

DEBT FINANCING AND FINANCIAL STABILITY OF LISTED DEPOSIT MONEY BANKS IN NIGERIA

¹Ajose Kehinde G

²Aina Grace and Olanipekun Taiwo Oseni

108032323815, ajosekehinde20@gmail.com

²Mcperson University, Seriki Sotayo, Ogun State, Nigeria
Department of Accounting and Finance

Abstract

Debt financing is a method of raising funds for a business by borrowing money from external sources such as banks, financial institutions and bond markets. The study investigated the effect of debt financing and financial stability of listed deposit money banks in Nigeria. The study employed the ex post facto research design. The population was 24 deposit money banks in Nigeria listed on the Nigeria Exchange Group (NGX) as of 31st December 2022. 10 banks were used as the sample size. A purposive and convenient sampling technique was used. Data were obtained from the annual published reports of the sampled banks for a period of 10 years (2012-2021). Descriptive and inferential statistics were used to analyse the data. The study found that debt financing measures had a significant and positive effect on net profit margin and The study found that debt financing measures had a significant and positive effect on return on investment. The study concluded that debt financing measures affected the financial stability of listed deposit money banks in Nigeria. It is recommended that the management of listed deposit money banks in Nigeria should work assiduously to have optimal capital structure for their companies to increase their return on investment.

Keywords; Financial stability, Long-term debt, Net profit margin, Short-term debt,

Jel Classification; G32, E44, E5, M49

1. INTRODUCTION

Debt financing is a method of raising funds for a business by borrowing money from external sources such as banks, financial institutions, and bond markets. It is an important aspect of corporate finance and has a significant impact on a company's financial performance. Debt financing can be used for various purposes such as financing new projects, expanding operations, and meeting working capital needs. It is a

common source of funding for both small and large businesses. According to a report by the National Small Business Association(NSBA), 87% of small businesses used debt financing in 2018 to fund their operations (NSBA, 2018). One of the main advantages of debt financing is that it allows companies to leverage their assets to raise funds without diluting ownership. However, excessive debt can increase the financial risk of a company and have a negative impact on its creditworthiness. According to a study by Deloitte, high levels of debt can lead to a decrease in credit ratings, higher borrowing costs, and a higher likelihood of default (Deloitte, 2017).

Debt financing is an important source of finance for businesses. It can have both beneficial and bad effects on the financial success of an organisation, depending on the numerous aspects that are involved. The question of the relationship between debt financing and financial performance is a complicated one that calls for rigorous research and management on the part of both businesses and investors (Wilbert et al., 2023). There are both positive and negative consequences that may be attributed to the utilisation of debt financing by deposit banks on their overall financial performance (Manzano, 2019). On the one hand, debt financing has the potential to supply financial institutions with the capital they require to raise their level of profitability and expand their operations. On the other side, debt financing can lead to an increase in the financial leverage of banks, which can result in an increase in financial risk and make them more susceptible to economic downturns and market volatility. The banking business has undergone substantial transformations in the 21st century, including an increase in the level of competition, modifications to regulatory policies, and technological improvements. It is for this reason that it is necessary to do research into the connection that exists between debt financing and the financial performance of some deposit banks in the 21st century (CIBN, 2018)

Debt financing is a sort of financing in which businesses get funds for a variety of business purposes by issuing debt instruments and borrowing from banks or other financial organisations. Bond issuance, business credit cards, term loans, peer-to-peer lending services, and invoice factoring are some examples. The structure of the firm is frequently financed using a combination of debt and equity, which has been highlighted as the most essential financial decision since it has a substantial impact on the firm's financial success. Debt finance is the most common type of external funding employed by businesses (Baltaci & Ayaydian, 2014). The significant growth in external financing over a longer length of time indicates robust economic expansion. Debt financing provides both advantages and downsides for firm/company growth and strategy (Irby et al., 2010). Capital structure, according to the capital structure theory, refers to how an organisation funds its resources. A company can be funded entirely through equity or debt (Murugesu, 2013). Profitability, liquidity, solvency, and efficiency are all characteristics that influence a company's financial performance (Faraz & Danish, 2020). Debt financing has a considerable impact on these variables. A corporation with a high debt-to-equity ratio, for example, may have inferior profitability due to greater interest in expenditures. Debt finance, on the other hand, can boost liquidity and solvency by providing access to funds in times of need.

It has been determined by Yinka et al. (2015) that loans put financial institutions in the most precarious position. The failure of a large number of banks occurred in the late 1990s, and the commercial banks in Nigeria have only recently undergone a restructuring. This occurred as a consequence of bad management, which is demonstrated by the high amounts of loans that are considered to be non-performing. A sound financial system is vital for the economic growth of any country and healthy banking is a key component of a sound financial system. An effective banking system contributes to the promotion of economic growth and the reduction of poverty, in addition to addressing any factors that may impede the advancement of economic progress. The inability of financial institutions to effectively manage their debt financing might result in the institution's failure. In addition to Bassey et al. (2016), Mohammed (2012) and Kwaku (2015) were also cited.

