

Impact of COVID-19 Pandemic on Capital Structure and Profitability of Listed DMBs in Nigeria

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ABSTRACT

This study explores the impact of the COVID-19 pandemic on capital structure and profitability of listed deposit money banks (DMBs) in Nigeria. The main objective is to examine the extent to which debt-equity affects profitability proxies (Return on Asset and Tobin's Q) of listed DMBs in Nigeria due to the pandemic. Secondary data were used, analyzed with panel regression. Findings revealed that capital structure did not significantly influence profitability proxies before or during the pandemic, but post-pandemic. capital structure significantly affected Tobin's Q. The study concludes that the pandemic altered DMBs' capital structure strategies and profitability due to economic uncertainty, loan defaults, and interest rate pressures.

Keywords: Capital structure, profitability, COVID-19, DMBs, Nigeria.

INTRODUCTION

Capital Structure (CS) refers to the mix of financing sources, including debt and equity, hybrid security, and debt-equity swap, that a bank uses to fund its operations and growth. CS plays a pivotal role in the financial stability and profitability of DMBs. Understanding how changes in CS affect profitability is essential, especially in the context of significant economic events like the COVID-19 pandemic. The banking sector plays a pivotal role in the economic stability and growth of any nation, and Nigeria is no exception. The COVID-19 pandemic brought forth a series of challenges that tested the resilience and adaptability of DMBs in Nigeria. Among the critical factors influencing the banking sector's performance is CS. The CS decisions made by these financial institutions stand as a significant focal point. Before the global health crisis struck, Nigerian DMBs structured their capital to optimize profitability and ensure financial stability. In both the financial industry and the overall economy, banks are crucial. They transfer money from depositors to investors. For this reason, the entire economy is concerned about the banking sector's performance (Desy, 2022).

Nigeria, like the rest of the world, navigates its way out of the pandemic shadow; DMBs face a post-crises environment that is shaped by lessons learned and regulatory adjustments. The impact of CS decisions made during the pandemic will continue to reverberate in the post COVID-19 pandemic era. Banks found themselves at a crossroads evaluating the sustainability of their pre-pandemic CS and considering potential refinements considering a change in financial landscape. Businesses utilize a variety of debt and equity combinations to finance assets. Some are fully financed by equity, while others combine debt and equity. For example, most high-tech businesses, such as biotechnology, and internet companies, are virtually fully funded by stock (Robb & Coleman, 2012). However, bank debt is not the same as debt from non-banking businesses. Bank debt mostly originates from customer's deposits, whereas most of the debt issued by non-banking companies is obtained through bond sales. Usually, this type of debt has a brief duration. Funds obtained through borrowing from the central bank and other banks are also included in bank debt. The goal of this study is to investigate the capital component that is essential to the profitability of DMBs in Nigeria. This introduction lays the groundwork for a thorough investigation of the ways in which CS choices have impacted DMB profitability in Nigeria pre, during and after the different stages of the COVID-19 outbreak.

Statement of the Research Problem

The COVID-19 pandemic has unleashed unprecedented disruptions across global economies, prompting DMBs to adapt swiftly to mitigate its far-reaching consequences. Among the myriad of challenges faced by business, the scrutiny of their capital structure has emerged as a focal point. According to empirical research, external financial or macroeconomic uncertainty will have a variety of effects on how DMBs arrange their capital (Kenc & Dibooglu, 2010). Atici & Gursoy (2011) Coronavirus as an external macroeconomic uncertainty has its significant and severe effects on the operations of different businesses all over the world. As DMBs struggle to stay afloat, they face several financial challenges, including maintaining an appropriate CS and remaining profitable. The pandemic has disrupted supply chains, reduced consumer demand, and created uncertainty about the future, causing DMBs to reassess their financial strategies. The pandemic has also resulted in DMBs facing challenges in determining the appropriate CS and balancing the need for liquidity with the potential risks of taking on more debt or reducing equity. Subsequently the DMBs in Nigeria, as a cornerstone of the nation's economy had experienced a profound transformation following the COVID-19 pandemic. DMBs, central to financial stability, were confronted with unprecedented challenges and uncertainties that put their profitability and financial resilience to test. At the heart of these challenges lies the critical factor of CS decisions.

Research Questions

Given the problem stated above, this research intends to answer the following questions.

