RESEARCH ARTICLE

Effect of Interest Expenses on Retained Earnings of Deposit Money Banks in Nigeria

Nweke, Ukamaka Perpetua; Prof. Ifeoma Okwo and Prof. Chike Nwoha
[1-3]*Department of Accountancy, Enugu State University of Science and Technology (ESUT), Enugu*

Corresponding Author: *Nweke, Ukamaka Perpetua| Department of Accountancy, Enugu State University of Science and Technology (ESUT), Enugu*

ABSTRACT

The study evaluated the effect of interest expenses on retained earnings of deposit money banks in Nigeria. Specifically, the study examined the effect of interest on deposit, interest on debt securities and interest on loans on retained earnings of deposit money banks in Nigeria. The study targeted the entire twenty-three (23) deposit money banks listed on the Nigeria Exchange Plc during the period out of which five (5) were sampled for the study. Only deposit money banks that consistently used debt securities during the period were considered in the sample. Time series data spanning the period from 2011 to 2020 were collected and analysed using multiple regression analysis. Results of the analysis indicate that the effect of interest on debt securities and interest on loans negatively and insignificantly affect retained earnings of deposit money banks in Nigeria. Result also indicate that the effect of interest on deposit on retained earnings is positive, but statistically none-significant. The implication of these findings is that deposit liability and equity are the preferred financing options for the deposit money banks as opposed to term loans and debt securities. In line with these findings, the study strongly recommends that deposit money banks' management in Nigeria should intensify their efforts in deposit mobilization so as to increase their banks' retained earnings. Since the effect of debt security on retained earnings is negative and insignificant, the study further recommends that the banks' management should use more of equity as source of finance. Finally, we recommend that the management should use more of equity to finance their business operations. This is because the findings from the study show that interest on loans negatively and insignificantly affects retained earnings of the bank.

Keywords: Retained Earnings; Deposit Money Banks; Interest Expenses; Nigeria

Introduction

The primary responsibility of banks in any economy is financial intermediation, that is, moving funds from surplus economic units of the economy to the deficit economic units by accepting deposits, borrowings and selling debts securities and channeling them into lending activities (Ajayi & Atanda, 2012). However, the chronic inflation in Nigeria and high funds acquisition cost have been one of the major sources of concern for the country's economy in recent times. The high cost of funds acquisition is having its tolls in the lending activities of deposit money banks as this is transmitted to the banks' lending by way of high interest rate. Thus, the high cost of lending which is couple with the stringent loan conditions by Nigeria banks is making borrowers shy away from taking bank loans and to search for alternative sources of funding (Efanga; Hanson; Umoh & Umoh, 2020).

Wright (2012) defines interest expenses as the price of borrowing money, and is a crucial determinant of the price of assets, especially financial instruments like stocks and bonds and general economic conditions, including economic growth. Corb (2012) describes interest as an economic tool used by the Central Bank to control inflation and boost economic development. Interests are the reward paid by a borrower to a lender for the use of money for a period. Interest expenses are expressed in percentages, per annum to make them comparable and are quite often referred to as the price of money. Akintola & Adedire (2020) states that interest is one of the monetary policy instruments which has a significant impact on real economic activities such as the level of savings, spending, investment and which orchestrates economic booms or recessions. In the Nigerian economy, the minimum rediscount rate now monetary policy rate is the official interest rate of the Central Bank of Nigeria which anchors all other interest rates in the money market and the economy. CBN (2016) states that monetary policy rate is the benchmark against which other lending rates in the economy are pegged. An increase in the monetary policy rate will cause the prime lending rate and other lending rates by the deposit money banks to rise.

Banks obtain funds for financial intermediation from various sources. The cost of these funding sources determines the interest rate on banks' lendings. Shires (2018) states that deposit money banks as a financial intermediary offer business loans and trade financing in addition to the more traditional deposit, withdrawal and transfer services. With such a diverse business profile, the sources of funds in deposit money banks are varied. Their major sources of funds include, equity funds (share capital and reserves), deposits, term loans, lease and so on. The banks pay interest on each of these funding sources, called interest expenses. Hence interest expenses constitute one of the remarkable items of expenses for deposit money banks. The major interest expenses are interest on lease, interest on deposits, interest on debt securities and interest on loans. This study examines the effect of these interest expenses on retained earnings of deposit money banks in Nigeria.

Statement of the Problem

Governments the world over in an attempt to evolve an efficient banking system have tended to focus on the activities of deposit money banks due to the central role they play in the development of a robust and sustainable economy. This is not just for effective intermediation but also for the protection of the depositors' funds, maintenance of public confidence as well as to guard against systematic risk and large scale failure of the sector. Deposit money banks' operations are highly regulated and supervised, either directly or indirectly in virtually all the countries of the world. One of the key regulation areas in banks is the interest rate. This is because interest rate is one of the key drivers of the economy. Interest is one of the monetary policy instruments which has a significant impact on real economic activities such as the level of savings, spending, investment and which orchestrates economic booms or recessions. In a free market economy, interest is determined by micro economic variable like inflation, foreign exchange rate among others.

