CAPITAL STRUCTURE AND COMMERCIAL BANKS PERFORMANCE IN NIGERIA

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Abstract
This study was aimed at ascertaining the effect of capital structure on commercial banks performance in Nigeria for the period 2012 to 2016. Ex post facto research design was used to address the problem of this study. The population comprised of 22 commercial banks out of which five banks were sampled using purposive/judgmental sampling technique. Secondary data sourced from various Audited Accounts and Reports of selected Commercial Banks and CBN Statistical Bulletins and Annual Reports were used. The core problem has been the inconsistency and sharp fluctuations in the commercial banks performance in Nigeria. Panel EGLS (Period random effects) method was used in estimating the models using EViews application software for windows. The main findings were that capital structure has no significant effect on return on equity, return on assets and earnings per share of commercial banks in Nigeria. However, commercial bank size had a significant effect on earnings per share. The conclusion was that the capital structure of commercial banks in Nigeria has no effect on their performance. The recommendations were that: the management of commercial banks should adopt the right strategy to attract adequate long term funds; the Government should improve the depth and liquidity of capital market to enable it meet the demand for long term funds; the financial system, economic system and commercial banks should maintain adequate credit/liquidity rating to attract investors and improve on their performances; the management of commercial banks should ensure that there is a right mix of debt and equity at all times through regular review of their financing mix.

Keywords: Capital Structure, Commercial Banks Performance, Annual Report, Period Random Effects and Nigeria

Introduction
The choice of capital structure is a central aspect of a company’s financial policy. The capital structure of a bank is an important factor that affects its operations. Capital structure or financing decision is a significant management decision that influences the shareholders’ return and risk. Ibenta (2005) defines capital structure as the way in which the long-term capital requirements of the firm are financed, that is, the relative proportions of debt and equity. There has always been a disagreement among financial experts on the issue of what should constitute the capital structure of a firm, and what could be the impact of leverage on the value of firms. The bone of contention is whether a business should be financed by equity capital or by debt capital or relative proportions of both.

Theoretically, the financial manager should plan an optimum capital structure to maximize the use of funds and to be able to adapt easily to changing conditions. The optimum capital structure is obtained when the market value per share is at a maximum or the average cost of capital is a minimum. The target capital structure of a firm should aim at minimizing the cost of capital and maximizing the market value of the firm. Some firms do not plan their capital structure and it develops as a result of the financing decision taken by the financial manager without any formal planning. Each firm may prosper in the short-run but ultimately they may face considerable difficulties in raising funds to finance their activities. With unplanned capital structure, these companies may fail to economize the use of their funds. Consequently, it is being
Increasingly realized that a company should plan its capital structure to maximize the use of the funds and to be able to adapt more easily to the changing conditions (Pandey, 1999).

The banking sector is one of the most highly regulated sectors because of the central role it plays in the financial intermediation process and in ensuring efficient allocation of resources. The extent to which the capital structure or the financing-mix can affect the performance of firms including banks is still an unresolved debate among financial experts and researchers. The debate on the relationship between capital structure and firm value has centered on whether there exists an optimal capital structure or at least a target capital structure or not. While optimum capital structure is the debt-equity mix that maximizes the firm’s value, target capital structure is the financing-mix toward which firms move their capital structure over time (Demirgunes, 2017). Capital structure is still a puzzle among finance scholars. Some scholars argue that capital structure has negative relationship with firm’s value, another group argues that it has positive relationship with firm’s value while a group still argues that it has no effect or relationship with a firm’s value. In view of this argument, this study is therefore aimed at determining the effect of capital structure on commercial banks performance in Nigeria. This introduction, is followed by the related literature in section 2. Section 3 is methodology. Section 4 covers results and discussion while section 5 contains conclusions and recommendations.

Statement of the Problem
There is inconsistency and fluctuations in the performance of banks in Nigeria which seems to be a pointer that commercial banks have not achieved an optimum capital structure that maximizes the firm’s value or the banks value and minimizes the firm’s risk or cost of capital. The banking sector in Nigeria is still characterized with: unstable performance going by certain metrics such as return on assets, return on equity and earnings per share; boom and burst cycles; and occasional distress and capital adequacy problems. The instability in the performance of banks had led to many reforms in the banking sector especially the Soludo (2004) Banking Sector Consolidation Exercise which was done with the objectives of reducing the boom and burst cycle in the banking sector; preventing imminent systemic crisis; and creating a sound banking system that depositors can trust and banks that investors can rely upon among others. There was also a major banking sector reform in 2009. These and other previous and subsequent reforms were aimed at ensuring that banks maintain adequate capital to enable them put up excellent banking performance which has been elusive. The studies carried out in this area have been inconclusive as no consensus has been reached. This study is therefore being undertaken to ascertain the effect of capital structure on commercial banking sector in Nigeria.

Hypotheses
The null hypotheses formulated to guide the study are:

a). The capital structure variables of LTDE, STDE, TODE have no significant effect on commercial banks performance proxied by return on assets (ROA);

b). The capital structure variables of LTDE, STDE and TODE have no significant effect on commercial banks performance proxied by return on equity (ROE).

c). The capital structure variables of LTDE, STDE, TODE have no significant effect on commercial banks performance proxied by earning per share (EPS).

