

Influence of Financial Structure on Performance of Deposit Money Banks (DMBs) in Nigeria (2007-2022)

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Abstract

This study generally examined the Influence of Financial Structure on Deposit Money Banks (DMBs) Performance in Nigeria and specifically attempts to ascertain, explore and evaluate the extent to which short term debt to asset ratio, long-term debt to asset ratio and total debt to equity ratio respectively, affect the Return on Capital Employed (ROCE) of selected DMBs in Nigeria. This study adopted ex-post facto research design on a population thirteen (13) listed DMBs in Nigeria. Purposive sampling was used in selecting a sample size of four (4) deposit money banks. Secondary data were obtained from the annual reports of the selected banks for sixteen years covering the period of 2007 to 2022 which was subjected to descriptive analysis. Granger causality was deployed in exploring the causal relationships between the variables, Ordinary Least Square regression was deployed in testing the hypotheses of the study. The findings revealed that: short-term debt to asset ratio has a significant negative impact on the return on capital employed of selected DMBs in Nigeria (p -value = 0.000); long-term debt to asset ratio significantly and negatively affects the return on capital employed of deposit money banks in Nigeria (p -value = 0.000); total debt to equity ratio has a non-significant positive effect on the return on capital employed of selected DMBs in Nigeria (p -value = 0.1133). The study recommends that management of DMBs in Nigeria should prioritize maintaining a balanced mix of short-term and long-term debt in order to mitigate liquidity risks and ensure smoother cash flow management, ultimately enhancing financial performance.

Key Words: *Deposit Money Banks, Financial Structure, Equity, Debt, Return on Capital Employed*

INTRODUCTION

Financial structure is arguably the most topical issue in finance. In scholarly discussions, financial structure is used interchangeably with capital structure which constitutes the fundamental part of financial structure. Pandey (2018) differentiated between capital structure and financial structure of a firm by affirming that the various means used to raise funds represent the firm's financial

structure, while the capital structure represents the proportionate relationship between long-term debt and equity. A critical decision for any business organization is appropriate capital structure, not only because of the need to maximize returns to shareholders, but the ability to deal with its competitive environment. The prevailing argument, originally developed by Modigliani and Miller (2018), is that an optimal capital structure exists which balances the risk of bankruptcy with the tax savings of debt. Once established, this capital structure should provide greater returns to stockholders than they would receive from an all-equity firm. Modigliani and Miller Theory on Capital Structure triggered various studies on how the capital structure and performance. The nature and workings of the capital structure phenomenon are dynamic. Fundamentally, the capital structure of any firm describes the mix of debt and equity used to finance the operations of the firm (Shubita, 2018). However, in practice, the financial structure phenomenon is not just about debt and equity (Brealy, 2019). It is a mix of different securities (Abor, 2015). Various alternatives and combinations exist from which the firm can choose (Shubita, 2018). Lease financing, warrants, convertible bonds, forward contracts or trade bond swaps; amongst others, are examples of such alternatives (Abor, 2015). While managers retain discretion in choosing between debt and equity to finance the assets of the firm, they must make that choice with an informed perspective on how such a decision may affect the performance of the firm (Githire, 2015). This position becomes even more critical because there is a dearth of capital in developing countries; a challenge that drives firms to seek optimal ways of combining available debt and equity to either maximize shareholder wealth or to minimize Weighted Average Cost of Capital (WACC) or both (Ganiyu, 2015). The dependence of firms on the capital market to raise capital has continued to grow; given the explosion in liberalization and globalization of the global financial market (Azhagaiah & Gavoury, 2011).

Statement of the Problem

The Banking Supervision Department (BSD) of the Central Bank of Nigeria (CBN) has since 1990 noted that it is examiner's task to prevent bank failures by identifying bank problems at an early stage to allow for intervention or corrective action before the situation gets out of hand. In going about this task, bank examiners carry out appraisals of the quality of a bank's assets. Ahmed and Hassan (2017), studied the impact of Asset quality, Capital ratios, Operational ratios and Liquidity ratios on Financial Performance of Islamic Banks in the Middle East between 1994 and 2001. Their findings revealed that Capital Adequacy and Liquidity had significant impact on the Financial Performance of Islamic Banks. Kumbirai and Webb (2010), investigated the use of ratios in determining the Financial Performance of Banks in South Africa between 2005 and 2009. The research work revealed that Profitability (measured by ROA and ROE) had significant relationship with Financial Performance. However, that liquidity and Asset Quality does not have significant relationship with Financial Performance.

The Central Bank of Nigeria (2006), identified inadequate disclosure and transparency about financial position of Banks as one of the major factors in all known banks and financial institutions distress and eventual failure. Abiahu and Amahalu (2017), noted that there is no evidence of any early warning systems being used by regulators or bank management in the monitoring of banks in Nigeria. Dufera (2010), investigated the Financial Performance of the First Private Commercial Bank in Ethiopia between 2003 and 2009, using liquidity, profitability, credit risk, solvency and

efficiency employing financial ratios method. The researcher compared results with industry averages and found that only profitability had a significant relationship with Financial Performance. Chaudhuri and Chowdhury (2012), investigated on Financial Performance Evaluation-A Structural Equation approach using multiple indicators, multiple cause (MIMIC) variable model. The researchers discovered that only Liquidity in both Public and Private Bank has significant relationship with Bank Performance.