- i. To what extent does CS influence the ROE of listed DMBs in Nigeria, before, during, and after COVID-19 pandemic?
- ii. To what extent does CS influence the Tobins Q of listed DMBs in Nigeria, before, during, and after COVID-19 pandemic?

Significance of the Study

The study of how CS influences the profitability of DMBs in Nigeria before during and after COVID-19 pandemic hold significant importance. It offers valuable insights into the resilience and adaptability of the banking sector in the face of extreme challenges. Understanding the dynamics of CS decisions and their impact on profitability is essential for bank management, policymakers, investors, government agencies, and researchers alike. It provides the groundwork for making informed decisions that can contribute to the sector.

LITERATURE REVIEW

This chapter reviews literature that is relevant and related to the problems of the study. The review covers concepts and definitions, reviews of empirical studies, and theoretical frameworks.

Concept of Capital Structure

Capital Structure refers to the mix of financing sources, including debt and equity, hybrid security, and debt/equity swap, that a bank uses to fund its operations and growth. CS plays a pivotal role in the financial stability and profitability of DMBs. Understanding how changes in CS affect profitability is essential. CS refers to how a company finances its assets using a combination of debt, equity, hybrid securities, and debt/equity swap. The combination of debt and equity constitutes a company's total capital. Bonds are used to raise debt, while ordinary and preferred stock are used to raise equity.

Miller & Modigliani (1858) introduced the concept of CS, claiming that it had no bearing on a company's worth or potential for future success. CS is concerned with the sources through which a business obtains the necessary long-term funding. CS research aims to shed light on the mix of securities and funding sources that businesses employ to fund their assets. Using data from their study of the largest corporations in developing countries. Singh, A., Demirguc-Kunt, A., & Maksimovic, V. (2000) found that more companies in developing countries than in developed ones relied on loan finance to fund their operations.

Concept of Profitability

A company's profitability can be used to assess how well it is performing (Pandey & Kumar, 2016). The amount of debt signifies the company's increasing need for outside resources, which in turn indicates how much profit the company will need to pay down its principal debt and accrued interest on it. Therefore, it is impossible to overstate the significance of profitability and the utilization of shareholders' or equity funds. This is so that the business can utilize its own funds, the equity fund, or shareholders fund to finance its operations without having to pay interest to outside resource providers. The core competitiveness of a business or organization will influence its ability to generate profits (Reddy, 2013) and any business that wishes to maintain its status as a going concern and satisfy its stakeholders, investors, managers, and promoters must maximize profits.

DMBs profitability, liquidity, turnover ratio, and other critical metrics are among the many metrics used to assess it. Several financial ratios, including return on investment, cash ratio, Return on Asset and others, can also be used to gauge profitability. This study decided to use ROE, and Tobin's Q as a proxy and performance indicator for the profitability variable. Profitability refers to the ability of a business to generate profit, measured by comparing its revenue to its expenses. It indicates how efficiently a company is utilizing its resources to generate earnings.

Review of Empirical Studies

The COVID-19 pandemic has unleashed unprecedented disruptions across global economies, prompting DMBs to adapt swiftly to mitigate its far-reaching consequences. Among the myriad of challenges faced by business, the scrutiny of their capital structure has emerged as a focal point. As DMBs navigate through economic volatility and uncertainty, understanding the impact of COVID-19 on their capital structure has become imperative for strategic decision-making and financial resilience. Through this review, we endeavor to shed light on the evolving landscape of capital structure amidst the COVID-19 crises, elucidating the implications for financial theory and practice. By examining the multifaceted dimensions of CS adjustments in response to the pandemic, this review will inform stakeholders, facilitating informed decision-making in an era characterized by volatility and disruption. Below are some of the studies reviewed.

Dang (2024) investigates the impact of CS on business performance of Vietnamese enterprises during the Covid-19 pandemic. The study focuses on key performance indicators such as return on total assets (ROA), return on equity (ROE), and earnings per share (EPS). The analysis employs the table data regression method using a dataset comprising 5747 enterprise observations for the period of (2019 to 2022). The findings indicate that capital structure has a significant negative influence on the business performance of Vietnamese enterprises.