The Concept of Capital Structure
The capital structure of a firm is the mix of debt including, preference stock and equity (Goyal, 2013). Capital structure decision is critical for any firm including banks for maximizing return to the various stakeholders and to enhance firm’s ability to operate in a competitive environment. The decision on capital structure is one of the most complex areas of financial decision making because of its interrelationship with other financial decision variables. Poor capital structure decisions can result in a high cost of capital thereby lowering the net present value (NPV) of projects and making more of them unacceptable (Rouf, 2015). The main business objective of a firm’s management is to maximize the wealth of its shareholders or owners. Shareholder wealth is defined as the current price of the firm’s outstanding ordinary shares. This objective
could be achieved by taking rational financing decisions regarding optimal capital structure which would minimize its cost of capital. In other words, the kind of combination of debt and equity that will minimize the firm’s cost of capital and hence maximizes the firm’s profitability and market value is the optimal capital structure (Gitman, 2003) cited in Goyal, 2013. Many studies have been done on the relationship between capital structure and performance of firms as regards return on equity, return on assets and earnings per share etc, but no consensus has been reached on the exact effect. As a result, the question of how to determine the optimal capital structure of a firm still remains a puzzle.

The use of capital structure is considered as one of the mechanisms to mitigate the agency cost and thereby increase firm’s performances (Berger and Bonaccorsidi, 2006 as cited in Manuwaduge, 2010). Accordingly, a positive relationship is expected between debt capital and firm performance. On the contrary, pecking order theory suggests a negative relationship between debt capital and firm’s performance. This is due to the fact that profitable firms are likely to use internal finance (retained earnings) resulting in less debt capital while less profitability firms are likely to use external finance / borrowing, resulting in high debt capital (Manawaduge, 2010).

The Concept of Commercial Bank

Commercial banking in Nigeria dates back to 1892 when African Banking Corporation (ABC) opened its first branch in Lagos. On 31st March, 1893, ABC was taken over by Elder Dempster Company and a new bank named British Bank of West Africa (BBWA) now First Bank was announced in May 1893. The number of commercial banks operating in Nigeria as at 31st December, 1995 was 64 with 2234 branches (NDIC, 1995). However, the number was reduced drastically by 31st December, 2005 owing to Banking Sector Consolidation Exercise which was a reform measure introduced in July 2004 to shore up the capital base of banks that was seriously eroded by financial distress which affected the banking sector. The total number of commercial banks in Nigeria is 22.

In Nigeria, a commercial bank is a member of the clearing house, that is, a bank that operates current accounts or accepts deposits withdrawable by cheques. The traditional role of commercial banks has been lending to the money markets. This is anchored on the theory that bank deposits are mainly repayable on demand, as a result, loans and advances should be made mainly on short-term horizon to avoid a mismatch.

The main functions of commercial banks include: receiving money on savings, current and other deposit accounts; paying or collecting cheques drawn or paid in by customers; granting of loans and advances, overdrafts etc; local and international funds transfer, provision of international banking services such as opening of letters of credit; making or managing investments on behalf of the government e.g. issuing of bonds, guarantees and indemnities on behalf of their customers. The total value of assets of commercial banks in Nigeria was about N3.3 trillion as at May, 2017 (CBN Economic Report, 2017. Commercial Banks play key roles in the financial international process, hence the need to assess how the capital structure affects their performance in terms of return on assess, return on equity and earnings per share. For the purpose of this study, five commercial banks are to be selected out of 22 commercial banks operating in Nigeria. They are Zenith Bank, United Bank for Africa (UBA), Access Bank, Guaranty Trust Bank and First Bank.

The Concept of Bank Performance

Bank’s performance can be analyzed in terms of its capacity to generate sustainable profitability. Profitability is a bank’s first line of defence against unexpected losses, as it strengthens its capital position and improves future profitability through the investment of retained earnings. An institution that persistently makes a loss will ultimately deplete its capital base, which in turn, puts equity and debt holders at risk. Since the ultimate purpose of any profit-seeking organization is to preserve and create wealth for its owners, the bank’s return on equity (ROE) needs to be greater than its cost of capital in order to create shareholder value. Although banking institutions have become increasingly complex, the key drivers of their performance remain earnings, efficiency, risk taking and leverage. Efficiency refers to the bank’s ability to generate revenue from a given amount of assets and to make profit from a given source of income. Risk-taking is reflected in the necessary adjustments to earnings for the undertaken risks to generate them e.g. credit-risk cost over the cycle. Leverage might improve results in the upswing in the way it functions as a multiplier but, conversely,
it can also make it more likely for a bank to fail due to rare unexpected losses. There are a multitude of measures used to assess bank performance, with each group of stakeholders having its own focus of interest.

An overview of Performance Measures for Financial Institution
According to ECB (2010), among the large set of performance measures for banks used by academics and practitioners alike, a distinction can be made between traditional, economic and market-based measures of performance. Traditional performance measures are similar to those applied in other industries and they include ROA, return on equity (ROE), cost – to – Income ratio. These three are the most widely used. Traditional performance measures of performance include:

Cost-to-Income Ratio: It shows the ability of the institution to generate profits from a given revenue stream.