Amahalu, Abiahu and Obi (2017), observed that if banks are examined too frequently, valuable resources are wasted, whereas if problem banks are not examined often and early enough, the possibility of failure increased. It is therefore important that bank regulators identify banks that are likely to be unsound or that show signs of weakness before examination team are sent to the field. This will help in the optimal deployment of examination resources. On March 24, 2024 the CBN issued a circular to all commercial banks, merchant banks and non-interest deposit banks on review of minimum capital requirements for commercial, merchant and non-interest banks for the purpose of raising and maintaining adequate capital to enhance their resilience, solvency and capacity to support the growth of the Nigerian economy. This underscores the importance of capital to banks and consequently, throws up problem being studied here to find out the relationship between financial structure and financial performance of DMBs in Nigeria.

Study Objectives and questions

This study evaluates financial structure and financial performance of DMBs in Nigeria and specifically ascertains, investigates and examines the effect short term debt to asset ratio, long-term debt to asset ratio and total debt to equity ratio on Return on Capital Employed (ROCE) on selected DMBs in Nigeria. Research questions and null and alternate hypothesis are designed in line with the objectives.

Scope of the Study

The study concentrates on the financial structure and financial performance of DMBs in Nigeria, which are Access Bank, Wema Bank, Zenith Bank and Eco Bank. The study covered from 2007 - 2022 and findings are expected to improve the existing theories of financial structure and financial performance to the benefit of economic stakeholders.

Literature Concepts

Deposit Money Banks: A bank is a registered organisation licensed by CBN Governor under the Banks and Other Financial Institutions Act (BOFIA) to carryout banking business. DMBs are a vital and indispensable part of any economy and this explains the strict regulations and supervisions on them. Due to banks' significant influence on the economy, immense stress has been given on the regulation and supervision of the banking sector (Barth, Caprio & Levine, 2016). The poor performance of the banking sector has been attributed to several problems; such as inadequate capital, high non-performing assets and so on, which had gone ahead to frequent distress in the banking sector and collapse of some banks (Agbada & Osuji, (2013). The global financial crisis has generally influenced the financial position and performance of the global

banking industry. Banks capital play very important role in maintaining safety, solvency and liquidity of banks as well the security of banking system there safeguarding depositors funds and the economy at large. The high uncertainties in our business exacerbates banking risks which threatens their performance. Distinctively, the study intends to evaluate the financial structure and financial performance of DMBs in Nigeria, 2007-2022.

Financial Structure: This is the mix of debt and equity that a company uses to finance its operation, it can also be known as capital structure. The term financial or capital structure according to Kennon (2015) refers to the percentage of capital (money) at work in a business by type. There are two forms of capital: equity capital and debt capital. The various components of a firm's capital structure according to Inanga and Ajayi (2014) may be classified into equity capital, preference capital and long-term loan (debt) capital. The capital structure of a firm as discussed by Inanga and Ajayi (2018) does not include short-term credit, but means the composite of a firm's long-term funds obtained from various sources. Alfred (2016) stated that a firm's capital structure implies the proportion of debt and equity in the total capital structure of the firm. The prevailing argument, originally developed by Modigliani and Miller (2018), is that an optimal capital structure exists which balances the risk of bankruptcy with the tax savings of debt. Once established, this capital structure should provide greater returns to stock holders than they would receive from an all-equity firm. Therefore, a firm's capital structure is described as the capital mix of both equity and debt capital in financing its assets. Akintoye (2014) posited that critical decision for any business organization is a decision for an appropriate capital structure.

Return on Capital Employed: It is a financial ratio companies use to gauge their performance. It is an indicator of company efficiency, because it measures the company profitability after factoring in the capital used to achieve that profitability.

Firm Performance

The word "Performance" originates from the old French word 'Parfournir'; whose meaning is to bring through, to carry out, to do or to bring forth (Farah & Farrukh, 2016). Performance is an act of performing, implementing, achieving, and fulfilling of the given tasks that needs to be measured against defined sets of precision. These performance of any firm are reflected in the firm's return on investment, assets, equity, capital employed and profitability. Return on Equity (ROE), Return on Assets (ROA), Profit before Tax and Net Interest Margin (NIM) are used to calculate financial efficiency. Akinyomi (2016) finance and financing decision of the firms should be guided to enable them attain the expected optimal Capital structure level in order to enhance corporate performance and maximize the value of the firms. The fundamental claim is that most capital structure issues are similar across regions and economies irrespective of the institutional differences which call for empirical evidence to prove the claim or otherwise. Chandrasekharan (2012) was of the opinion that firms need to substitute debt for equity or equity for debt and adjusting this until it reaches a level of maximization of value of the firm. Owualah (2016) in his own debate on optimal capital structure, opines that debate has shifted from whether they exist to determining the optimal capital structure for any particular firm as well as understanding the underlying influences to the firm's performance. These underlying influence on firms he claims, differ from country to country. Oladeji and Olokoye (2018), the assumption of the wealth maximization rule is that there exists an optimal capital structure level for a firm which is the level where risk of venturing into external

funding through allowing for sharing of earnings commensurate with the return on equity which varies constantly, hence the need to identify the effects of the potential determinants of capital structure on corporate performance.