A number of the financial hazards that banks are subject to were outlined. Credit risk, liquidity risk, investment rate risk, and operational risk are all included in this category. To mitigate the degree of their exposure to situations that are likely to have an impact on their financial stability, financial institutions need to conduct an analysis of their surroundings and devise policies that are appropriate to themselves. To discuss and alleviate the universal component of financing liquidity among banks, Huang and Ratnovski (2011) expressed their opinion that an adequate regulatory device that is above the traditional reserve supplies ought to be implemented.

The problem of debt financing management in Nigerian deposit money banks is a matter of considerable worry due to the high level of perceived dangers that arose as a consequence of certain characteristics of business conditions and clients who were involved. The operational risk, the short-term debt, the long-term debt, the tangibility of the assets, and the growth of sales are all examples of those types of dangers. The failure of a bank can be readily and most often brought on by poor management of any of these three types of debt financing (short-term debt, long-term debt and asset tangibility). It was said by Davies (1997) that the failure of numerous financial institutions to implement strategies that were both efficient and effective to hedge or decrease risks to a level that was reasonable or acceptable led to their failure. As a result of the worldwide economic downturn that occurred in 2008, numerous banks in the United States and other countries across the world have failed as a result of financial instability. Additionally, Nigeria was impacted, which resulted in Polaris Bank acquiring the operations and assets of Skye Bank, Eco Bank acquiring Oceanic Bank, United Bank for Africa acquiring Standard Trust Bank, and most recently, Access Bank acquiring Diamond Bank. These are just a few examples of the many financial institutions that were affected. Other banks, such as the International Bank for West Africa and Savannah Bank, experienced financial difficulties and ultimately went out of business. There is little doubt that these difficulties have had an impact on the economy as a whole. The Nigerian banking sector has not yet reached a state of true stability, notwithstanding the efforts that have been made by the Central Bank of Nigeria. Some of the most significant problems are connected to the inability of certain financial institutions to successfully manage debt financing, which is a consequence of non-performing loans (NPLs), inadequate capital, and poor corporate governance.

A lot of scholars have looked at risk management levels as a factor in predicting a financial institution's success or failure. In the past, financial institutions have encountered challenges stemming from severe banking issues, including careless credit standards of borrowers and their associates, inadequate portfolio management of debt financing, and other circumstances that may cause the banks' counterparties' credit standing to deteriorate. Numerous research studies have also documented adverse correlations between the impacts of debt financing and the banking industry's financial stability, with various explanations offered for their findings. Arumona et al. (2020); Onyekweln et al. (2018); Asmaul and Ibnu (2019); David (2017); Akaji et al. (2021); Rusil, et al (2019); Zainul and Dian (2019); Lenny and Tsholofelo (2020); Jozef and Maarje (2020).

Nonetheless, it appears that not enough research has been done on how debt finance management affects deposit money institutions' ability to be financially stable. It is required of every banking company to maximise shareholder value and generate significant profit to expand or develop new products. Debt management (credit, market, and operational) is the main area that reduces a bank's overall profit. In-depth evaluations of the debt profiles of Nigeria's deposit money institutions are required, together with reviews of the suitability of the frameworks used to manage the various types of debt to which they are exposed and recommendations for practical debt management techniques. Thus, the purpose of this research is to ascertain how debt financing affects the net profit margin of Nigerian deposit money banks as well as how it affects their investors' returns on investment.

2.0 Review of Extant Literature

2.1 Conceptual Review

2.1.1 Net Profit Margin

Using information at a particular point in time, profitability ratios are a category of financial measures that are utilised to evaluate the capacity of a company to make earnings about its revenue, operating costs, statement of financial position assets, and shareholders' equity over some time. The gross profit margin, the return on investment, the return on assets, and the net profit margin are all included in this category (Manzano 2019). According to Chenhall and Langfield-Smith (2017), the advantage of these measures is that they are more readily available than other metrics. This is because any organisation that is focused on making a profit generates these data for their annual financial reporting. The net margin, which is the ratio of profits to total revenues, is the most effective indicator for determining whether or not a business is profitable, as stated by Pandey (2020). The entire profitability of the organisation, or the amount of money that is brought to the bottom line, is ascertained through this assessment.

2.1.2 Return on Investment

It is a measure of the profitability of an investment that is represented as a percentage of the initial investment. Return on investment (ROI) is a measure of profitability. Since it assists in determining the prospective returns of various investment options, it is an

essential indicator for both businesses and investors. A study conducted by the consulting firm McKinsey found that throughout a lengthy period, businesses that regularly produce high returns on investment earn 4% greater profits for their shareholders than their respective competitors. Another study conducted by J.P. Morgan, a company that provides financial services, discovered that businesses that have a higher return on investment tend to have higher earnings growth rates and better stock performance. According to the findings of the study, chief executive officers who receive a greater share of equity-based incentives tend to concentrate more on maximising return on investment, which ultimately results in lower levels of profitability. The return on investment (ROI) of digital transformation initiatives in a variety of businesses was the subject of another study that was published in the Harvard Business Review in 2019. Companies that were able to successfully implement digital transformation initiatives tended to earn better return on investment (ROI), with an average return of 23% on their investment, according to the findings of the study (Faraz & Danish, 2020).