EPS – Earning per share:
Another ratio that is used is Net Interest Margin. This is a proxy for the income generation capacity of the intermediation function of banks.

Market based measures of performance characterize the way the capital markets value the activity of any given company compared with its estimated accounting or economic value. The commonly used metrics include:

i). P/E ratio or ratio of market price per share over earnings per share. It indicates the number of years it will take the investor to recover the price of its investment.

ii). Price to book value (P/B): This ratio relates the market value of stockholders’ equity to its book value.

iii). The total share return (TSR): This is a ratio of dividends and increase of the stock value over the market stock price (TSR Ratio $\frac{\text{Dividend} + \text{Increase of the stock value}}{\text{Market Stock price}}$)

Capital Structure Irrelevance Theory of Modigliani and Miller (1958). The theory is considered as the starting point of modern theory of capital structure. Modigliani and Miller (1958) argue that under a restrictive set of assumptions, gearing would have no effect on either cost of capital or firm value. They base their arguments on the assumptions that: perfect capital markets exist where individuals and companies can borrow unlimited amounts at the same rate of interest; there are no taxes or transaction costs; personal borrowing is a perfect substitute for corporate borrowing; firms exist with the same business or systematic risk but different levels of gearing; and all projects and cash flows relating thereto are perpetuities and any debt borrowed is also perpetual. However, the assumption of no tax is not a reality and the capital market, in real terms, is not perfect. Therefore the question of how a firm can determine the optimal capital structure is still a puzzle among academic scholars as no consensus has been reached.

Static Trade – Off Theory
According to Pandey (1999), the cost of capital criterion does not consider the entire issue as it ignores risk and the impact on equity value and cost. The impact of financing decision on the overall cost of capital should be evaluated and the criterion should be to minimize the overall cost of capital, or to maximize the value of the firm. If there is tax shield advantage of debt (on account of interest tax deductibility), then debt would have a favourable impact on value and would help to reduce the overall cost of capital. It should however be realized that a company cannot continuously minimize its overall cost of capital by employing debt. A point or range is reached beyond which debt becomes more expensive because of the increased risk (financial distress) of excessive debt to creditors as well as shareholders. When the degree of leverage increases, the risk of creditors increases, and they demand a higher interest rate and do not grant loan to the firm at all, once its debt has reached a particular level. In addition, the excessive amount of debt makes the shareholders’ position very risky. This has the effect of increasing the cost of equity. Thus up-to a point, the overall cost of capital decreases with debt, but beyond that point, the cost of capital would start increasing and, therefore, it would not be advantageous to employ debt further. So, there is a combination of debt and
equity which minimizes the firm’s average cost of capital and maximizes the market value per share. In practice, there is generally a range of debt–equity ratio within which the cost of capital is minimum or the value is maximum (Pandey, 1999). The valuation framework makes it clear that excessive debt will reduce the share price (or increase the cost of equity) and thereby lower the overall return to shareholders, despite the increase in EPS. In other words, the trade-off between cost of capital and EPS set the maximum limit to the use of debt.

**Pecking Order Theory** This theory was presented by Myers and Majluf (1984). It states that the firms prefer to use their internal sources of financing to equity financing. If internal financing does not meet the needs of the firm, they use external financing. It has been found in practice that firms prefer internal finance (Donaldson, 1961 as cited in Pandey, 1999). If the internal funds are not sufficient to meet the investment outlays, firms go for external finance, issuing the safest security first. They start with debt, then possibly hybrid securities such as debentures, then perhaps equity as a last resort. Myers (1984) as cited in Pandey (1999) has called it the Pecking Order Theory since there is not a well defined debt-equity target and there are two kinds of equity internal and external, one at the top of the pecking order and one at the bottom.

**Agency Theory:** This is one of the explanations about a firm’s behavior in choosing its capital structure given by Jensen and Meckling (1976) as cited in Gill and Mathur (2011). This theory identifies the possible conflict between shareholders and a manager’s interests because the share of a manager is less than 100% in the firm. The managers are agents to shareholders; they try to transfer wealth from bondholders to shareholders by borrowing more debt and investing in risky projects. Fama and French (1998) as cited in Gill and Mathur (2011), argue that the use of excessive debt creates agency problems among shareholders and creditors. Myers (1977) as cited in Gill and Mathur (2011) explain that the agency costs of debt may cause firms to take riskier investment after the issuance of debt to expropriate wealth from the firm’s bondholders because the firm’s equity is effectively a stock option.

**Signaling Theory**Afza and Hussain (2011) consider debt as a way to highlight investors’ trust in the firm. If a firm issues debts, it provides a signal to the market that the firm is expecting positive cash flows in the future. Thus, the higher level of debt shows the confidence of the managers in future cash flows but another impact of the signal factor is the problem of under pricing of equity. If a firm issues equity instead of debt for financing its new projects, investors will interpret the signal negatively.