The concept of performance is subjective as there are various measures of firm performance. Performance measures may assess areas such as profitability, liquidity, efficiency, investment attractiveness, and so on. How researchers choose to measure performance is dependent on the objective of their studies, empirical backing from extant literature and preferred theoretical underpinning. However, in practice, firms select performance measures in line with corporate strategic objectives and general industry standards. Some studies have observed that gearing ratio of most companies do have effect on their performances in the sense that if the gearing ratio keeps rising the tendency of its profit growing might not be visible for a particular period (Ozkan, 2016).

Managing risk and increasing profitability of a firm within the corporate governance compliance is an essence of making good decisions. In order to take timely decision, accurate information and proper analysis of the sector is necessary (Farah & Farrukh, 2016). ROA shows how management generate income from the assets of the banks (Anarfo & Appiahene, 2017). This paper provides empirical evidence for existing determinants of capital structure theories and the effects on corporate performance and thus contributes toward proffering solutions to the above-mentioned literature problem (Alfred; 2016).

Debenture

Debenture is an acknowledgement of corporate medium to long term debt through certificates for a fixed period of time and at a fixed rate of interest. Debenture holders are issued with certificates. Such a loan certificate is called a debenture (Phillips, 2016). Most debentures are secured or backed by the borrower's reputation, credit worthiness or history of the issuer while some are based on the borrower's assets or collateral. They are sometimes called revenue bonds because they may be expected to be paid for out of the proceeds of a new business project (Ibenta, 2019).

Bonds

These are stocks sold at the capital market by governments, government parastatals, government companies and limited liability corporations at a fixed interest rate at a specified number of years. Bonds are secured type of investment because of the credibility of its primary obligor. The Nigerian capital market has been characterized in recent times by bonds mostly sold to investors, government and corporate bodies which boost the confidence of these investors coming into the market to purchase these bonds. Therefore, Osiegbu, Nwakanma, and Onuorah (2016) suggested that bonds as demanded highly boost the performance and liquidity of companies in growing the profit of these companies. According to Ibenta (2019), a bond is a written promise by a business firm to pay a specific sum of money at a specific date to the bearer or registered holder of the bond. It is a documentary promise issued by a public company or a government and which resembles other promissory notes. Helfert (2018) submitted that bond constitutes a part of an elaborate contract or agreement between the issuing business firm and the bond holder.

Theoretical Review

Many theories are related to the study topic including the Agency Cost Theory of Capital Structure, the Pecking Order Theory of Capital Structure, the Free Cash Flow Theory of Capital Structure etc. This paper is however anchored on the Pecking Order Theory of Capital Structure because its better suitability for the financial structure and financial performance of DMBs in Nigeria. **The pecking order theory** of capital structure as introduced by Donaldson (1961) is among the most influential theories of corporate leverage. It disagrees that firms having a unique combination of debt and equity finance minimizes their cost of capital. It is the main contender to the trade-off theory; it suggests that actual corporate leverage ratios typically do not reflect capital structure targets, but rather the widely observed corporate practice of financing new investments with internal funds when possible and issuing debt rather than equity if external funds are required. In the pecking order model, an equity offering is typically regarded as a very expensive last resort. Chaplinsky and Niehaus (2013) suggest that when a firm is looking for ways to finance its long-term investments, it has a well-defined order of preference with respect to the sources of finance it uses. It states that a firm's first preference should be the utilization of internal funds (i.e., retained earnings), followed by debt and then external equity. (Huang and Song, 2015), argued that the more profitable the firms become, the lesser they borrow because they would have sufficient internal finance to undertake their investment projects.

Pecking Order theory tries to capture the costs of asymmetric information which states that companies prioritise their sources of financing (from internal financing to equity) according to the principle of least effort, or of least resistance, preferring to raise equity as a financing means of last resort (Chaplinsky and Niehaus; 2013). Hence, internal funds is used first, and when that is exhausted, debt is issued, and when it is not sensible to issue any more debt, equity is issued. Pecking Order Theory captures the effect of asymmetric information upon the mispricing of new securities, which says that there is no well-defined target debt ratio (Myers & Majluf; 2011). They opined that investor generally perceive that manager are better informed of the price sensitive information of the firms. Investors' perception is such that managers issue risky securities when they are overpriced. This perception of investors leads to the under-pricing of new equity issue. Sometimes this under-pricing becomes so severe that it causes substantial loss to the existing shareholders. To avoid the problem arising from information asymmetry, firms usually fulfil their financing needs by preferring retained earnings as their main source of financing, followed by debt and finally external equity financing as the last resort (Chaplinsky and Niehaus; 2013).