Jose (2024) this study aimed to evaluate the relationship of the capital structure versus the performance, from the perspective of the Pecking Order theory, of companies listed on B3, and to compare the results in the pre-pandemic and post-Covid-19 pandemic periods. The study was characterized as descriptive and quantitative. A regression was performed with panel data, a fixed and balanced model, for 187 B3 companies, whose consolidated and inflation-adjusted financial statements were available at Econometrical. The quarterly data corresponded to the period from the 2nd quarter of 2018 to the 4th quarter of 2021. A dummy variable was included in the model to identify the pre-pandemic (2018 and 2019) and post-pandemic (2020 and 2021) periods. The results indicate that companies listed on B3 were negatively impacted in their value during the Covid-19 period, given that companies that increased the use of short-term third-party capital during the pandemic showed a decrease in the market value ratio divided by the Asset.

Albina (2023) the study examined the influence of COVID-19 on the capital structure of Western Balkans commercial banks, before and during COVID-19 using annual data for the period 2015-2020. Using pooled ordinary least squares regressions, the relationship between bank book leverage as the dependent variable and bank-specific explanatory variables such as

profitability, Tier 1 capital, bank size, collateral, earnings volatility, and liquidity is investigated. COVID-19 as an independent variable is also presented in this paper. GDP and inflation are control (constant) variables that influence the outcome. By regressing the panel data, we conclude that the comparison of factors affecting the capital structure of the respective commercial banks, in the form of profitability, leverage ratio, size, collateral, earnings volatility and liquidity, before and during the COVID-19 pandemic, tend to have significantly different values. Similarly (Tariq, 2023) In light of the COVID-19 epidemic, explore the influence of CEO duality, company size, and board size on capital structure with an emphasis on knowledge management. The study was done out in Bahrain over the period of a year with a cross-sectional design, concentrating on a sample of 12 companies listed in the industrial machinery industry. Data for the year 2022 was primarily derived from annual reports. The findings of the study reveal a significant and beneficial association between board size and financial leverage (LEV). It indicates that businesses with bigger boards typically display higher amounts of financial leverage.

Theoretical Review

The foundation of CS theory can be found in Modigliani and Miller's groundbreaking 1958 study. The writers made the case that a company's worth is independent of its financial structure. Stated differently, a levered firm's value is equivalent to that of an unlevered firm. Some of the more well-known CS theories are listed here.

Capital Structure Irrelevancy Theory

The CS Irrelevancy Theory, by (Merton Miller and Franco Modigliani in the 1950), contends that, under specific conditions, a firm's value is unrelated to its CS. This theory was proposed by Franco Modigliani and Merton Miller, the theory suggest that, under certain assumptions, the value of a firm is not affected by its CS. This theory asserts that the overall market value of a company is determined by its ability to generate operating income and the risk of its underlying assets, rather than the mix of debt and equity used to finance those assets. in a world without taxes, bankruptcy cost, or information asymmetry, the CS would be irrelevant to the firm's value.

Trade-Off Theory (TOT)

Trade-off Theory developed by (Merton Miller and Franco Modigliani in the 1963), Firms aim to balance the tax advantages of debt with the costs, including financial distress and agency cost. The optimal CS is achieved when the tax benefits of debt are balanced against the costs associated with financial distress and agency problems.

According to the theory, a company's DE's capital composition is determined by its financial hardship taxes and costs. There are benefits to paying interest since the amount paid towards the debt's interest will be subtracted from profit before being considered taxable income. Thus, businesses are motivated to use debt to finance their operations. In addition, TOT assumed that the cost of bankruptcy and the benefit of the tax refund would be equal at the optimal debt level, considering the impact of leverage on bankruptcy.

Pecking Order Theory (POT)

Pecking Order Theory was formally introduced by (Stewart Myers and Nicholas Majluf 1984) this theory stated that, there are three different ways to obtain funding: loan, equity, and funds from operations (retained profit) (Jensen & Meckling 2019). According to the principle, businesses should finance themselves by using internally generated cash first, then debt, and then equity. According to the idea, this resulted in asymmetric information, which means that an investor cannot have access to the same knowledge as managers because the managers are employed by the company and may learn about all investments and projects that demonstrate the true values of the organization. According to the idea, there is also a signaling effect that allows managers to undervalue the stock due to the information they possess, which is why it is always better to issue debt rather than equity. Furthermore, it makes the case that the D/E ratio reveals a company's potential for new investments as well as its internal financing capacity. A profitable company's D/E ratio will be low if it has few investment prospects. Conversely, companies with higher internal finance constraints and more investment prospects will have higher D/E ratios.