2.1.3 Debt Financing

Debt financing is a popular approach for firms to raise capital. A firm borrows money from a lender with the promise of repaying the loan with interest over time. Debt financing is available from a variety of sources, including banks, private lenders, and bondholders. Debt financing has various advantages for firms. For starters, it enables firms to raise financing without sacrificing ownership or control of the organization. Unlike equity financing, which requires the company to sell shares to investors, debt financing does not require the corporation to give up any ownership stake. Furthermore, debt financing often has lower interest rates than equity financing, which can result in reduced overall business costs (John & Daniel, 2020).

2.2 Theoretical Review

The study adopts Modigliani and Miller and Pecking Order Theory

2.2.1 Modigliani and Miller Theory

Modigliani and Miller (1958) (M-M) question the conventional wisdom about the effect of leverage on the cost of capital. They created a behavioural rationale for the net operating income method. M-M contend that in the absence of taxes, the firm's cost of capital and market value stays constant across all degrees of leverage. The following assumptions underpin the M-M position: Perfect capital markets imply that information is free and easily accessible to all investors. Thus, investors are free to purchase and sell securities, they behave rationally, they can borrow without limitation on the same conditions as enterprises, there are no transaction costs in purchasing or selling securities, and all securities are infinitely divisible. Subjective random variables describe a firm's average expected future operating earnings; the expected values of the probability distributions of expected operating incomes for future periods are the same as present operating incomes. Firms can be classified into homogenous risk classes; firms with equal predicted profits and business risk characteristics are regarded to be in the same risk class.

2.2.2 Pecking Order Theory

Donaldson (1961) proposed the Pecking order theory, which was later updated by Myers and Majluf (1984). The theory discusses the ramifications of knowledge asymmetries that exist between the firm's outsiders and insiders (Bitok & Scholes, 2011). According to the hypothesis, due to knowledge asymmetry between a given firm's managers and general investors, investors are likely to undervalue the firm's new shares released to the market. Asymmetric information influences the decision between internal and external finance, as well as whether to issue debt or equity. Thus, the simplest method for enterprises to avoid this type of problem is to use their internal financial resources to support their investments and operations. If the firm's sources of cash are insufficient to fund its investments, it can turn to debt financing. When debt financing is no longer helpful to the firm (when the costs of debt financing outweigh the advantages of debt financing), the firm can issue equity in the form of stocks (Raza, 2014). Essentially, this theory suggests that corporations will prefer to finance their investments using debt rather than equity (Nyamita & Dorasamy, 2014).

2.2.3 Empirical Review

Wilbert et al. (2023) examined the effect of debt financing on the financial performance of SMEs in Zimbabwe. This study adopted a positivist philosophy and a cross-sectional survey design. Quantitative data were gathered from 210 SMEs using a structured questionnaire with Likert-type responses. The findings show that debt financing (short-term debt, long-term debt and trade credit). Positively influences the financial performance in emerging markets.

Anis and Abdulrahman (2022) examined debt financing on financial performance; A study on the energy sector of Saudi Arabia. The research sample comprises four Saudi Arabian energy companies. The research presents fundamental findings using descriptive statistics and correlation analysis, as well as empirical findings using panel regression. The findings indicate that debt financing has a detrimental on business financial performance. The business size has a negative link with the ROA and ROE.

Arumona et al. (2021). investigated the effects of debt financing on the financial performance of listed goods firms in Nigeria. The study adopted a panel data regression approach for analysis which gives room for adoption between fixed effect and random effect through the help of the Hausman test of the relationship between the variables. The study reveals that there is a negative and significant relationship between short-term debt and net profit margin.

Aamir, et al (2021) investigated the relationship between listed firms' debt level and performance on the Pakistan stock exchange during five years. This study uses pooled ordinary least square regression and fixed random effects models to analyse a cross-sectional sample of 30 Pakistani companies operating in the automobile cement and sugar sector. The results indicate that both short and long-term debt have negative significant impacts on firm performance in profitability.

Faraz and Danish (2020) examined the impact of debt financing on performance; evidence from the textile sector of Pakistan. The method of analysis used was a fixed effects model to find the relationship between firm performance and capital expenditure. The statistical results showed a positive relationship between return on assets and debt-to-asset ratio.

Aniefor and Onatuyeh (2019) examined the effect of debt financing on the corporate performance of listed consumer goods firms in Nigeria. The study used panel regression technique methods to analyse the data. The result revealed that total debt, long-term debt and short-term debt asset ratios positively influence the performance of consumer goods firms in Nigeria.

Manzano (2019) investigated the effect of debt financing on the financial performance of listed firms at the Nairobi securities exchange. Method of analysis of data was carried out through descriptive statistical techniques, correlation analysis and multiple linear regression. The findings revealed that the financial performance of non-financial firms that are listed on the Nairobi stock exchange is affected negatively and significantly by debt financing

Benter et al. (2018) evaluate the effect of debt financing options on the financial performance of firms listed at the Nairobi Securities Exchange Kenya. The study used panel econometric techniques named pool ordinary least squares, fixed effect and random effect to analyse the effects of debt on the financial performance of 40 non-financial firms listed on the Nairobi securities exchange between 2009 and 2015. The results show that short-term, long term and total debt have negative and statistically significant effects on return on asset across OLS and RE.

Habib, et al (2016) examined the impact of debt on the profitability of companies with empirical evidence from the non-financial sector of Pakistan. Random effect regression analysis was used to find out the impact of debt on profitability. Results indicate a significant but negative relationship between short-term debt, long-term debt, total debt and return on assets.