**Empirical Review**Demirgunes (2017) analyzed the possible asymmetric causal relationship between capital structure and firm value on a time series data of Turkish manufacturing industry for the period 1990Q1 to 2015Q4 and the result shows a unidirectional asymmetric causal relationship between capital structure and firm value, indicating that capital structure Granger causes firm value when shocks are negative, but not when shocks are positive. More explicitly decrease in total debt ratio leads to a decrease in market–to- book value ratio. Nikoo (2015) studied the impact of capital structure on banking performance in stock exchange of Tehran based on financial statements of Iranian banks for the period 2009 – 2014 and finds that capital structure has positive impact on bank performance. The significant levels are positive such as ROA, ROA, EPS and debt to equity (DTEQ).

Salawu (2007) carried out an empirical analysis of the capital structure of selected quoted companies in Nigeria for the period 1990 – 2004 using panel data pertaining to 50 non-financial firms and the results show that: all the firms’ leverage is negatively correlated to profitability; tangibility is positively correlated with total debts and long term debts, but negatively related to short term debts; growth opportunity is positively related to both total debts and short term debts; the size of the companies is positively correlated with total debts and short term debts suggesting that large firms can better support higher debt ratios than small firms. The empirical result shows that debt financing for listed companies in Nigeria corresponds mainly to a short term debt with a mean value of 60%. Ater (2017) studied capital structure and firm value of non-financial firms listed at the Nairobi securities using secondary data from 36 companies for the period 2011 to 2015. The results indicate that: there is a statistically significant relationship between the capital structure and value
of non-financial firms listed on the Nairobi securities exchange; long–term debt impacts positively on firm’s value just like equity capital.

Allahham (2015) studies the relationship between capital structure and bank financial performance for three years and finds mixed results for the relationship between capital structure (accumulated capital and annual investments) and profitability. The results indicate that: accumulated capital, on average, has no relationship with bank’s profitability; ii accumulated capital structure investments, on average, has no relationship with bank’s profitability; ii annual capital structure investments have negatively affected the strategic performance measures for 3 consecutive years, on average, increasing capital structure investments, results in a decrease in banks’ market share, effectiveness and investors valuation of banks’ stocks, but it has no effect on banks’ growth.

Uremadu and Efobi (2012) carried out a study on the impact of capital structure and liquidity on corporate returns in Nigeria; Evidence from manufacturing firms for the period 2002 – 2006 using financial statements of 10 selected firms and OLS analysis technique and find: i, negative and significant impact of value of long-term debts, ratios of long-term debts to total liability, ratios of short-term debt to total liability and equity to total liability on returns of firms; ii, positive and significant effect of domestic liquidity ratio, ratio of long-term debt to equity capital and value of short-term debt, on profitability, iii, overall, the results show that long-term debt values lead profits under normal OLS, followed by ratios of long-term debts to equity, short-term debt to total liability, and long-term debt to total liability in descending order of magnitude. Goyal (2013) studied the impact of capital structure on performance of listed public sector banks in India for the period 2008 to 2012 using regression analyses and finds a positive relationship of short-term debt with profitability as measured by ROE, ROA and EPS.

Mujahid, Zuberi, Rafiq, Sameen, and Shakoor, (2014) conducted a study on the impact of capital structure on banking performance for the period 2008 to 2012, utilizing data from banks and find a positive relationship between factors of capital structure and performance of banking industry. The significant levels are positive between dependent and independent variables used such as ROE, Earnings on assets (EOA), EPS and debt to equity.

Saeed, Gull and Rasheed (2013) studied the impact of capital structure on performance of Pakistan banks for the period of 2007 to 2011 utilizing data of banks listed in Karachi Stock Exchange and multiple regression models and find a positive relationship between long-term debt to capital ratio) short-term debt to capital ratio, total debt to capital ratio; and return on assets, return on equity and earnings per share. Rouf (2015) studied the effect of firm performance on capital structure for the listed 106 non-financial companies in Dhaka Stock Exchange for the period 2008 – 2011 under judgmental sampling method using multiple regression models and find that debt ratio, debt to equity ratio and proprietary of equity ratio have negative and significant relationship with ROA, and Return on Sales (ROS). Besides, the control variable - total asset is positively and significantly related with return on assets and return on sales.

Aggarwal and Padhan (2017) conducted a study on the impact of capital structure on firm value: Evidence from India Hospitality industry over a time frame of 2001 – 2015 using panel data and applying pooled OLS, fixed effects and random effects models. They find a significant relationship of firm value with firm quality, leverage, liquidity, size and economic growth. The study shows that M & M theorem of capital structure irrelevance does not hold for Indian hospitality sector.

Martis, (2013) studied a total of 474 companies listed on S&P 500 for the period 2003 – 2008 and 2003 – 2011 and finds: a strong and consistent negative link between leverage and return on assets. This evidence provides sufficient support for the pecking order theory, while the results of leverage on return on equity provide no conclusive results. Vatavu (2015) conducted a study on the relationship between capital structure and financial performance in 196 Romanian companies listed in the Bucharest Stock Exchange and operating in the manufacturing sector over the period 2003 – 2010 using cross sectional regression. The results indicate
that performance in Romanian companies is higher when they avoid debt and operate based on equity; shareholders’ equity has a positive impact on performance indicators, while total debt and short-term debt have negative relationship with ROA and ROE. Long-term debt shows coefficients with fluctuating signs and that indicates that Romanian manufacturing companies either do not use their assets effectively or do not have sufficient internal funding to undertake profitable investments. Inflation has a positive impact on ROA and taxes have a direct impact on performance indicators. Although higher taxation is expected to affect the net income, it seems that Romanian companies are more profitable when facing the tax burden, probably because they allocate their funds more effectively.