Theoretical Framework

The CS of a firm refers to the mix of different sources of financing used to meet its long-term obligations and fund its operations. Several theories provide insights into the determinants and implications of a company's CS. The question of what influences capital structure choices and how they affect profitability remains unanswered. Pecking order theory, agency cost theory, Market Timing theory, Cost of Financial Distress, and static trade-off, theory are only few of the theoretical literatures that have been developed since the groundbreaking work of (Modigliani & Miller, 1958) These theories emphasized several elements, including size, tangibility, growth, risk, liquidity, age, and dividend payout, that may have an impact on a company's CS and profitability. They also discussed how financing decisions and CS affect a company's value.

In practice, firms often integrate aspects of multiple theories when determining their CS, recognizing the dynamic and multifaceted nature of financial decision-making. This study will adapt Pecking order, market timing, and dynamic trade off theory, as its best suits this research work. DMBs can follow pecking order theory in strategically adjusting their CS, DMBs can also look at the current economic reality or current market conditions, to adjust their CS. Due to the nature of this research and how COVID-19 pandemic affects DMBs in Nigeria, the study will adopt these theories. Agency cost theory, Cost of Financial Distress, and static trade-off, theory were rejected, as they were found not to have direct effect on this research.

METHODOLOGY

Research Design

The study adopts correlational and export facto research design because it seeks to examine the relationship between variables without manipulation. A correlational design is appropriate for this study, because the study is aimed to determine the degree and direction of association between two or more variables as they naturally occur. This can allows for the identification of

patterns and relationships that can inform predictions or further research. The study follows quantitative approach to examine the determinants of CS quantitatively. This study examined the impact of independent variables on the dependent variable after the event under examination has occurred, the ex-post facto design will also be used. Creswell (2014). A study called ex post facto is designed to investigate the effects of independent variables that existed before the investigation on a dependent variable.

Population of the Study

The population of the study comprises 13 listed DMBs on the Nigerian Exchange Limited, from (2019-2024). Therefore, the population comprises all 13 listed DMBs in Nigeria.

Sample Size and Sampling Technique

Due to the size of the population, the study employs the use of Census sampling technique. A census technique is a technique where every element in the entire population is included in the study (Perdana, 2022).

Method of Data Collection

The study used secondary source of data. The data for all the variables of the study were extracted from the annual reports and account of the sampled companies, Nigerian exchange limited data base for a period of six (6) years (2019 - 2024). The banks are public companies listed on the Nigerian Exchange limited. By virtue of being public companies and as a requirement of being listed, annual financial report must be made available to the Nigerian Exchange limited.

Variables and their Measurements

This study comprised of three (3) sets of variables, dependent variables, independent and control variables.

Dependent Variables

Profitability being the dependent variable of the study measured by ROE, and Tobin's Q.

Return on Equity

A financial statistic called ROE gauges a business's profitability in relation to its shareholders' equity. It provides insight into how effectively a company is using its equity capital to generate profits. ROE is a measure of how well a business generates returns on the capital that its shareholders have invested in it. This is because ROE is the portion of the profit for the accounting period that belongs to the real owner of the company (i.e. the ordinary shareholders). The higher the ROE, the better a company is at converting its equity financing into profit. While ROE as a measure of performance measures the income available to common stockholders as a percentage of the book value of their investment in the organization. ROE indicates the profitability to shareholders of the firm after all expenses and taxes have been deducted (Petersen, 2009).

ROE is calculated as:

$$ROE = \frac{Net\ Income}{Shareholders\ Equity}$$

This metric was adopted as in the work of (Rosalia & Yusnaini, 2022), Ibrahim, H., & Samad, F. A. (2011), (Hajisaaid, 2020), (Adegbola, 2020).

Tobin's Q

The Tobins Q ratio is named after the economist James Tobin, Tobins Q was an important variable in macroeconomic theory; it was defined as the market value of a firm's assets divided by their replacement value. It expresses the relationship between market valuation and intrinsic value. If the market value reflected solely the recorded assets of a company, Tobin's q would be 1.0. If Tobin's q is greater than 1.0, then the market value is greater than the value of the company's recorded assets. Tobin's q, or the q ratio, is the ratio of the market value of a company's assets (as measured by the market value of its outstanding stock and debt) divided by the replacement cost of the company's assets (book value), (Loof, 2004). High Q values encourage companies to invest more in the capital because they are "worth" more than the price they paid for them Hennessy, C., & Whited, T. (2007).

$$Tobins\ Q = \frac{(Market\ value\ of\ Assets - Replacement\ Cost\ of\ Assets)}{Replacement\ Cost\ of\ Assets}$$

Independent Variable

CS being the independent variable is measured using Debt-Equity ratio adopted from the of (Sovbetov, 2013), Wahab, S., & Ramli, N. (2014), (Birru, 2016), and (Abdi & Bayu, 2021) in Bangladesh, Jordan, Ghana, Ethiopia, United Kingdom, and United states respectively. And some of the research made in Nigeria.