Peter and Charles (2015). investigated debt financing and financial performance of small and medium-sized enterprises; evidence from Kenya. The study targets 4122 SMEs in Eldoret town. A stratified sampling technique was used to select a sample size of 50 SME firms in Eldoret town. The study collected quantitative secondary data from SMEs' financial statements for three consecutive years. Multiple regression analysis was used to test the study hypothesis. The results revealed that short-term and long-term had negative impacts on the financial performance of SMEs.

Ebaid, (2009), investigated the relationship between capital structure and profitability of eight companies working in the basic material sector in Saudi Arabia during the period 2009 to 2018. The methods used are regression analysis, fixed effect model, random effect model and Hausman test. The results show that there is a negative relationship between short-term debt to total asset ratio and profitability.

3.0 Methodology

The impact of debt financing on the financial stability of Nigeria's deposit money bank was assessed in this section. To quantify the impact of each explanatory variable on the dependent variable and to foresee any relationships between the variables, a panel least square was used in the study. For ten (10) years in a row, from 2012 to 2021, the macroeconomic variable data was taken from the publicly available annual financial report statements of certain deposit money institutions. Because our data is both time series and cross-sectional, we are using the Panel Least Square (PLS) approach to estimate our baseline equation. Thus, the study regressed explained variables, which were Net Profit Margin (NPM) and Return on Investment (ROI) as dependent variables, and our explanatory factors included was Short Term Debt (STD), Long Term Debt (LTD), Asset Tangibility (AT), and Debt to Equity Ratio (DER).

Model Specification

This study investigated the impact of debt financing on financial stability, based on modelling and adopting some variables suggested by researchers (Nazir et al., Ebaid, 2009; Habib, et al., 2016). The model is modified to get better results by taking two determinants of financial stability; Net Profit Margin(NPM) and Return on Investment(ROI). Short-term debt (STD), long-term debt (LTD), asset tangibility (AT) and debt-equity ratio (DER) are independent variables. The model is constructed as follows.

Functional Equation

$$FS = f(DF)$$

$$NPM = f(STD, LTD, AT, DER,) \dots\dots\dots 1$$

$$ROI = f(STD, LTD, AT, DER,) \dots\dots\dots 2$$

The model is specified as;

$$NPM_{it} = \beta_0 + \beta_1 STD_{it} + \beta_2 LTD_{it} + \beta_3 AT_{it} + \beta_4 DER_{it} + \epsilon_{it} \dots\dots\dots \text{Model 1}$$

$$ROI_{it} = \beta_0 + \beta_1 STD_{it} + \beta_2 LTD_{it} + \beta_3 AT_{it} + \beta_4 DER_{it} + \epsilon_{it} \dots\dots\dots \text{Model 2}$$

FS= Financial Stability

DF= Debt Financing

NPM= Net Profit Margin

ROI= Return on Investment

STD= Short term Debt

LTD= Long term Debt

AT= Asset Tangibility

DER= Debt Equity Ratio

E= Error term

β_0 = Intercept/ Constant

β_0 to β_4 = Slope coefficient

i= Cross-section of companies

t = time

A Priori Expectation

The *a priori* expectation of the study for the hypothesis was that we expected independent variables (short-term debt, long-term debt, asset tangibility, and debt-equity ratio) along with the dependent variables (Net Profit Margin and Return on Investment) to have a significant influence on the financial stability of listed deposit money bank in Nigeria.

4. Estimation Techniques

To prevent erroneous results, a first examination is unavoidable. To test for the unit root test, an Augmented Dickey-Fuller test of the stationary test is required, and descriptive statistics of the variables were conducted.

Table 1: Unit Root Test Using Augmented Dickey-Fuller (ADF) 2012-2021.

Variables	ADF-Fisher Chi-Square Statistic	Probability Level	Order of Integration
ROA _{log}	29.2057	(0.0012) < 0.05	Stationary level
ROE _{log}	26.4078	(0.0032) < 0.05	Stationary at first difference
NPM _{log}	30.1920	(0.0008) < 0.05	Stationary at level
ROI _{log}	20.8163	(0.0224) < 0.05	Stationary first difference
STD _{log}	19.3624	(0.0359) < 0.05	Stationary at first difference
LTD _{log}	32.2435	(0.0000) < 0.05	Stationary at level
AT _{log}	23.0999	(0.0104) < 0.05	Stationary at first difference
DER _{log}	24.1100	(0.0073) < 0.05	Stationary at first difference

Source: Researchers' Computation (2023).