Damodaran (2013), posited that when managers issue new equity it is generally an indication to investors that the company is overvalued. However, investors are aware of this information asymmetry and will react negatively to issuing announcements, making them less keen on financing new equity without price reductions. Consequently, this will drive managers either towards missing positive NPV investments or issuing excessively high debt levels that may threaten the future of the company. These contradictions lead the following arguments. First, internal funds in form of retained earnings are more favourable than external equity. Second, financial slack, i.e., disposal of real assets, cash or marketable securities, is possible. Lastly, debt is more attractive than equity, simply because it is cheaper and less risky (Myers, 2014).

Empirical Review

Using a study of five quoted firms within a period of nine years (1999-2007) from the static trade-off and agency cost theory point of view, Simon-Oke and Afolabi (2018), Investigated Capital structure and industrial performance in Nigeria. They employed the panel data regression model and revealed a positive relationship between firms' performance and equity financing as well as between firms' performance and debt-equity ratio as well as a negative relationship between firms' performance and debt financing.

Nwankwo (2018), Investigated on the study Implication of capital structure on the financial performance of Deposit Money Bank in Nigeria, using ten firms listed on the Nigerian Stock Exchange for a period of five years (2006-2010) from the static trade-off, pecking order and agency theory point of view. He employed the ImPesaran and shines unit root test and Panel Least Square test and found that the sampled firms were not able to utilize the fixed asset composition of their total assets judiciously to impact positively on their firms' performance. In Pakistan, Abdul (2018), examined Capital structure and the financial performance of deposit-taking savings and credit cooperative societies in Pakistan using 36 engineering sector firms in Pakistani market listed on the Karachi Stock Exchange (KSE) during the period 2003-2009 applied Pooled Ordinary Least Square regression. His study revealed that financial leverage measured by short term debt to total assets (STDTA) and total debt to total assets (TDTA) has a significant negative relationship with the firm performance measured by Return on Assets (ROA), Gross Profit Margin (GM) and Tobin's Q. The relationship between financial leverage and firm performance measured by the return on equity (ROE) is negative but insignificant. Asset size has an insignificant relationship with the firm performance measured by ROA and Gross Margin but negative and significant relationship exists with Tobin's Q. Firms in the engineering sector of Pakistan are largely dependent on short term debt but debts with strong covenants that impact on the performance of the firm.

Semiu and Collins (2015), examined the capital structure and its market value in Nigeria, using a sample size of 150 respondents and 90 firms for both primary data and secondary data respectively for a period of five years (2005-2009) from the relevance, pecking order, the free cash flow, the agency cost and the trade-off theory point of view. They employed the descriptive statistics and Chi-square analysis and suggested that a positively significant relationship exists between a firm's choice of capital structure and its market value in Nigeria. Ong and Teh (2015) investigated on the capital structure and firms' performance of construction companies for a period of four years (2005-2008) in Malaysia. Long term debt to capital, debt to asset, debt to equity market value, debt to common equity, long term debt to common equity were used as proxies as the independent variables (capital structure) while returns on capital, return on equity, earnings per share, operating margin, net margin were used to proxy the corporate performance. The result showed that there is relationship between capital structure and corporate performance.

Osaze (2015) conducted research on the financial structure and financial performance of Nigeria listed firms, using 87 firms out of the population of 216 firms listed on the Nigeria stock exchange

for a period of five years (2007-2011) from static trade-off, agency and pecking order theory point of view. The researcher used the panel multiple regression analysis and the study revealed that for the Nigerian listed firms; firms' size, growth and age are significant with the debt ratio of the firm, whereas, profitability and tangibility are not of short-term debt ratio for the firms under investigation. In Sri Lanka, Gang (2014) carried out an investigation on capital structure and financial performance of some selected companies in Colombo Stock Exchange from 2005-2009. Capital structure was surrogated by debt while performance was proxied by gross profit, net profit, return on investment / capital employed and returns on assets. He found a negative relationship between the capital structure and financial performance.

Babalola (2014), conducted research on the Theoretical review analysis of capital structure and firms' performances, using 31 manufacturing firms with audited financial statements for a period of fourteen years (1999-2012) from static trade-off point of view. He employed the triangulation analysis and his study exposed that capital structure is a trade-off between the costs and benefits of debt, and it has been refuted that large firms are more inclined to retain higher performance than middle firms under the same level debt ratio. Akinyomi (2013), investigated on the determinants of capital structure in Nigeria, using three manufacturing companies selected randomly from the food and beverage categories and a period of five years (2007-2011) using the static trade-off and the pecking order theory point of view and employing correlation analysis method disclosed a significant relationship between capital structure and financial performance. Bassey (2013), investigated the Analysis of the determinant of capital structure using a sample of 60 unquoted agro-based firms in Nigeria within a period of six years (2005-2010) from the agency cost theory point of view. He employed the Ordinary Least Square regression and descriptive statistics and revealed that only growth and educational level of firm's owners were significant determinants of both long- and short-term debt ratios, assets structure, age of the firms, gender of owners and export status impacted significantly on long term debt ratios, while business risk, size and profitability of firms were major determinants.