Siddik, Kabiraj and Joghee (2015) studied the impact of capital structure on performance of banks in Bangladesh using the panel data of 22 banks for the period of 2005 – 2014. The results of the pooled OLS show that capital structure inversely affects bank performance. All capital structure variables, viz TDTA, LTDTA and STDTA have significant inverse impact on ROA; ii, TDRA and STDTA have significant negative impact on ROE; iii, LTDTA and STDTA have significant negative impacts on EPS; iv growth opportunities, size, and inflation have positive association, whereas liquidity and GDP have negative impact on the performance of banks in Bangladesh.

Olokoyo (2012) studied capital structure and corporate performance of Nigerian Quoted Firms: A Panel data Approach for the period 2003 – 2007 using Panel data of 101 quoted firms as well as employing descriptive and econometric analytical tools. The results indicate that: a firm’s capital structure has a significant and negative impact on the firm’s ROA; ii, the leverage measures have a positive and highly significant relationship with the market performances measures (Tobin’s Q) which to some extent supports Myer’s (1977) argument that firms with high short-term debt to total assets have a high growth rate and high performance; size has positive and highly significant relationship with accounting performance measures and the market performance measures; tax has no significant influence on firm’s performance. Olufunso and Lombard (2010) studied the impact of the usage of debt on the profitability of small and medium enterprises in the Buffalo City Municipality in South Africa for the period 2005 – 2006 and find that; the usage of debt has a negative impact on their profitability. The regression results indicate a significantly negative relationship between profitability and debt financing.

Aremu, Ekpo, Mustapha and Adedoyin (2013) study the determinants of capital structure of 5 biggest banks in Nigeria for the period 2006 – 2010 using the pooled data and pooled OLS techniques in obtaining the estimates and find that the main determinant factors are mainly bank-size, dividend pay-out, profitability, tangible assets, growth, business risk and tax charge factors with all conforming to sign expectations on theoretical findings and previous empirical literature. Manawaduge, De-Zoya and Chandrakumara (2010) studied the implication of capital structure of corporate entities in an emerging market of Sri Lanka for the period of 2002 – 2010 using panel data regression analysis for a sample of 171 companies. The results demonstrate that most of Sri-Lankan firms finance their operations with short-term debt capital as against the long-term debt capital. They find that: i debt capital has a negative impact on firm performance; ii, there is a significant negative relationship between tangibility and performance, indicating inefficient utilization of non-current assets. ROA and OPOA have positive significant positive relationship with capital structure.

Rehman (2013) carried out a study on the relationship between financial leverage and financial performance in 35 Sugar companies of Pakistan for the period 2006 – 2011. The results show a positive relationship of debt-equity with return on assets and sales growth; and negative relationship with earning per share, net profit margin and return on equity. Gill and Mathur (2011) studied the factors that influence financial leverage of Canadian firms using a sample of 166 Canadian firms listed on the Toronto Stock Exchange for the period 2008 – 2010 and applying correlation and non experimental research design. The results show that; financial leverage of Canadian firms is influenced by the collateralized assets, profitability, effective tax rates, firm size, growth opportunities, number of subsidiaries and industry dummy. They specifically find that financial leverage is: i positively related to firm size, number of subsidiaries and industry dummy; ii negatively related to effective tax rates, growth opportunities of the Canadian firms and collateralized.
assets; iii positively related to profitability of Canadian service firms and iv negatively related to profitability of the Canadian manufacturing firms.

Tiwari and Krishmankathy (2010) conducted a study on the determinants of capital structure on 90 selected firms traded at the BSE Stock Exchange for the period 2002 – 2009 using Panel data methodology. The results reveal that there is a negative and statistically significant relationship between non-debt tax shield and size and debt; a positive and statically significant relationship between growth and ratio of fixed assets to total assets; insignificant positive relationship between profitability and debt. They also find a positively statistically significant relationship between asset structure and debt. This implies that the asset structure of the firm plays a dominant role in debt seeki

Research Methodology
This study employs ex post facto research design. Secondary data for the period 2012 - 2016 will be sourced from Audited Annual Report and Accounts of sampled commercial banks and CBN statistical Bulletins and Annual Reports. The population comprises of all commercial banks in Nigeria while the sample consists of 5 commercial banks selected through purposive / judgmental sampling technique.