After logging the explanatory and explained variables involved. Results of the Stationarity (unit root) test show the ADF-Fisher Chi-Square Statistic. It revealed that ROA_{log}, NPM_{log}, and LTD_{log} are stationary at levels while ROE_{log}, ROI_{log}, STD_{log}, AT_{log} and DER_{log} are stationary at first difference. It indicated that most of the variables were stationary at the

first difference and levels. Therefore, since there are variables stationary at levels. Hence, it is unnecessary to further carry out additional tests to investigate the reliability of the data

Table 2 Descriptive Statistics of the Variables

	AT _{log}	LTD _{log}	NPM _{log}	ROA _{log}	ROE _{log}	ROI _{log}	DER _{log}	STD _{log}
Mean	2.16E+09	3323.572	54655970	0.041575	0.153492	0.364207	67743919	2384.624
Median	8.56E+08	2847.225	13172770	0.021229	0.140693	0.024659	11643405	1879.445
Maximum	1.17E+10	8397.595	2.15E+08	0.318244	0.339435	5.097647	4.03E+08	6130.333
Minimum	266903.0	10.19000	2180.000	0.007708	0.007868	0.001962	5885.000	7.740000
Std. Dev.	2.91E+09	3167.238	67090366	0.059895	0.084864	0.928864	96625211	2365.254
Skewness	1.522895	0.258354	0.899649	3.577610	0.366851	3.789720	1.629543	0.323910
Kurtosis	4.933238	1.390276	2.550582	15.57968	2.594271	18.52864	5.337396	1.423469
Jarque-Bera	21.69040	4.763663	5.732412	349.0757	1.171557	497.6445	26.80845	4.841866
Probability	0.000019	0.092381	0.056914	0.000000	0.556672	0.000000	0.000002	0.088839
Sum	8.65E+10	132942.9	2.19E+09	1.663008	6.139695	14.56827	2.71E+09	95384.95
Sum Sq. Dev.	3.30E+20	3.91E+08	1.76E+17	0.139909	0.280876	33.64875	3.64E+17	2.18E+08
Observations	100	100	100	100	100	100	100	100

Source: Researcher’s computation (2023).

The descriptive statistics in Table 2, show that the mean (average) value of **Asset Tangibility (AT)** has an average value of ₦2,160,000,000 billion; a maximum of ₦11,700,000,000 billion and a minimum of ₦266,903.0 thousand which is also skewed to the positive range of 1.522895 with Probability of 0.000000 < 0.05 significant level. **Long-Term Debt (LTD)**, has a mean value of ₦3,323,572 million; a maximum of ₦8,397,595 million; and a minimum of ₦10,190.00 thousand skew to the positive range of 0.258354 with a Probability of 0.092381 > 0.05 significant level. **Net Profit Margin (NPM)** has a mean of ₦54,655,970 million; a maximum of ₦215,000,000 million; and a minimum of ₦2,180,000 million continuing to skewed to the positive range of

0.899649 with a probability of 0.056914 > 0.05 significant level. **Return on Asset (ROA)** has a mean value of 0.041575 (4.1%); a maximum of 0.318244 (31.8%); and a minimum of 0.007708 (0.7%) and is more skewed to the positive range of 3.577610 with Probability of 0.000000 < 0.05 significant level.

Return on Equity (ROE) has a mean of 0.153492 (15.3%); a maximum of 0.3394345 (33.9%); and a minimum of 0.007868 (0.7%), skewed to the low positive range of 0.366851 with Probability of 0.556672 > 0.05 significant level. **Return on Investment (ROI)** has an average value of 0.364207 (36.4%); a maximum of 5.097647 (5.0%); and a minimum of 0.001962 (0.1%) and is more skewed to the positive range of 3.789720 with Probability of 0.000000 < 0.05 significant level, **Debt to Equity Ratio (DER)** has an average value of ₦67,743,919 million; maximum of ₦403,000,000 million and minimum of ₦5,885.000 thousand which also skewed to the positive range of 1.629543 with Probability of 0.000002 < 0.05 significant level, And the last variable **Short Term Debt (STD)** has average value of ₦2,384.624 million; maximum of ₦6,130,333 million; and minimum approximate of ₦7,740.000 thousand which skewed to the positive range of 0.323910 with Probability of 0.088839 > 0.05 significant level. Therefore, the above result shows that all of the variables concerned were satisfactory and accurate for the research analysis under the Probability which shows that most of the variables were statistically significant at a 5% (per cent) level of significance.

4.1 Test of Hypotheses

Hypothesis One

H₀: Debt financing has no significant effect on the net profit margin of listed deposit money banks in Nigeria.

Table 3 Correlated Random Effects - Hausman Test Model (1)

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	157.003850	4	0.0000

Source; *Researcher Computation 2023*

The table above revealed the outcome of the Hausman Test carried out to accept or reject the Null (H₀) research hypothesis. From the Chi-Sq. Statistic value of 157.003850 with a degree of freedom (df) of 4 and Probability value of 0.000 < 0.05. This implies that the Random Effects Model which is the null research hypothesis will be rejected while the Fixed Effects Model and alternative research hypothesis will be accepted.

Table 4 Cross-section random effects test comparisons Model (1):

Variable	Fixed	Random	Var(Diff.)	Prob.
Log LTD	-2483.583547	-19358.318284	8274003.483195	0.0000
Log STD	3837.175941	18145.603968	8031310.054506	0.0000
Log AT	-0.014480	0.000827	0.000025	0.0022
Log DER	0.703101	0.505506	0.012372	0.0757

Source: *Researcher Computation 2023*

The cross-section random effects test comparisons above show that there is no significant difference in the coefficients between the fixed and random effect models. This shows that LTD, STD, and AT were statistically significant at Probability < 0.05 per cent except for DER.