In Jordan, Zeitun and Tian (2013), conducted a study on capital structure and corporate performance on 167 Jordanian firms from 1989-2003. They found a significantly negative relationship between capital structure and corporate performance. Khalaf (2013) examined the determinant of capital structure using a sample of 45 manufacturing companies listed on the Amman Stock Exchange for the study that covered a period of five (5) years from 2005-2009. Multiple regression analysis was applied on performance indicators such as Return on Asset (ROA) and Profit Margin (PM) as well as Short-term debt to Total assets (STDTA), Long term debt to Total assets (LTDTA) and Total debt to Equity (TDE) as capital structure variables. The results show that there is a negative and insignificant relationship between STDTA and LTDTA, and ROA and PM; while TDE is positively related with ROA and negatively related with PM. STDTA is significant using ROA while LTDTA is significant using PM.

While some studies have shown evidence of a positive relationship between leverage and firm performance (Esiemogie et al., 2014; Amin & Jamil, 2015; Muturi, 2015; Shaba et al., 2016); other studies, such as Abor (2005), Zeitun and Tian (2007), found a negative empirical relationship

between capital structure and firm performance. Studies by Bancel and Mittoo (2004); Jong et al. (2008); Psillaki and Daskalakis, (2009); Erotis, et al. (2011); have expanded to examined the firm and country determinants of capital structure. Furthermore, as a result of the far-reaching implications of capital structure decisions, other studies have examined how it relates to other burning contemporary issues in the field of corporate finance, such as corporate governance (Jiraporn & Gleason, 2007; Bokpin and Arko, 2009; Butt and Hasan, 2009; Saad, 2010; Jiraporn et al., 2012; Morellec et al., 2012); earnings management (Ali et al., 2008; Naz et al., 2011; Rahmani & Akbari, 2013; An et al., 2016); and dividend policy (Aggarwal & Kyaw, 2010; Mirza & Azfa, 2010; Al-Najjar, 2011).

Research Design

This study adopted *ex-post facto* research design; examining how independent variables present prior to the study, affect the dependent variable. The design ideally fits the work as it is not possible or permissible to manipulate the characteristics of the variables under investigation.

Population of the Study and Data Source

The population of the study comprised all the 13 listed DMBs in Nigeria as at 31st December, 2022. The population studied are Access Bank Plc, Fidelity Bank Plc, First City Monument Bank Plc, First Bank Nigeria, Guaranty Trust Bank Plc, Union Bank of Nigeria Plc, United Bank of Africa Plc, Zenith Bank Plc, Ecobank Nigeria Plc, Stanbic Ibtc Bank Plc, Sterling Bank Plc, Unity Bank Plc, Wema Bank Plc. The data used in this study were obtained from 2007 to 2022. The data sourced include total asset, operating profit, total liabilities, equity, current debts and noncurrent debt and four ratios used in the study which are: short-term debt to asset ratio, long-term debt to asset ratio, total debt to equity ratio and return on capital employed.

Model Specification and Validity

The model for this study is an adaptation from the works by Chandra and Juliawati (2020) that examined the effects of long term debt to total assets, short term debt to total assets, total asset turnover, and inventory turnover on profitability of manufacturing companies in consumer goods subsector listed in Indonesia. Their model is as follows:

$$\text{PROF} = a + \beta_1\text{LTA} + \beta_2\text{STA} + \beta_3\text{TAT} + \beta_4\text{INT} + e \dots \dots \quad \text{eq1}$$

Where:

PROF = Profitability

a = Constant

β = Regression coefficient of each independent variable

LTA = Long Term Debt to Assets Ratio

STA = Short Term Debt to Assets Ratio

TAT = Total Assets Turnover

INT = Inventory Turnover

e = Standard Error

We modified their above model to suit the specific variables of our own study thus:

$$ROCE_{it} = a_0 + \beta_1 STA_{it} + \beta_2 LTA_{it} + \beta_3 TDE_{it} + e_{it} \quad \dots\dots \quad eq2$$

Where;

ROCE_{it} = Return on capital employed of bank *i* in year t

STA_{it} = Short-term debt to total asset of bank *i* in year t

LTA_{it} = Long-term debt to total asset of bank *i* in year t

TDE_{it} = Total debt to equity of bank *i* in year t

Table 1: Variables of the Study

Variables	Types of Variables	Description and Measurement
Return on Capital Employed (ROCE)	Dependent	$\frac{\text{Operating Profit}}{\text{Capital Employed}}$
Short-term debt to asset ratio (STA)	Independent	$\frac{\text{Current Liabilities}}{\text{Total Asset}}$
Long-term debt to asset ratio (LTA)	Independent	$\frac{\text{Noncurrent Liabilities}}{\text{Total Asset}}$
Total debt to equity ratio(TDE)	Independent	$\frac{\text{Total Liabilities}}{\text{Total Equity}}$