Description of variables
The independent variables in this study are the capital structure variables of short-term debt to total equity (STDE), long-term debt to total equity(LTDE), and total debt to total equity (TODE), the control variables of bank size (SIZE) (proxied by natural logarithm of total assets). The dependent variables are the bank performance variables of return on equity( ROE), return on assets (ROA), earnings per share( EPS) which are individually employed in the models. The a priori expectations are LTDE (+), STDE (+), TODE (+) , SIZE (+ )

\[
\text{Return on Equity} = \frac{\text{Net profit attributable to ordinary shareholders}}{\text{Total shareholders' equity}}. \quad \text{This is an internal performance measure of shareholder value and is by far the most popular form of performance as (i) it proposes a direct assessment of the financial return of a shareholders' investment; and ii it is easily available for analysis; and relying upon public information; and iii it allows for comparison between different companies or different assets of the economy. It reveals how much profit a firm generates with money invested by shareholders.}
\]

\[
\text{Return on Assets (ROA)}: \quad \text{It is the net income for the year divided by total assets usually average value over the year. It measures the relative profitability of the business}
\]

\[
\text{Firm Size} = \text{Natural logarithm of banks value of assets} \quad (\ln \text{Book value of total assets})
\]

Different methods have been used by different scholars in measuring the size of a firm. According to Titman & Twite (2003), firm size is calculated as natural logarithm of total book value of assets. This is the definition adopted in this study.

\[
\text{Short-term debt to Equity ratio} = \frac{\text{short-term debt}}{\text{equity}}. \quad \text{This ratio measures the proportion of short-term debt to capital of the firm.}
\]

\[
\text{Total Debt to Equity Ratio} = \frac{\text{Total Debt}}{\text{equity}}. \quad \text{This ratio measures the proportion of total funds supplied by outsiders to the total amount of capital provided by the owners of the firm}
\]

\[
\text{Long-term Debt to Equity} = \frac{\text{Long-term debt}}{\text{equity}}. \quad \text{This ratio measures the proportion of long-term debt to owners’ capital}
\]

\[
\text{Earnings per Share} = \frac{\text{profit after tax divided by the number of ordinary shares outstanding. It indicates whether or not the firm’s earnings power on per-share basis has changed over the period.}}
\]

Model Specification
This study adapts the models used by Saeed, Gill and Rasheed (2013) with slight modification. The modification is the non-inclusion of asset growth among the control variables. The base model takes the following form:

\[ Y_{it} = \alpha + \beta X_{it} + \mu_{it} \]

Where: \( Y_{it} \) = dependent variable, \( \alpha \) = intercept, \( X_{it} \) = independent variable, \( \mu_{it} \) = error terms, \( i \) = number of firms, \( t \) = number of time periods.

The operational forms of the models are as follows:

MODEL 1: \[ \text{ROE} = B_0 + B_1 \text{STDE} + B_2 \text{LTDE} + B_3 \text{TODE} + B_4 \text{SIZE} + \mu \]

MODEL 2: \[ \text{ROA} = B_0 + B_1 \text{STDE} + B_2 \text{LTDE} + B_3 \text{TODE} + B_4 \text{SIZE} + \mu \]

MODEL 3: \[ \text{EPS} = B_0 + B_1 \text{STDE} + B_2 \text{LTDE} + B_3 \text{TODE} + B_4 \text{SIZE} + \mu \]

Where: \( B_0 \) = Intercept, \( B_1 \) + \( B_2 \) + \( B_3 \) + \( B_4 \) = coefficients of the explanatory variables, \( \mu \) = error term which represents omitted variables in the specified models.

Method of Data Analysis: This study employs Panel EGLS (Period random effects) method to estimate the three multiple regression models specified above. The regression models will be estimated with the aid of Eviews application software for windows version 9. The test of significance of the hypotheses is at \( p \leq 0.05 \). We reject the null hypotheses if the \( p \)-value is significant.

RESULTS AND DISCUSSIONS

Descriptive Statistics

<table>
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<tr>
<th>Table .2</th>
<th>ROE</th>
<th>ROA</th>
<th>EPS</th>
<th>TODE</th>
<th>LTDE</th>
<th>STDE</th>
<th>SIZE</th>
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<td>0.369478</td>
<td>1.066251</td>
<td>0.278943</td>
</tr>
<tr>
<td>Skewness</td>
<td>0.308066</td>
<td>0.211959</td>
<td>0.068384</td>
<td>0.549944</td>
<td>0.638405</td>
<td>0.685820</td>
<td>-0.004917</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>2.574279</td>
<td>2.694087</td>
<td>2.633346</td>
<td>2.451429</td>
<td>3.120222</td>
<td>2.425396</td>
<td>2.119736</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>0.584226</td>
<td>0.284677</td>
<td>0.159522</td>
<td>1.573631</td>
<td>1.713228</td>
<td>2.303713</td>
<td>0.807251</td>
</tr>
<tr>
<td>Probability</td>
<td>0.746684</td>
<td>0.867328</td>
<td>0.923337</td>
<td>0.455292</td>
<td>0.424597</td>
<td>0.316050</td>
<td>0.667894</td>
</tr>
<tr>
<td>Sum</td>
<td>448.4000</td>
<td>267.3500</td>
<td>55.80000</td>
<td>147.8400</td>
<td>18.33000</td>
<td>130.1500</td>
<td>368.6200</td>
</tr>
<tr>
<td>Sum Sq. Dev.</td>
<td>700.9320</td>
<td>35.88560</td>
<td>22.47520</td>
<td>27.21678</td>
<td>3.276344</td>
<td>27.28540</td>
<td>18.67424</td>
</tr>
</tbody>
</table>

Source: Computer output of the descriptive analysis results using EViews application software for windows, Version 9.

