financial data were obtained from the Nigerian Stock Exchange (NSE) fact book of various years based on the financial statement tendered by firms in compliance with the rule and regulation of listing on the floor of the exchange. The sample of this study comprises of 15 firms (5 agricultural firms and 10 healthcare firms) from the total of 16 firms listed on the agricultural and healthcare sectors of the Nigerian Stock Exchange. The financial data of the firms were appraised albeit the balanced ordinary least square technique.

Description of Variables

Return on Assets (ROA) and Return on Equity (ROE) are the dependent variables. Return of assets measures efficiency of a firm in utilizing its assets to generate profit. It is the ratio of profit after tax to total assets. Return on equity is financial performance indicator which measure profitability by revealing how much profit a firm generates with the money invested by shareholders or common stock holders. Return on equity as used in this work is the ratio of profit after tax to book value of owner equity. The explanatory variable is Total Debt to Total Equity (TDTE). This reflect the financial structure. It is the ratio of the firm's total debt to total shareholder equity

Econometric Model

The primary aim of this study is to examine the impact of financial structure on the performance of agricultural and healthcare firm. To realize this goal, we followed the model of Tan and Hamid (2014) and constructed two models to reflect the specific objectives of this study. The models are stated as follows:

Model 1

$$ROA_{i,t} = \alpha_i + \beta_1 TDTE_{i,t} + \varepsilon_{i,t} \text{-----} 3.1$$

Model 2

$$ROE_{i,t} = \alpha_i + \beta_1 TDTE_{i,t} + \varepsilon_{i,t} \text{-----} 3.2$$

Where: ROA = Return on Assets, ROE = Return on Equity, $TDTE$ = Total Debt to Total Equity Ratio, α_i is constant coefficient of firm i , β_1 is the slope of the independent variables of firm i in year t , and $\varepsilon_{i,t}$ is standard error of firm i in year t .

4.0 RESULTS AND ANALYSIS

Agricultural Firms Analysis

Regression Result between Return on Assets (ROA) and Financial Structure

Table 4.1 shows the regression result on the impact of financial structure on return on assets of agricultural firms listed in Nigerian Stock Exchange. The result illustrates that financial structure albeit total debt to total equity ratio has negative but insignificant impact on firms return on assets. This supports the work of Tan and Hamid (2014) that debt-equity ratio impacts negatively on return on assets of Malaysian plantain firms. The implication of this finding is that for agricultural firms to perform better in their return on assets, it is imperative for the management to look at the debt-equity mix, which according to this result, has negative influence on the return on assets of firms listed on the agricultural sector of the Nigerian Stock Exchange. The total debt to total equity ratio coefficient of -0.054273 envisages that a unit rise in debt-equity ratio would lead to 5.43 depreciation in the return on assets

level of the agricultural firms. On the premise of the regression analysis between return on assets and financial structure in Table 4.1, the established regression equation for the period 1993 to 2013 is stated as:

$$ROA = 0.183999 + (-0.054273) TDTE$$

The regression equation revealed that if the financial structure through total debt to total equity ratio is kept constant, the return on assets of agricultural firms would stand at 0.183999.

Table 4.1: Regression Analysis on the Impact of Financial Structure on ROA

Dependent Variable: ROA				
Method: Panel Least Squares				
Sample: 1993 2013				
Periods included: 21				
Cross-sections included: 5				
Total panel (balanced) observations: 105				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.183999	0.142583	1.290475	0.1998
TDTE	-0.054273	0.117722	-0.461023	0.6458
R-squared	0.002059	Mean dependent var		0.149893
Adjusted R-squared	-0.007629	S.D. dependent var		1.244253
S.E. of regression	1.248991	Akaike info criterion		3.301413
Sum squared resid	160.6777	Schwarz criterion		3.351964
Log likelihood	-171.3242	Hannan-Quinn criter.		3.321897
F-statistic	0.212543	Durbin-Watson stat		1.276928
Prob(F-statistic)	0.645754			