➤ **Cross-section random effects test equation Model (1):**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	29334804	17175136	1.707981	0.0952
Log LTD	-2483.584	6770.997	-0.366797	0.7157
Log STD	3837.176	8745.332	3.438768	0.0031
Log AT	0.414480	0.007922	-2.827910	0.0048
Log DER	0.703101	0.216249	3.251350	0.0023

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.940941	Mean dependent var	43755917
Adjusted R-squared	0.929417	S.D. dependent var	63776688
S.E. of regression	16943863	Akaike info criterion	36.29026
Sum squared resid	1.18E+16	Schwarz criterion	36.63442
Log likelihood	-898.2565	Hannan-Quinn criter.	36.42132
F-statistic	81.65210	Durbin-Watson stat	0.757262
Prob(F-statistic)	0.000000		

Source: *Researchers Computation (2023).*

Interpretation of the coefficients of determination

The above analysis shows that a cross-sectional panel fixed effect model was carried out between our independent variables against the dependent variable. The result from the table shows that Short Term Debt (STD), Asset Tangibility (AT), and Debt to Equity Ratio (DER) have a significant positive effect on the Net Profit Margin (NPM) at the 5% alpha level of significant while Long Term Debt (LTD) did not significant effect on the Net Profit Margin. However, the coefficient of determination R-squared is 0.940941 in the model of the regression analysis accounting for 94% of changes in NPM determined by

all the predictors. The un-standardized coefficient of determinant further indicated that (STD/ β = 3837.176), (AT/ β = 0.414480) and (DER/ β = 0.703101) indicated that 1 unit increase in Short Term Debt, Asset Tangibility, and Debt to Equity Ratio led to 3837.1%, 41.4% and 70.3% increases respectively in Net Profit Margin (NPM) at the (P-value of $0.000 < 0.05\%$). It tells us the model is of good fit, and that the independent variables to a very large degree explain the changes in the dependent variable. It also shows that the explanatory variable has a relationship at the overall level of significance.

From the estimation, Durbin Watson's statistics is (0.757262), which implies that there is a positive serial correlation or autocorrelation. So there is evidence of positive first-order serial correlation. The F-statistics value is (81.65210) with a probability or significant level of 0.000000 showing the overall analysis of the variance of the model and the result indicates that the explanatory variable is fundamental in explaining the variation in the dependent variable. In conclusion, since at the overall level, short-term debt, long-term debt, asset tangibility, and debt-to-equity ratio can determine the changes in the net profit margin, therefore null hypothesis (H_0) that says, "Debt financing has no significant effect on the net profit margin of listed deposit money banks in Nigeria", is rejected while alternative hypothesis accepted

Discussion of Findings and Implication

The first objective, the study discovered empirically that Short Term Debt (STD), Asset Tangibility (AT), and Debt to Equity Ratio (DER) have a significant positive effect on the Net Profit Margin (NPM) at the 5% alpha level of significance while Long Term Debt (LTD) did not have a significant effect on the Net Profit Margin. This result is in tandem with the results of Wilbert et al. (2023), Aniefor and Onatuyeh (2019), Faraz and Danish (2020) but against the study of Manzano (2019), Benter et al. (2018) and Peter and Charles (2015). This implied banks should sustain the level of debt to equity and asset tangibility should be highly maintained.

Hypothesis Two

H_0 : Debt financing has no significant effect on the return on investment of listed deposit money banks in Nigeria.

Table 5 Correlated Random Effects - Hausman Test Model (2)

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	29.794629	4	0.0000

Source: Researcher Computation 2023

The table above revealed the outcome of the Hausman Test carried out to accept or reject the Null (H_0) research hypothesis. From the Chi-Sq. Statistic value of 29.794629 with a degree of freedom (df) of 4 and Probability value of $0.000 < 0.05$. This implies that

the **Random Effects Model** and Null research hypothesis will be rejected while the **Fixed Effects Model** and Alternative research hypothesis will be accepted.

Table 6 Cross-section random effects test comparisons Model (2):

Variable	Fixed	Random	Var(Diff.)	Prob.
Log LTD	0.000373	0.000139	0.000000	0.0350
Log STD	0.000001	-0.000271	0.000000	0.0124
Log AT	-0.000000	-0.000000	0.000000	0.9621
Log DER	0.000000	0.000000	0.000000	0.9907

Source: *Researcher Computation 2023*

The cross-section random effects test comparisons above show that there is no significant difference in the coefficients between the fixed and random effect models. This shows that LTD and STD were statistically significant at probability < 0.05 per cent while AT and DER.

Cross-section random effects test equation Model (2):

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.340875	0.660165	-2.031121	0.0048
Log LTD	0.311373	0.000260	3.431575	0.0038
Log STD	1.350906	0.000336	2.304026	0.0068
Log AT	6.133511	3.04E-10	4.201277	0.0015
Log SC	3.147410	8.31E-09	5.037742	0.0001

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.596474	Mean dependent var	0.297551
Adjusted R-squared	0.398225	S.D. dependent var	0.839552
S.E. of regression	0.651275	Akaike info criterion	2.141781
Sum squared resid	17.39055	Schwarz criterion	2.485945
Log likelihood	-44.54452	Hannan-Quinn criteria.	2.272841
F-statistic	5.053219	Durbin-Watson stat	1.334062
Prob(F-statistic)	0.000209		