Table 4.2 is the descriptive statistics of the dependent and the independent variables used in this study. The summary statistics provided information about the mean, median, standard deviation (SD), minimum and maximum values of all the employed variables. The capital structure proxied by total debt to equity (TODE) revealed a mean value of 5.91, median of 5.86, and maximum value of 4.48. Long-term debt to equity (LTDE) showed a mean value of 0.73, median of 0.66, maximum value of 1.64 and minimum value of 0.12. Short-term debt to equity (STDE) revealed a mean of 5.21, median of 5.00, maximum value of 7.54 and minimum value of 3.85. The low values of the mean, median, maximum and minimum values of long term debt to equity are indications that the commercial banks have difficulties in raising long term debts during the period under study. This could be responsible for the huge short-term lending of the commercial banks.
as is evident by the high values of short term debt to equity. Mean is the average value of the series, median is the middle value of the series when the values are ordered from smallest to the largest. Out of the two, the median is a robust measure of the centre of the distribution that is less sensitive to outliers. Max and Min represent the maximum and minimum values of the series in the employed sample. Standard deviation measures dispersion in the series. Among the descriptive statistics, Jarque-Bera is the best for testing normality: the null hypothesis = Variable is normally distributed. Alternate hypothesis = variable is not normally distributed. At 0.05 level of significance, we reject the null hypothesis when the Jarque-Bera statistic is greater than 0.05. Jarque-Bera of 7.5406 and probability of 0.02 is below 0.05 indicating that the variables are normally distributed.

In order to understand the degree of association that exists between the dependent and the independent variables as well as among the explanatory variables, correlation analysis was carried out. Multicolinearity is carried out to check for the suitability of the explanatory variables. The correlation matrix is used to measure the presence of multicolinearity between the variables. High pair wise correlation between two variables means that there is a serious multicolinearity problem in the regression model. The level of high multicolinearity exists when the correlation between two variables exceed 0.8 (Gujarati & Porter, 2009). This shows that the regression cannot interpret the influence of independent variables towards dependent variable precisely (Gujarati & Porter, 2009).

From the table on correlation above, none of the pairs of correlation coefficients has high value upto 8. This indicates absence of multicolinearity.

Model estimation
Hausman test was conducted to determine whether fixed effects or random effects model would be suitable for the model estimation. The results showed that the coefficient of Hausman test was not significant in all the models. In this situation, random effects model would be preferred to that of the fixed effects model. The possible implication of the Hausman test result is that differences exist across banks which have some influences on the dependent variables. This study therefore adopted Panel EGLS (period random effects) in estimating the three models in this study.

Hypotheses Testing
The three hypotheses were tested at level of significance of 5% or at p- value of P≤ .05 . Accept the hypothesis if p- value of the t -statistic is significant at p≤ 0.05 .
Table 4.4 is used to explain the results of regression analysis for Model One. The R-squared for return on equity (ROE) is 0.189 which means that 19% of the sample describes ROE. The t-statistic explains the significance of the regression results. The results of the multiple regression analysis reveal an insignificant negative relationship among return on equity and TODE and SIZE and insignificant positive relationship with LTDE and STDE. The negative effects on total debts and size suggests that as commercial banks grow, they issue less of debts and more of equity. The positive relationship of ROE with LTDE and STDE implies that a proper mix of long-term debts and short-term debts with equity in the capital structure of banks can enhance the banks’ performance as revealed by ROE. The overall result of this model is that the capital structure of commercial banks has no significant effect on commercial banks’ performance as none of the t-statistics was significant.
### Table 5: Summary of Regression Results of Model Two

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TODE</td>
<td>1.149643</td>
<td>2.309106</td>
<td>0.497873</td>
<td>0.6240</td>
</tr>
<tr>
<td>LTDE</td>
<td>-1.526881</td>
<td>2.095181</td>
<td>-0.728758</td>
<td>0.4746</td>
</tr>
<tr>
<td>STDE</td>
<td>-1.033131</td>
<td>2.209309</td>
<td>-0.467626</td>
<td>0.6451</td>
</tr>
<tr>
<td>SIZE</td>
<td>1.366815</td>
<td>1.045761</td>
<td>1.307005</td>
<td>0.2060</td>
</tr>
<tr>
<td>C</td>
<td>-9.759948</td>
<td>14.92000</td>
<td>-0.654152</td>
<td>0.5205</td>
</tr>
</tbody>
</table>

#### Effects Specification

<table>
<thead>
<tr>
<th></th>
<th>S.D.</th>
<th>Rho</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period random</td>
<td>9.57E-06</td>
<td>0.0000</td>
</tr>
<tr>
<td>Idiosyncratic random</td>
<td>1.322374</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

#### Weighted Statistics

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>R-squared</td>
<td>0.147751</td>
<td>Mean dependent var</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>-0.022699</td>
<td>S.D. dependent var</td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>1.236598</td>
<td>Sum squared resid</td>
</tr>
<tr>
<td>F-statistic</td>
<td>0.866828</td>
<td>Durbin-Watson stat</td>
</tr>
<tr>
<td>Probt(F-statistic)</td>
<td>0.500820</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Computer output of Panel EGLS (Period random effects) done with the aid of EViews Application Software Version 9