In Nigeria, the frequent upwards movement in the microeconomic variables such as inflation, foreign exchange rate and commodity prices among others leads to unsuitable interest rate in the country. The changes force the Central Bank of Nigeria to adjust the minimum rediscount rate from time to time. This adjustment affects all bank rate including the interest on lease facility, interest on deposits, interest on debt securities and interest on term loans. This raises the cost of borrowing and thus interest expenses of deposit money banks in the country. This frequent increase in interest expenses affects banks negatively to the extent that some of the banks find it difficult not only to play their traditional role of financial intermediation, but also to retain some earnings for future growth and expansion. It is against this backdrop that this study examines the effect of interest expenses on retained earnings of deposit money banks in Nigeria.

Objectives of the Study

The main objective of the study is to ascertain the effect of interest expenses on retained earnings of deposit money banks in Nigeria. The specific objectives of the study are:

1. Examine the effect of interest on deposits on retained earnings of deposit money banks in Nigeria.
2. Ascertain the influence of interest on debt securities on retained earnings of deposit money banks in Nigeria.
3. Explore the sensitivity of retained earnings to interest on loans of deposit money banks in Nigeria.

Statement of Hypotheses

The following null hypotheses were formulated to address the research questions:

1. Interest on deposits does not significantly affect retained earnings of deposit money banks in Nigeria.
2. Interest on debt securities does not significantly affect retained earnings of deposit money banks in Nigeria.
3. Interest on loans does not significantly affect retained earnings of deposit money banks in Nigeria.

Review of Related Literature

Conceptual Review

Interest Expenses

Irungu (2013) describes interest rate as the price of money. It can either be nominal or real. Nominal interest rate can be measured in naira terms, not in terms of goods. The nominal interest rate measures the yield in naira per year, per naira invested while the real interest rate is corrected for inflation and is calculated as the nominal interest rate minus the rate of inflation. Irungu (2013) equally posits that interest rates are derived from macroeconomic factors that influence the economic growth in an economy. Inflation and inflationary expectations can press interest rate upward which affects lending rates resulting to reduce credit demand and lending ability of Commercial Banks. Albertazzi & Gambacorta (2012) asserts that when interest rate increases, businesses need to pay more for borrowing thereby raising the interest expense. In other words, their cost of taking advance increases which diminishes their profitability and because of decline in profitability market price of their share likewise decline. Besides, an increase in interest rate likewise diminishes the value of corporate bond. The interest rate that a bond pays to its holder isn't much alluring because of high interest rate.

Gilchris, (2013) states that although it is difficult to determine the direction of the relationship between interest rates and profitability, studies confirm that interest rates instability affects Commercial Banks' financial performance while other studies give contradictory findings. The Central banks also lends Commercial Banks funds. Money borrowed from the Central Bank is to be repaid at a particular interest rate (Monetary Policy Rate). This makes interest rate a powerful government regulatory tool for determining other interest rates in the banking industry. Efanga, et al (2020) opine that interest is the opportunity cost of borrowing money from a lender to finance investment project, the return being paid to the provider of financial resources, forgoing the fund for future consumption. Interest rates are normally expressed as a percentage. The volatile nature of interest is determined by many factors, which include taxes, risk of investment, inflationary expectations, liquidity preference, market imperfections in an economy among others. There are several forms of interest expenses by banks depend ending on the source of fund, hence we have interest on lease, interest on deposit, interest debt instruments and interest on term loans.

Interest on Deposits

Kengan (2021) defines interest on deposit as the interest paid by a financial institution to an account holder on account of deposits made with the institution. *Banks encourage long-term deposits not only for the client's benefit from the extended interest but because it offers more liquidity to the institution.* Banks typically offer better rates for accounts holding larger balances. This is used as an incentive to attract high-value clients with considerable assets. The greater the sum that is deposited, the larger the return over time. While this may still be seen as a slower growth approach to generating returns, such accounts can offer more stability compared with more volatile, high-risk financial products. Banks tend to offer competitive interest rates for these deposits in order to better attract customers. Depending on the product, premium deposit interest rates may only be available under certain terms such as balance minimums, and possibly maximums. Certain accounts also require a set length of time, six months, one year, or multiple years, that the money must remain deposited and cannot be accessed by the account holder. If the deposit is accessed early, there may be penalties and fees incurred, including the potential loss of the agreed interest rate if the balance remaining in the account falls below the minimums.