Control Variables

Firm size and firm age were introduced to the study as control variables.

Firm Size

The scale of the company represents not only its potential in the short, medium, and long terms, but also its ability to consistently maximize the value for shareholders. First off, there are several accepted methods for determining a company's size, such by its value added, sales, or workforce size.

Firms Age

FA is the number of years the company was incorporated (Ilaboya, 2021). It refers to the amount of work produced by a single company. Studying a company's firm age is crucial since it has a big impact on its productivity and profitability. Older firms often have more experience and expertise in their industry, which can lead to a better understanding of their market, products, and customer needs. Over time firms can build a positive reputation and strong brand recognition, which can attract loyal customers and investors

FA = Current Year – Year of Incorporation

Techniques for Data Analysis

The study used ROE and Tobin’s Q as proxies for profitability (dependent variable). While Debt-Equity Ratio is used as proxies for CS (independent variable). Firm size and Firms age were introduced as control variables. The aim of this research work is to examine the effect of CS on profitability of DMBs in Nigeria pre-during-post COVID-19 pandemic. For analysis, panel regression adopted from the work of (Ibrahim, 2016) which was adopted with modifications made to include some relevant variables in CS decisions. Thus, Tobin’s Q was introduced in the dependent variables of the model during the modifications, firm size and firm age was also introduced as control variables. Data collected and analysis with descriptive and inferential statistics with the help of STATA software version 14.2. The inferential analysis consists of panel regression and a correlation matrix (Pearson’s Correlation).

Model Specification

Panel regression was employed as in the work of Hovakimian, A. & Li, G. (2011). which was adopted with modifications.

The general model is thus,

Before COVID-19 pandemic $Y = \beta_0 + \beta_1 X_{it} + \beta_2 X_{it} + \dots + \beta_k X_k + \varepsilon$

During COVID-19 pandemic $Y = \beta_0 + \beta_1 X_{it} + \beta_2 X_{it} + \dots + \beta_k X_k + \varepsilon$

After COVID-19 pandemic $Y = \beta_0 + \beta_1 X_{it} + \beta_2 X_{it} + \dots + \beta_k X_k + \varepsilon$

Where,

Y = Vector of dependent variable

X = Vector of independent Variables

β_0 = Intercept of the dependent variable or Constant

β_1 = Coefficient on the first independent variable

$\beta_2 - \beta_k$ = Coefficient on the second and on independent variable

ε = error term

i = Cross sections (Firms)

t = Time series (Years)

$ROE_{i,t} = \beta_0 + DE_{i,t} + \beta_1 FS_{i,t} + \beta_2 FA_{i,t} + \mu_{i,t}$ (i)

$TQR_{i,t} = \beta_0 + DE_{i,t} + \beta_1 FS_{i,t} + \beta_2 FA_{i,t} + \mu_{i,t}$ (ii)

Where,

ROE= Return on Equity.

TQR = Tobin’s Q ratio.

FS = Firm Size.

FA = Firm Age.

DE = Debt to Equity

RESULTS

Data Presentation

Data collected was presented using descriptive statistics to portray the nature of data collected for analysis, such as mean, standard deviation, minimum, and maximum of the dependent, independents, and control variables used in the study. Pearson’s correlation matrix was used to determine the relationship between the study variables and lastly, the panel regression was employed to determine the effect of CS on the performance of the sampled companies’ pre-corona (2019 and 2020), during-corona (2021 and 2022) and post-corona (2023 and 2024) periods.

Panel Regression Results

This section presents the result of panel regression using both fixed and random effects models to test the effect of CS on the performance of listed Deposits money banks (DMBs) in Nigeria pre-corona, during-corona, and post-corona periods. To choose the most appropriate model between fixed and random effect, the Hausman test was conducted.