Table 5 is used to explain the result of regressive analysis on the effect of capital structure on commercial bank’s performance. The result showed that total debt to equity (TODE) ratio and banks size (size) have insignificant positive relationship with return on assets (ROA) while long-term debt to equity (LTDE) and short-term debt to equity (STDE) have an insignificant negative relationship with return on assets (ROA). In other words, the capital structure has an insignificant effect on bank performance (proxied by return on assets).
Table 4.6: Summary of Regression Results of Model Three

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TODE</td>
<td>-0.797795</td>
<td>1.330418</td>
<td>-0.599658</td>
<td>0.5555</td>
</tr>
<tr>
<td>LTDE</td>
<td>0.615376</td>
<td>1.207162</td>
<td>0.509771</td>
<td>0.6158</td>
</tr>
<tr>
<td>STDE</td>
<td>0.178453</td>
<td>1.272919</td>
<td>0.140192</td>
<td>0.8899</td>
</tr>
<tr>
<td>SIZE</td>
<td>1.243913</td>
<td>0.602527</td>
<td>2.064494</td>
<td>0.0522</td>
</tr>
<tr>
<td>C</td>
<td>-12.77163</td>
<td>8.596326</td>
<td>-1.485708</td>
<td>0.1529</td>
</tr>
</tbody>
</table>

Effects Specification

<table>
<thead>
<tr>
<th>S.D.</th>
<th>Rho</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period random</td>
<td>6.69E-05</td>
</tr>
<tr>
<td>Idiosyncratic random</td>
<td>0.761901</td>
</tr>
</tbody>
</table>

Weighted Statistics

<table>
<thead>
<tr>
<th>R-squared</th>
<th>Adjusted R-squared</th>
<th>S.D. dependent var</th>
<th>Mean dependent var</th>
<th>2.232000</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.440398</td>
<td>0.328477</td>
<td>0.793006</td>
<td>0.967712</td>
<td>12.57718</td>
</tr>
<tr>
<td>F-statistic</td>
<td>3.934914</td>
<td>Durbin-Watson stat</td>
<td>1.214064</td>
<td>1.214064</td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>0.016275</td>
<td></td>
<td></td>
<td>0.016275</td>
</tr>
</tbody>
</table>

Source: Computer output of Panel EGLS (Period random effects) done with the aid of EViews Application Software Version 9

Table 4.6 is used to explain the outcome of regression analysis on the effect of capital structure on commercial banks’ performance (measured by earnings per share). R² was 0.4404 which means that the explanatory variables’ explain 44% of the variation in the dependent variable. F-statistic is 3.9349 and its probability of 0.0163 is significant at 5%. The results revealed that: TODE has insignificant negative relationship with EPS; LTDE and STDE have an insignificant positive relationship with EPS; while commercial bank size, which is a control variable, has a significant positive relationship with EPS. In then means that the present capital structure decisions of commercial banks have no significant effect on commercial banks’ performance proxied by earnings per share.

Summary of Findings, Conclusion and Recommendation

This study assessed the effect of capital structure on commercial banks’ performance for the period 2012 - 2016 and the findings are:

i). the capital structure variables of TODE, LTDE and STDE have no significant effect on return on equity which is a measure of bank performance.

ii). the capital structure variables of TODE, LTDE and STDE have no significant effect on return on assets which is a measure of commercial banks’ performance.

iii). the capital structure variables of TODE, LTDE and STDE do not have any significant effect on commercial banks’ performance measured by EPS.
iv). Commercial Bank’s size has a significant positive effect on its performance measured by EPS

**Conclusion**

The analysis of panel data of sampled commercial banks in Nigeria from 2012 - 2016 revealed that the capital structure decisions or policies of commercial banks do not have significant effect on their performance proxied by return on equity, return on assets and earnings per share. This might not be unconnected with the high usage of short-term debts as opposed to long-term debt which was observed during the period under study.

**Recommendations**

1). The management of commercial banks should adopt the right strategy to attract long-term funds as that would help them to finance long-term economic activities as well as improve on their earnings through savings from tax deductible interest, thereby improving the overall earnings and the return on equity. Maintaining a good track record and very good credit rating by reputable rating agencies can be part of the strategy to be adopted by the banks.

2). The government should endeavour to improve the depth and liquidity of the capital market to enable the capital market meet the rising demand for long-term funds by banks and other firms. The banks should also strive to maintain a balanced capital structure mix at all times.

3). The financial system, the economic system and commercial banks should always strive to uphold a policy of ensuring an adequate liquidity rating for there to be sustained increases in commercial banks growth and performance future years. High credit rating would make the commercial banks to be attractive to investors (i.e. providers of debt capital and equity).

4). Since the size of a commercial bank has a significant positive relationship with bank performance, the commercial banks should continually increase their operations through quality investments; proper project evaluation; ensuring capital adequacy and a right mix of debt and equity at all times.

**REFERENCES**


Tiwari, A.K., & Krishmankkutty, R. (2010). Determinants of capital structure: Comparison of empirical evidence for the use of different estimators. Retrieved from [http://mpra.ub.uni-muenchen.de/8612](http://mpra.ub.uni-muenchen.de/8612)