Source: Computed output data using E-views 8.0

The coefficient of determination that is, Adjusted R-squared entails the variation in the dependent variable due to changes in the independent variable. From the analysis in Table 4.1 the value of adjusted R squared is -0.007629, a suggestion that there was variation of -0.76% on return on assets of agricultural firms listed in the Nigerian Stock Exchange due to changes in financial structure (debt-equity ratio). This reveals that only -0.76% changes in return on assets of agricultural firms could be accounted for by total debt to total equity ratio. The tabulated Durbin Watson (d*) for lower limit (dl) and upper limit (du) at 20 degree of freedom, that is F (20, 1) and 5% level of significance are 1.201 and 1.411 respectively. The calculated Durbin Watson (d*) of 1.276 falls within the lower and upper limit value. This suggests that there is no element of positive autocorrelation between the variables.

The balanced panel regression analysis in Table 4.1 shows that total debt to total equity ratio has no significant impact on return on assets of agricultural firms. To this effect, the null hypothesis that financial structure has no significant impact on return on assets of agricultural firms could not be rejected.

Regression Result between Return on Equity (ROE) and Financial Structure

The regression analysis in Table 4.2 depicts the impact of financial structure on return on equity of agricultural firms in Nigeria. The outcome reveals that financial structure as reflected by total debt to total equity ratio has negative but insignificant impact on firms return on equity. However, it refutes the empirical findings of Tan and Hamid

(2014) that debt-equity ratio impacts positively on return on equity of Malaysian plantain firms. It could be deduced from the result in Table 4.1 that for shareholders of agricultural firms listed on the Nigerian Stock Exchange to increase their wealth, a clear-cut ratio of total debt to total equity should be kept. Furthermore, the result indicates that the level of debt-equity mix of agricultural firms within the period of the study does not increase their return on equity. The total debt to total equity ratio coefficient of -0.041901 entails that a percentage increase in debt-equity ratio would lead to 4.19 decline in return on equity level of the agricultural firms. On the presumption of the regression analysis on the impact of financial structure on return on equity as contained in Table 4.2 for the period 1993 to 2013, the determined regression equation is stated as:

$$ROE = 0.297955 + (-0.041901) TDTE$$

The regression equation exhibited that if the financial structure via total debt to total equity ratio is held constant, the return on equity of agricultural firms would stand at 0.297955.

Table 4.2: Regression Analysis on the Impact of Financial Structure on ROE

Dependent Variable: ROE				
Method: Panel Least Squares				
Sample: 1993 2013				
Periods included: 21				
Cross-sections included: 5				
Total panel (balanced) observations: 105				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.297955	0.096842	3.076723	0.0027
TDTE	-0.041901	0.079957	-0.524045	0.6014
R-squared	0.002659	Mean dependent var		0.271623
Adjusted R-squared	-0.007024	S.D. dependent var		0.845347
S.E. of regression	0.848310	Akaike info criterion		2.527723
Sum squared resid	74.12192	Schwarz criterion		2.578275
Log likelihood	-130.7055	Hannan-Quinn criter.		2.548208
F-statistic	0.274623	Durbin-Watson stat		1.364275
Prob(F-statistic)	0.601373			

Source: Computed output data using E-views 8.0

The coefficient of determination that is, Adjusted R-squared entails the variation in the dependent variable due to changes in the independent variable. From the result in Table 4.1, the value of adjusted R squared is -0.007024 and indicated that there was variation of -0.70% on return on equity of agricultural firms listed in the Nigerian Stock Exchange due to changes in financial structure (debt-equity ratio). This reveals that only -0.70% changes in return on equity of agricultural firms listed in the Nigerian Stock Exchange could be accounted for by total debt to total equity ratio. The tabulated Durbin Watson (d*) for lower limit (dl) and upper limit (du) at 20 degree of freedom, that is F (20, 1) and 5% level of significance are 1.201 and 1.411 respectively. The calculated Durbin Watson (d*) of 1.364 falls within the lower and upper limit value. This suggests no autocorrelation existed between variables.