Source: Researcher, 2024

Table 2: The Apriori Relationship Expectation

Variables	Expected Signs
STA and ROCE	(+)
LTA and ROCE	(+)
TDE and ROCE	(+)

Source: Researcher, (2024)

Method of Data Presentation and Analysis

The data of the study was structured into a table and subjected to analysis employing both the Ordinary Least Square (OLS) regression method and the Granger causality test. The choice of the OLS method was driven by its alignment with the assumptions underlying the study's data, enabling a thorough exploration of the relationships between the variables. Concurrently, the Granger causality test identified interdependencies among the variables. All statistical calculations were performed utilizing E-views Statistical Software 11.

Table 3: Descriptive Statistics

	ROCE	STA	LTA	TDE
Mean	-0.127290	0.344399	0.545711	10.54821
Median	0.027377	0.067087	0.771845	6.852480
Maximum	0.148943	1.824878	1.283853	191.2096
Minimum	-10.32289	0.005837	-0.894765	-4.138209
Std. Dev.	1.295280	0.400172	0.392871	23.45837
Skewness	-7.800051	1.075862	-0.939008	7.305640
Kurtosis	61.90120	3.844946	3.854342	56.74204
Jarque-Bera	9900.571	14.25028	11.35158	8271.190
Probability	0.000000	0.000805	0.003428	0.000000
Sum	-8.146537	22.04154	34.92550	675.0852
Sum Sq. Dev.	105.6982	10.08866	9.723895	34668.58
Observations	64	64	64	64

Source: *Eviews 11.0 Descriptive Statistics Output, 2024*

Return on Capital Employed (ROCE) has a mean value of -0.127290, indicating that on average, the ROCE is negative. The maximum ROCE observed is 0.148943, while the minimum is -10.32289, suggesting a wide range of variation. The standard deviation of 1.295280 reflects considerable dispersion around the mean. The skewness value of -7.800051 indicates a severe left skewness, implying that the distribution is heavily skewed towards lower values. The high kurtosis value of 61.90120 suggests a very peaked distribution with heavy tails, indicating significant outliers or extreme values. The probability of Jarque-Bera test being 0.000000 further confirms that the ROCE distribution significantly deviates from normality.

The average Short Term Debt to Asset Ratio (STA) is 0.344399, suggesting that, on average, short-term debt forms a significant proportion of assets. The maximum STA observed is 1.824878, indicating instances where short-term debt exceeds total assets, while the minimum is 0.005837. The standard deviation of 0.400172 suggests considerable variability around the mean. The positive skewness of 1.075862 indicates a slight right skewness, suggesting that the distribution is slightly skewed towards higher values. The kurtosis of 3.844946 indicates a moderately peaked distribution with some outliers. The probability of Jarque-Bera test being 0.000805 indicates departure from normality.

For Long-Term Debt to Asset Ratio (LTA), the mean is 0.545711, suggesting that, on average, long-term debt constitutes a substantial portion of assets. The maximum LTA observed is 1.283853, while the minimum is -0.894765. The standard deviation of 0.392871 reflects moderate variability around the mean. The negative skewness of -0.939008 suggests a slight left skewness, indicating the distribution is somewhat skewed towards lower values. The kurtosis of 3.854342 indicates a moderately peaked distribution with some outliers. The probability of Jarque-Bera test being 0.003428 suggests some departure from normality.

The descriptive statistics for the Total Debt to Equity Ratio (TDE) reveal that, with a mean of 10.54821 and a maximum of 191.2096, the average and maximum ratios indicate substantial leverage among the studied companies. However, the minimum ratio of -4.138209 suggests potential data anomalies. The standard deviation of 23.45837 highlights considerable variability in TDE across the sample. Moreover, the positive skewness of 7.305640 indicates a right-skewed distribution, implying the presence of outliers with exceedingly high debt levels relative to equity. The high kurtosis of 56.74204 signifies a peaked distribution with heavy tails, while the Jarque-Bera statistic of 8271.190 and the associated probability of 0.000000 indicate a significant departure from normality, suggesting non-normal distribution characteristics within the dataset.

Data Analysis

The data were analysed using the Ordinary Least Squares (OLS) regression and the Granger Causality test. While the Granger causality was deployed in exploring the causal relationships between variables, OLS was deployed in testing hypotheses of the study.