Source: *Researcher Computation 2023*

Interpretation of the coefficients of determination

The above analysis shows that a cross-sectional panel fixed effect model was carried out between our independent variables against the dependent variable. The result from the table shows that Short Term Debt (STD), Long Term Debt (LTD), Asset Tangibility (AT), and Debt Equity Ratio (DER) have a significant positive effect on the Return on Investment(ROI) at the 5% alpha level of significant. Thus, the coefficient of determination R-squared is 0.596474 in the model of the regression analysis accounting for 59.6% of changes in ROI determined by all the predictors. The un-standardized coefficient of determinant further shows that (LTD/ β = 0.311373), (STD/ β = 1.350906), (AT/ β = 6.133511) and (DER/ β = 3.147410) indicated that 1 unit increase in Short Term Debt, Long Term Debt, Asset Tangibility, and Debt Equity Ratio led to 31.1%, 13.5%, 61.3% and 31.4% respectively increases in Return on Investment(ROI)at the (P-value of $0.0000 < 0.05\%$). It tells us the model is of good fit, and that the independent variables to a very large degree explain the changes in the dependent variable. It also shows that the explanatory variable has a relationship at the overall level of significance.

From the estimation, Durbin Watson's statistics (1.334062), imply that there is no positive serial correlation or autocorrelation. So, there is no evidence of positive first-order serial correlation. Also, the F-statistics value is (5.053219) with a probability or significant level of 0.000209 showing the overall analysis of the variance of the model and the result indicates that the explanatory variable is fundamental in explaining the variation in the dependent variable.

In conclusion, since at the overall level, short-term debt, long-term debt, asset tangibility, and debt-to-equity ratio can determine the changes in the return on investment, therefore null hypothesis (H_0) that says, "*Debt financing has no significant effect on the return on investment of listed deposit money banks in Nigeria*", is rejected while alternative hypothesis accepted.

Discussion of Findings and Implication

The study discovered empirically that Short Term Debt (STD), Long Term Debt (LTD), Asset Tangibility (AT), and Debt to Equity Ratio (DER) have a significant positive effect on the Return on Investment(ROI) at the 5% alpha level of significant. This result is similar to the study of Wilbert et al (2023), Aniefor and Onatuyeh (2019), Faraz and Danish (2020) but against the study of Manzano (2019), Benter et al. (2018) and Peter and Charles (2015). This implied that using debt as a source of financing is giving a satisfactory rate of return on investment.

5 Conclusion and Recommendations

5.1 Conclusion

The study looked at Nigerian deposit money banks' financial health and debt financing. As demonstrated in the models represented by the coefficient of determination (R^2), the study indicated the degree to which each independent variable affected the dependent variable and provided an answer on the extent to which the fluctuations in the

dependent variable are caused by the independent variables. Based on our empirical data, the study concludes that the net profit margin of Nigeria's listed deposit money bank is significantly and favourably impacted by debt financing measures, including short- and long-term debt, asset tangibility, and debt-to-equity ratio. The study's second aim led it to the conclusion that the debt financing measures—the debt-to-equity ratio, asset tangibility, long-term debt, and short-term debt—have a major and favourable impact on the return on investment of Nigeria's listed deposit money banks.

5.2 Recommendations

Based on the result obtained from studying the effect of debt financing and financial stability using four different measurements of debt financing, the following recommendations are made;

- i. The management of listed deposit money banks in Nigeria should work assiduously to have an optimal capital structure for their companies to increase their return on investment.
- ii. The study's findings will help deposit money banks in Nigeria to make rational decisions to ensure profit maximization and reduce costs associated with debt capital. This will ultimately lead to the maximization of shareholders' wealth.
- iii. Asset tangibility also tends the profits downwards, which creates a linkage between tangibility, profits and debts. It has been observed that high debts lead to high tangibility but lower profits. Companies having a large firm size should not increase their physical assets through debt because it will affect their earnings.

REFERENCES

- Aamir, N., Muhammed, A.& Muhammed, U.K. (2021). Debt financing and firm performance; Empirical evidence from the Pakistan Stock Exchange. *Asian Journal of Accounting Research* 6(3), 234-334
- Ahmed, F.& Siddiqui, D. A. (2020). Impact of debt financing on performance; evidence from textile sector of Pakistan.
- Akaji O, Nwadiolor EO, Agubata N (2021). Effect of debt-equity financing on firms performance in Nigeria. *Journal of accounting and financial management* 7(3),73-81.
- Aniefor S.J and Onatuyeh A.E (2019). Effect of debt financing on the corporate performance; A study of listed consumer goods firms in Nigeria. *International Journal of academic accounting, finance and management research*. 3(5), 26-34
- Anis A, and Abdul Rahman S. (2022). Examined debt financing on financial performance; A study on the energy sector of Saudi Arabia. *International Journal of energy Economics and policy*. 12(6), 10-15.
- Arumona J, Lambe, I and Idogho A (2021)Effect of debt financing on the financial performance of listed consumer goods firms in Nigeria. *Bingham international journal of accounting and finance*. 2(1), 394-406