The panel data regression result in Table 4.2 suggests that total debt to total equity ratio has no significant impact on return on equity of agricultural firms. Consequently,

the null hypothesis that financial structure has no significant impact on return on equity of agricultural firms could not be rejected.

Healthcare Firms Analysis

Regression Result between Return on Assets (ROA) and Financial Structure

Table 4.3 discloses the regression analysis on the impact of financial structure on return on assets of healthcare firms in Nigeria. The result indicates that financial structure albeit total debt to total equity ratio has positive and significant impact on firms return on assets. This disagrees with the result of Mohammadzadeha, Rahimi, Rahimi, Aarabic and Salamzadeha (2013) that financial structure negatively impact on return on assets of pharmaceutical firms in Iran. It could be derived from Table 4.3 that, for healthcare firms listed on the Nigerian Stock Exchange to have a good profitable return on assets, it is very crucial for the management to look at the debt-equity mix, which according to this result, has direct influence on the return on assets. It could be also adduced that if the debt-equity ratio is properly managed, it would lead to higher efficiency in assets utilization by healthcare firms in Nigeria. The total debt to total equity ratio coefficient of 0.106637 implies that a unit rise in debt-equity ratio would lead to 10.66 increase in the return on assets level of the healthcare firms. On the premise of the regression analysis between return on assets and financial structure in Table 4.3, the established regression equation for the period 1993 to 2013 is expressed as:

$$ROA = (-44.23809) + 0.106637 \text{ TDTE}$$

The regression equation revealed that if the financial structure through total debt to total equity ratio is kept constant, the return on assets of healthcare firms would stand at -44.23809.

Table 4.3: Regression Analysis on the Impact of Financial Structure on ROA

Dependent Variable: ROA				
Method: Panel Least Squares				
Sample: 1993 2013				
Periods included: 21				
Cross-sections included: 5				
Total panel (balanced) observations: 105				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-44.23809	46.15259	-0.958518	0.3389
TDTE	0.106637	0.005990	17.80186	0.0000
R-squared	0.603739	Mean dependent var		72.48756
Adjusted R-squared	0.601834	S.D. dependent var		1049.170
S.E. of regression	662.0304	Akaike info criterion		15.83798
Sum squared resid	91163138	Schwarz criterion		15.86986
Log likelihood	-1660.988	Hannan-Quinn criter.		15.85087
F-statistic	316.9063	Durbin-Watson stat		2.009033
Prob(F-statistic)	0.000000			

Source: Computed output data using E-views 8.0

The coefficient of determination that is, Adjusted R-squared entails the variation in the dependent variable due to changes in the independent variable. From the outcome in Table 4.1, the value of adjusted R squared is 0.601834, a suggestion that there was variation of 60.18% on return on assets of healthcare firms listed in the Nigerian Stock Exchange due to changes in financial structure (debt-equity ratio). This reveals

that 60.18% changes in return on assets of healthcare firms could be accounted for by total debt to total equity ratio. The critical value of F-distribution at 5% level of significance and 19 degree of freedom that is, F (19, 2) is 3.52. The F-statistic calculated of 316.9 in Table 4.3 is greater than the tabulated F-statistic of 3.52 and by implication, the model is statistically significant and has a goodness of fit. In addition, the probability of F-statistic 0.000000 is statistically significant at 1% level of significance. The Durbin Watson statistic of 2.0 shows there is no problem of autocorrelation between the dependent and explanatory variable.

The regression outcome in Table 4.3 indicates that total debt to total equity ratio has significant impact on return on assets of healthcare firms. To this end, the null hypothesis that financial structure has no significant impact on return on assets of healthcare firms could not be accepted.

Regression Result between Return on Equity (ROE) and Financial Structure

The regression analysis in Table 4.4 unveils the impact of financial structure on return on equity of healthcare firms in Nigeria. The regression result reveals that financial structure proxied by total debt to total equity ratio has positive but insignificant impact on firms return on equity. This negate the findings of Mohammadzadeha, Rahimi, Rahimi, Aarabic and Salamzadeha (2013) that financial structure negatively impact on return on equity of pharmaceutical firms in Iran. It could be derived from regression analysis in Table 4.4 that, for shareholders of healthcare firms listed on the Nigerian Stock Exchange to increase their wealth, a clear-cut ratio of total debt to total equity should be maintained. The total debt to total equity ratio coefficient of 2.15E-06 means that a percentage rise in debt-equity ratio would increase return on equity by a factor of 215.