Table 1: Panel Regression Results Pre-Corona Period

Variables	ROE	Tobin’s Q
	R_E (robust) Coeff (P-value)	R_E (robust) Coeff (P-value)
D/E	0.0473 (0.825)	-0.0070 (0.771)
FA	-2.6360 (0.129)	0.0512 (0.829)
FS	2.8081 (0.041)**	-0.4880 (0.065)***
C	-12.1209 (0.110)	3.9145 (0.016)
R-squared	0.4732	0.4277
F(p-value)	0.0380	0.1221

Source: *Author’s Compilation, 2053 using Stata 14.2*

*** p<0.01, ** p<0.05, * p<0.1

Table 1 show the coefficient of 0.0473 against ROE suggests that, on average, a one Naira increase in debt to equity is associated with 0.0473% increase in ROE. However, the p-value of 0.825 indicates that this relationship is not statistically significant at any conventional significance levels. In other words, there isn't enough evidence to conclude that changes in the debt-to-equity ratio have a significant impact on ROE for deposit money banks in Nigeria pre-corona period. This finding is in in tandem with (Hansen & Singleton, 1982), (Stimson, 1985), (Stulz, 1990) (Weinzimmer *et al*, 1998), (Adesina, 2015), (Goso, 2022), and for finding a significant impact of CS on ROE.

Table 2: Panel Regression Results during the Corona Period

Variables	ROE	Tobin's Q
	F_E Coeff (P-value)	R_E (robust) Coeff (P-value)
D/E	0.0444 (0.523)	-0.0311 (0.142)
FA	-2.6360 (0.129)	0.0151 (0.930)
FS	-3.6417 (0.001)***	-0.3760 (0.000)***
C	24.3191 (0.001)	3.4928 (0.000)
R-squared	0.1422	0.7180
F(p-value)	0.0014	0.000

Source: *Author's Compilation, 2025 using Stata 14.2*

*** p<0.01, ** p<0.05, * p<0.1

Table 2 shows the coefficient of 0.0444 against ROE suggests that, on average, a one Naira increase in debt to equity is associated with a 0.0444% increase in ROE. However, the p-value of 0.523 indicates that this relationship is not statistically significant at conventional significance levels. In other words, there isn't enough evidence to conclude that changes in the debt-to-equity ratio have a significant impact on ROE for deposit money banks in Nigeria.

The coefficient for firms' age (-2.6360) suggests that, on average, a one-year increase in firms' age will result in about a 3% decrease in ROE. However, this relationship is not statistically significant at a conventional significance level as evidenced by an insignificant p-value = 0.129. The coefficient for firms' size (-3.6417) suggests that, on average, one Naira increase in the value of assets is associated with a decrease of 3.64% increase in ROE. The p-value of 0.001 indicates that this relationship is statistically significant at a significant level of 1%. The R-squared value of 0.1422 against ROE suggests that approximately 14.22% of the variation in ROE can be explained by the independent and control variables included in the model. The F-statistics p-value of 0.0014 suggests that the independent variable alongside the control variables significantly influences ROE at a 1% significance level.

Table 3: Panel Regression Results (Post-Corona Period)

Variables	ROE	Tobin's Q
	R_E Coeff (P-value)	R_E (robust) Coeff (P-value)
D/E	0.4265 (0.411)	-0.0702 (0.000)***
FA	-6.1575 (0.339)	0.3682 (0.047)**
FS	3.8244 (0.106)*	-0.311 (0.002)***
C	-5.1265 (0.761)	3.0289 (0.000)
R-squared	0.2835	0.6426
F(p-value)	0.2787	0.000

Source: *Author's Compilation, 2025 using Stata 14.2*

*** p<0.01, ** p<0.05, * p<0.1

Table 3 shows the coefficient of 0.4265 against ROE suggests that, on average, a one Naira increase in debt to equity is associated with a 0.4265% increase in return on ROE. However, the p-value of 0.411 indicates that this relationship is not statistically significant at any conventional significance levels. In other words, there isn't enough evidence to conclude that changes in the debt-to-equity ratio have a significant impact on ROE for deposit money banks in Nigeria after the pandemic. The strong relationship between DE and ROE always exists because of financing loans and advances. DMBs used their debt more especially short term-debt to lend to customers through various loans mechanisms such as, Salary advance, payday loans, small ticket, credit cards which are all payable monthly. These loans and advances have significantly increased ROE because DMBs are using customers' deposit without any interest incurred.