Table 4: Granger Causality Test

Pairwise Granger Causality Tests

Date: 02/24/24 Time: 15:42

Sample: 1 64

Lags: 1

Null Hypothesis:	Obs	F-Statistic	Prob.
STA does not Granger Cause ROCE	63	1.07627	0.3037
ROCE does not Granger Cause STA		7.58066	0.0078
LTA does not Granger Cause ROCE	63	1.27430	0.2635
ROCE does not Granger Cause LTA		9.32230	0.0034
TDE does not Granger Cause ROCE	63	0.04043	0.8413
ROCE does not Granger Cause TDE		0.25636	0.6145

Source: *Eviews 11.0 Regression Output, 2024*

The Granger Causality Tests examined the temporal precedence and predictive relationship between variables. The results suggest a unidirectional relationship between STA and ROCE. Specifically, the p-value associated with the null hypothesis that STA does not Granger Cause ROCE is 0.3037, indicating no significant evidence to reject this hypothesis. However, the reverse hypothesis, indicating whether ROCE Granger Causes STA, presents a notably lower p-value of 0.0078, suggesting statistical significance. This implies that while past values of STA do not significantly predict future ROCE, past values of ROCE do contribute significantly to predicting future STA, indicating a potential causal relationship where ROCE influences short-term debt management decisions within DMBs in Nigeria.

A similar unidirectional relationship emerges between LTA and ROCE. The p-value for the null hypothesis that LTA does not Granger Cause ROCE is 0.2635, indicating no significant evidence against this hypothesis. Conversely, the reverse hypothesis presents a lower p-value of 0.0034, indicating statistical significance. This suggests that past values of ROCE significantly contribute to predicting future LTA, implying a causal relationship where the financial performance of deposit money banks influences their long-term debt management strategies. However, the reverse relationship, where LTA influences ROCE, is not supported by the data.

Finally, the Granger Causality Tests reveal no significant evidence of causality between TDE and ROCE in either direction. Both the p-value associated with TDA Granger Causing ROCE (0.8413) and the reverse hypothesis (ROCE Granger Causing TDA) (0.6145) are notably high, suggesting a lack of statistically significant causality between these variables. Therefore, the analysis does not support a directional relationship between total debt management and financial performance, indicating that past values of ROCE may not be significant predictors of future TDA, and vice versa, within the context of DMBs in Nigeria.

Ordinary Least Square Regression

The Ordinary Least Squares (OLS) regression estimates shows the relationship between financial structure variables and Return on Capital Employed (ROCE) in selected DMBs in Nigeria. The output of the OLS regression is shown below in Table 4.4.

Table 5: OLS Regression Estimates

Dependent Variable: ROCE
 Method: Least Squares
 Date: 02/24/24 Time: 15:36
 Sample: 1 64
 Included observations: 64

Variable	Coefficient	Std. Error	t-Statistic	Prob.
STA	-9.028809	1.250351	-7.221019	0.0000
LTA	-8.868992	1.276465	-6.948091	0.0000

TDE	0.008451	0.005258	1.607248	0.1133
C	7.732982	1.119626	6.906756	0.0000
R-squared	0.467890	Mean dependent var		-0.127290
Adjusted R-squared	0.441285	S.D. dependent var		1.295280
S.E. of regression	0.968186	Akaike info criterion		2.833677
Sum squared resid	56.24307	Schwarz criterion		2.968607
Log likelihood	-86.67766	Hannan-Quinn criter.		2.886833
F-statistic	17.58622	Durbin-Watson stat		2.418571
Prob(F-statistic)	0.000000			

Source: *Eviews 11.0 Regression Output, 2024*

With R-squared value of 0.467890, approximately 46.79% of the variation in ROCE can be explained by the variation in the independent variables. This suggests that the model captures a substantial portion of the variability in ROCE, indicating a reasonably good fit. The Adjusted R-squared value is slightly lower at 0.441285 indicating that the independent variables collectively explain a significant portion of the variance in ROCE. The F-statistic is 17.58622 with a p-value of 0.000000 indicating a strong evidence against the null hypothesis, suggesting that the regression model is statistically significant in explaining the variation in ROCE meaning that the independent variables collectively have a significant impact on the financial performance of deposit money banks in Nigeria. Durbin-Watson statistic at 2.418571 is close to 2, indicating no substantial autocorrelation in the model's residuals. This confirms independence among the residuals are therefore enhances the reliability of the regression estimates.

Accepted Hypothesis

Hypothesis One (STA)

Ho1: Short term debt to asset ratio does not significantly affect the return on capital employed (ROCE) of selected DMBs in Nigeria.

Short-Term Debt to Asset Ratio (STA) has a negative coefficient of -9.028809 which indicates that, holding other variables constant, a one-unit increase in STA is associated with a decrease in ROCE by approximately 9.03 units. This coefficient is statistically significant with a p-value of 0.0000, suggesting strong evidence to accept the alternate hypothesis. Therefore, it can be concluded that short-term debt to asset ratio has a significant negative impact on the return on capital employed of selected DMBs in Nigeria (p -value = 0.000).

Hypothesis Two (LTA)

Ho2: Long-term debt to asset ratio does not significantly affect the return on capital employed (ROCE) of selected DMBs in Nigeria.