Table 4.4: Regression Analysis on the Impact of Financial Structure on ROE

Dependent Variable: ROE				
Method: Panel Least Squares				
Sample: 1993 2013				
Periods included: 21				
Cross-sections included: 5				
Total panel (balanced) observations: 105				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.023800	0.082720	0.287715	0.7739
TDTE	2.15E-06	1.07E-05	0.200295	0.8414
R-squared	0.000193	Mean dependent var		0.026154
Adjusted R-squared	-0.004614	S.D. dependent var		1.183841
S.E. of regression	1.186568	Akaike info criterion		3.189486
Sum squared resid	292.8525	Schwarz criterion		3.221363
Log likelihood	-332.8961	Hannan-Quinn criter.		3.202373
F-statistic	0.040118	Durbin-Watson stat		1.657620
Prob(F-statistic)	0.841446			

Source: Computed output data using E-views 8.0

On the supposition of the regression analysis on the impact of financial structure on return on equity as contained in Table 4.4 for the period 1993 to 2013, the regression equation would be deduced as:

$$ROE = 0.023800 + 2.15E-06 TDTE$$

The regression equation suggested that if the financial structure via total debt to total equity ratio is held constant, the return on equity of healthcare firms would stand at 0.023800.

The coefficient of determination that is, Adjusted R-squared entails the variation in the dependent variable due to changes in the independent variable, From the analysis in Table 4.4, the value of adjusted R squared is -0.004614. This is an assertion that there was variation of -0.46% on return on equity of healthcare firms listed in the Nigerian Stock Exchange due to changes in financial structure (debt-equity ratio). This reveals that -0.46% changes in return on equity of healthcare firms could be accounted for by total debt to total equity ratio. Here the Durbin Watson statistic of 1.65 which is extremely not close to 2.0. Thus, there is a no problem of autocorrelation between the dependent and explanatory variable.

The regression analysis in Table 4.4 unveils that total debt to total equity ratio has significant impact on return on equity of healthcare firms. As a result, the null hypothesis that financial structure has no significant impact on return on equity of healthcare firms could not be rejected.

5.0 CONCLUDING REMARKS

The focal intent of the study is to examine the impact of financial structure on performance of agricultural and healthcare Nigerian firms for a period of twenty one (21) years that is, 1993 to 2013. The study selected fifteen (15) out of the sixteen (16) firms listed on the agricultural and healthcare sector on the Nigerian Stock Exchange. Financial structure was surrogated by total debt to total equity ratio while firm performance was measured by return on assets and return on equity. The analysis for the agricultural firms revealed that financial structure albeit total debt to total equity impacts negatively on their performance as reflected by return on assets and return on equity. The negative relationship between Nigeria agricultural firm's performance and financial structure is supported by the pecking order theory which asserts that firms that are more profitable shall have more internal funds available in the form of retained earnings so less debt will be required due to its negative influence on profitability albeit costs of fund. On the other hand, the analysis on the healthcare firms indicated that financial structure impacts positively on their performance. The level of debt-equity mix maintained by healthcare firm within the period under review impacted positively on their performance with the highest impact being on their return on assets. The relationship between financial structure and performance of the healthcare firms is in favour of the trade-off theory of financial structure which connotes that a firm is at liberty to choose how much debt finance and how much equity finance to use by balancing the costs and benefits. Summarily, financial structure impacted negatively on agricultural firm's performance and impacted positively on healthcare firm performance. To this effect, we suggests that it is very crucial for firm's management to carefully look at the debt-equity mix, which according to the result of the study, impacts negatively and positively on performance of firms in agricultural and healthcare sectors respectively.

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