The coefficient for firms' age (-6.1575) suggests that, on average, a year increase in the age of these DMBs will result in about a 6.16% decrease in ROE. However, this relationship is not statistically significant at any conventional significance level as evidenced by a p-value = 0.339. The coefficient for firms' size (3.8244) suggests that, on average, one Naira increase in the value of assets is associated with an increase of about 4% in ROE. The p-value of 0.106 indicates that this relationship is statistically significant at 10% significance level. The R-squared value of 0.2835 against ROE suggests that approximately 28.35% of the variation in ROE can be explained by the independent and control variables included in the model. The F-statistics p-value of 0.2787 suggests that the independent variable alongside the control variables does not significantly influence ROE at any significant level.

The Table also shows a coefficient of -0.0702 against Tobin's Q and a significant p-value of 0.000 suggests that, on average, one unit increase in the ratio of debt to equity is associated with a decrease of ₦0.0702 value of Tobin's Q. However, the p-value of 0.000 indicates that this relationship is statistically significant at a 1% significance level. In other words, there is

enough evidence to conclude that changes in the debt-to-equity ratio have a positive significant impact on Tobin's Q for deposit money banks in Nigeria after the pandemic.

The coefficient for firms' age (0.3682) suggests that, on average, as firms' age increases by one year, there will be an increase of ₦0.3682 value of Tobin's Q. However, this relationship is statistically significant at a 5% significance level as evidenced by a p-value of 0.047. Similarly, the coefficient for firms' size (-0.311) suggests that, on average, a one Naira increase in the value of assets of this company is associated with a decrease of ₦0.311 value of Tobin's Q. The p-value of 0.002 indicates that this relationship is statistically significant at a significant level of 1%. The R-squared value of 0.6426 suggests that approximately 64.26% of the variation in Tobin's Q can be explained by the independent and control variables included in the model. The F-statistics p-value of 0.000 suggests that independent alongside control variables significantly influence Tobin's Q. In view of the above findings, below are some of the findings with the same results. Elsas & Florysiak (2015), (Degryse *et al*, 2012), (Hansen & Singleton, 1982), (Ghosh & Cai, 1999), and below are findings against the results (Nang, 2017).

CONCLUSION AND RECOMMENDATIONS

In conclusion, the relationship between CS and profitability of DMBs in Nigeria underwent a dynamic evolution before, during and after COVID-19 pandemic periods, yielding mixed results and valuable insights: The study concluded that DMBs before COVID-19 pandemic period heavily relied on customers deposits; profitability levels were generally healthy, driven by robust interest income from loans and investment. Regardless of the economic conditions, bank performance in terms of generating ROE and Tobin's Q is driven by other factors such as, operational efficiency, interest rate, loan quality, regulatory environment, management, and market conditions rather than the CS. The study concluded that the pandemic challenged DMBs CS as economic uncertainty led to cautious debt issuance and capital-raising strategies. Profitability faced headwinds due to reduced economic activities, increased provisioning for potential loan defaults, and interest rate pressures. Digitalization and cost management strategies have become critical for survival.

Below are recommendations derived from findings and conclusion concerning CS and profitability pre, during, and post COVID-19 pandemic?

- DMBs should as a matter of urgency upgrade their assets. Most of the older Banks tend to have obsolete assets, which as a result affects their profitability. DMBs should also expand their branch network in order to increase customer base and market share, which will certainly increase profitability. DMBs in Nigeria should maintain a dynamic and adaptable approach to CS and profitability management, considering the lessons learned during the COVID-19 pandemic period. By diversifying capital sources, embracing digitalization, enhancing risk management, and updating their assets. DMBs can position themselves for sustained profitability in stable, competitive, and challenging economic environments. Massive investment in FINTECH can certainly address these issues.

- DMBs should aim to diversify their sources of capital, striking a balance between debt and equity. This diversification will enhance financial stability and flexibility. DMBs in Nigeria should look for other sources of capital such as Euro bond, loan from CBN, and retain earnings. Assess the impact of the pandemic on capital needs and be prepared to adjust capital allocation swiftly. Maintain adequate capital buffers to absorb unexpected shocks. DMBs should consider recalibrating the CS to ensure resilience in the post-pandemic era. Evaluate the needs for additional equity infusion to strengthen capital positions and reduce reliance on debt. DMBs should accelerate digitalization efforts to provide uninterrupted services and reach customers in remote environments. Digital channels such as internet banking platforms, loan applications, mobile transfer applications and USSD pass pad can help maintain customers relationships reduce crowd in the banking halls in case of future pandemic, save customers stress of coming to the bank and certainly reduce cost of operation.

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