- Asmaul Husna, Ibnu Satria (2019). Effect of return on asset, debt to asset ratio, current ratio, firm size, and dividend. Payout ratio on firm value. *International journal of economics and financial issues*, vol 9, issue 5, 50-54.
- Baltaci, N and Ayaydin H (2014). Firm, Country and Macroeconomic Determinant of Capital Structure; Evidence from Turkish Banking Sector. *Emerging Markets Journal* 3(3).
- Benter, A., Willy M. and Joshua W (2018) Effect of debt financing options on financial performance of firms listed at the Nairobi securities exchange, *Kenya Research Journal of finance and Accounting*.9(10)
- Bitok F, Scholes M (2011). The pricing options and corporate liabilities. *Journal of political economy*,81,637-654.
- CIBN (2018), Corporate Financial Management Study Pack.
- David, M. (2017). Identifying and spurring high-growth entrepreneurship: Experimental evidence from a business plan competition. *American Economic Review*, 107(8):2278-2307.
- Deloitte. (2017). Global Corporate Treasury Survey 2017: Financial risk management in <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Finance/gx-afs-global-corporate-treasury-survey-2017.pdf>
- Donaldson, G. (1961). Corporate debt capacity: A study of corporate debt policy and the determination of corporate debt capacity. Division of Research Harvard University, Boston.
- Ebaid, I.E. (2009), The impact of capital structure choice on firm performance; empirical evidence from Egypt. *Journal of Risk finance*. 10(5), 477-487.
- Edu, G., Tobi, F., Bassey I., &Ekwere, E. (2016). Liquidity Management and the performance of banks in Nigeria (2000-2010). *International journal of academic research in accounting finance and management sciences* 6(1)
- Habib, H., Khan,F.& Wazir, M. (2016), Impact of debt on the profitability of firms; evidence from non-financial sector of Pakistan. *City university research journal* 6(1), 70-80
- Irby, M, Cooke, M and Bridget O (2010). Calls for reform of medical education by the Carnegie Foundation for the advancement of teaching; 1910 and 2010. *Academic medication* 85 (2), 220-7.
- Kwaku, D. (2015) Assessing Credit Risk management Practices in the banking industry of Ghana; Processes and challenges. *Global journal of management and business research*. 15(6), 1-10.
- Lenny Mamaro, Tsholofelo Legotlo (2020). The impact of debt financing on financial performance: Evidence from retail firms listed on the JSE. *The journal of accounting and management, Danubius University of Galati*. 3(10), 23-33.
- Lev, R. & Rocco, H. (2011). The dark side of bank wholesale funding. *Journal of financial intermediation*.20(2), 248-263.
- Manzona, F.W. (2019). Effect of debt financing on financial performance of listed firms at Nairobi securities exchange. A research project submitted to the school of Business, University of Nairobi

- Mohammed A. (2012). The effect of foreign Direct Investment on Nigeria's manufacturing sector. *Journal of international business and management*. 4(1), 140-148
- Murugesu, T. (2013). Effect of cash conversion cycle on profitability of listed plantation companies in Sri Lanka. *Research Journal of Finance and Accounting*. 18(4), 132-137.
- Nazir, A., Azam, M.& Khalid, M.U. (2021). Debt financing and firm performance; empirical evidence from the Pakistan stock exchange. *Asian Journal of Accounting* 6(3), 324-333.
- National Small Business Association. (2018). 2018 Small Business Taxation Survey. Retrieved from <https://www.nsba.net/wp-content/uploads/2018/09/2018-Small-Business-Taxation-Survey.pdf>
- Onyekwelu, U. L., Chukwani, V. N., & Onyeka, V. N. (2018). Effect of liquidity on the financial performance of deposit money banks in Nigeria. *Journal of economics and sustainable development* 9(4), 19-28.
- Peter, N.G.& Charles, G.K. (2015). Debt financing and financial performance of small and medium-size enterprises; Evidence from Kenya. *Journal of Economics, finance and accounting* 2(3).<https://doi.org/10.17261/Pressacademia.2015312967>
- Yinka, A.S, Taofeek, A, Abimbola C & Olusegun, A. (2015). Credit Risk Management and Financial Performance of selected Commercial Bank in Nigeria, *Journal of Economic and Financial Studies* 3(1), <https://doi.org/10.18533/jefs.v3i01.73>
- Maartje, P., & Jozef, R.P. (2020). Effect of motivation, leadership and organizational culture on satisfaction and employee performance. *Journal of Asian finance economics and business* 7(8):577-588.
- Modigliani, F., & Merton, H. M. (1958). The cost of capital, corporation finance and the theory of investment. 48(3), 261-297.
- Nirmala, D., Hari, H., Garbharran, M., & Odihiambo, N. (2014). Factors influencing debt financing decisions of corporations- theoretical and empirical; literature review. *Problems and perspectives in management* 12(4), 189-202.
- Pandey D(2020). Work stress and employee performance: An assessment of the impact of work stress. *International research journal of human resources and social science* 7, 124-135.
- Raza, H. (2014). Training and development impact on organization performance: Empirical evidence from oil and gas sector of Pakistan. *IOSR Journal of business and management (IOSR-JBM)*, 16, 67-72.
- Wilbert, M., James, K., Lovemore, C.& Tendai, M. (2023). The effect of debt financing on the financial performance of SMEs in Zimbabwe. *Journal of Cogent social sciences* 9(2), 1-9