Long-Term Debt to Asset Ratio (LTA) has a negative coefficient of -8.868992 which suggests that, all else being equal, a one-unit increase in LTA leads to a decrease in ROCE by approximately 8.87 units. Similar to STA, this coefficient is highly significant with a p-value of 0.0000, providing robust evidence to accept the alternate hypothesis. Consequently, it is concluded that long-term

debt to asset ratio significantly and negatively affects the return on capital employed of deposit money banks in Nigeria (p -value = 0.000).

Hypothesis Three (TDE)

Ho3: Total debt to equity ratio does not significantly affect the return on capital employed (ROCE) of selected deposit money banks in Nigeria.

However, when examining Total Debt to Equity Ratio (TDE), the coefficient of 0.008451 indicates that a one-unit increase in TDE is associated with a very small increase in ROCE by approximately 0.0085 units, although this coefficient is not statistically significant at 0.05 significance level (p -value = 0.1133). This is because the p -value is greater than 0.05. As a result, we accept the null hypothesis that total debt to equity ratio has a non-significant positive effect on the return on capital employed of selected DMBs in Nigeria (p -value = 0.1133).

Discussions of the findings

The study revealed that short-term debt to asset ratio has a significant and negative effect on the return on capital employed of selected DMBs in Nigeria. This finding suggests that relying heavily on short-term debt instruments to finance assets may not be conducive to optimal financial performance. This result agrees with the findings by Abdul (2018) and Khalaf (2013) but disagreed with those by Saeed, Gull and Rasheed (2013); Chandra and Juliawati (2020); Akinyomi (2013). The study found that a higher long-term debt to asset ratio significantly and negatively affects the return on capital employed of DMBs in Nigeria see Chandra and Juliawati (2020); Khalaf (2013), Simon-Oke & Afolabi (2018) and Akinyomi (2013). Contradicting result was found by Saeed, Gull and Rasheed (2013) that total debt to equity ratio has a positive but non-significant effect on the return on capital employed of selected DMBs in Nigeria. This result implies that a moderate level of leverage, as indicated by the total debt to equity ratio, can enhance a bank's financial performance. Debt financing allows banks to amplify returns on equity capital by leveraging borrowed funds to invest in income-generating assets or pursue growth opportunities. However, it is essential to maintain a balance, as excessive leverage can increase financial risk and erode shareholder value.

Conclusion

The financial structure of DMBs is essential in determining their overall financial performance. In Nigeria, where the banking sector is the chief driver of the economy, financial structure influence performance metrics is imperative for both regulators and market participants. This study was motivated in order to investigate the effect of financial structure on the financial performance of selected DMBs in Nigeria. The findings revealed the relationship between various debt ratios and the return on capital employed (ROCE) of these banks. The negative impact of short-term debt to asset ratio on ROCE suggests that heavy reliance on short-term debt may constrain a bank's ability to generate returns on its capital employed. Thus, a high short-term debt ratio could indicate a vulnerability to fluctuations in interest rates or unexpected liquidity demands, ultimately detracting from ROCE. Also, the negative relationship between long-term debt to asset ratio and ROCE implies that an excessive reliance on long-term debt may hinder the profitability of DMBs in Nigeria. By implication, a high long-term debt ratio could lead to financial inflexibility,

constraining the bank's ability to adapt to evolving circumstances and potentially eroding ROCE over time. Lastly, the positive effect of total debt to equity ratio on ROCE suggests that a moderate level of leverage, as indicated by a balanced debt-to-equity ratio, may enhance the profitability of DMBs in Nigeria. Concluding, the findings of this study asserts the significance of prudent financial management and the careful consideration of debt structure in driving the financial performance of DMBs in Nigeria. While moderate levels of debt may be beneficial, excessive reliance on short-term or long-term debt may pose challenges to profitability and financial stability. Balancing between debt and equity financing is required to optimize banks' return on capital employed and ensure sustainable growth in the dynamic banking setting of Nigeria and this is in consonance with the Pecking Order Theory and the Capital Structure Theory.

Recommendations

The study recommends as follows:

- 1) That in view of the negative impact of high short-term debt to asset ratios on return on capital employed, the management of DMBs should pursue maintaining a balanced mix of short-term and long-term debt in order to mitigate liquidity risks and ensure smoother cash flow management, ultimately enhancing financial performance.
- 2) That DMBs should closely monitor and regulate the levels of long-term debt undertaken by the banks by implementing robust debt management policies and conducting regular assessments of debt servicing capabilities which can help mitigate solvency risks and safeguard the banks' financial health because high long-term debt to asset ratios have adverse effects on return on capital employed.
- 3) That financial analysts and investors evaluate DMBs based on their leverage levels since banks maintaining a moderate level of leverage, as indicated by the total debt to equity ratio, may present attractive investment opportunities due to its positive effect, thereby demonstrating a balance between risk and return in their financial operations.

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