Interest on Debt Securities

Obaidullah (2020) describes debt securities as financial instruments that contain a promise from the issuer to pay the holder a defined amount by a specific date, that is, the maturity date of the debt security. Debt securities are negotiable instruments, which means that ownership can be transferred from one party to another easily. Bonds (government, corporate, or municipal) are one of the most common types of debt securities, but there are many different examples of debt securities, including preferred stock, collateralized debt obligations and mortgage-backed securities. Fernando (2021) identifies some of the features of debt securities as: the coupon rate which is the interest rate that issuers need to pay. Coupon rates can be fixed throughout the life of the security or vary depending on inflation and the economy. Issue date and price which are the price and date at which the debt security was first issued. Maturity date which is the date that the issuer needs to repay the principal and remaining interest.

It's important to note that term length will have an effect on price and interest rates as investors look for higher returns with longer investments. Yield-to-maturity, which sis the annual rate of return that investors expect to earn if the debt is held to maturity. The interest on the debt security constitute an interest expenses to the issuing bank.

Interest on Loans

Pritchard (2020) describes interest on loan as expense incurred by an entity for borrowed funds. Interest is the compensation paid to the lender for the risk of lending the money and their inability to use the money anywhere else during the period. Interest expense is a non-operating expense shown on the income statement which represents interest payable on any borrowings. It is calculated as a percentage of a loan balance, paid to the lender periodically for the privilege of allowing the borrower using their money. The amount of interest is usually quoted as an annual rate, but interest can be calculated for periods that are longer or shorter than one year. The decision to pay interest depends on benefit in return, and the decision to earn interest depends on the alternative options available for investing your money.

KPMG (2020) asserts that firms primarily have two sources of funds, debt and equity, and the proportional mix of these funds makes up a firm's capital structure. While dividend is paid to equity holders, interest is paid on debt. The debt in the capital structure commits a firm to paying out a proportion of its income in the form of interest expense. These interest expenses are usually deductible in arriving at the income tax payable, thus providing the firm with an incentive to finance their operations with debt rather than equity, especially in countries with high tax rates.

The major differences between debt securities such as bonds and term loans is that while debt securities can be transfer from one entity to another, loans cannot be transferred.

Retained Earnings

Chasan (2012) define retention earnings or retained surplus as that portion of a firm's profits that is kept back into the business for reinvestment into the business or for debt payments, instead of being distributed as dividends to shareholders. Ravi (2013) also asserts that earnings retained are the most important sources of financing growth of a firm. The level of internal funds conveys information about growth prospects of the firm. Growth firms pay lower dividends, reinvest more of their earnings, and provide a greater percentage of their total returns in the form of capital gains. Firms with a few major investment opportunities would limit paying out a larger percentage of their earnings. For this reason, higher dividends are paid in stable, low-growth industries. Conversely, high-growth firms with lots of investment opportunities are likely to pay low dividends because they have profitable uses for the capital.

Akinkoye & Akinadewo (2018) assert that the amount of retained earnings has now become an important issue to investors and other stakeholders because it is another way to evaluate the effectiveness of management to bring improvement in market value of their firms. That is shareholders now consider as part of their investment criteria the extent to which firms use retained earnings and they also consider this in measuring how much value in terms of capital gain, business growth and asset net worth have been added by the firm's retention overtime. Before buying, investors normally ask themselves not only whether a firm can make profits, but whether management can be trusted to generate growth with those profits.

Theoretical Framework

Two theories were adopted for the study, they are: Financial Intermediation Theory developed by Gurley and Shaw in 1960 and Capital Structure Irrelevance Theory propounded by Modigliani &Miller in 1963. However, the study is anchored on the Financial Intermediation Theory.

Financial Intermediation Theory

Gurley & Shaw developed the Financial Intermediation Theory in 1960. Gurley and Shaw (1960) in order to solve the short comings that were observed in direct financing method explained the importance of intermediation process of financial intermediaries in the economy as a whole. The Financial Intermediation Theory is based on the Theory of Informational Asymmetry and the Agency Theory. In principle, the existence of financial intermediaries is

explained by the existence of the following categories of factors: high cost of transaction, lack of complete information in useful time; and the method of regulation.

Based on this theory, financial intermediaries are regarded as commercial companies that produce different types of loaning products for the individuals who wish to borrow. The main finished products of financial intermediaries are the loans granted to clients, and the main variable inputs are the deposits attracted from the depositors. Furthermore, financial intermediaries are regarded as companies that have as sole purpose the maximization of profit, profit that occurs as a result of the difference between the interest charged on loans and the interest paid on deposits. The maximization of profit is made when the difference between the total incomes minus the total cost is maximum. The total financing cost (interest expenses) such as interest on deposit, interest on debt securities and interest on term loans must be taken into consideration in arriving at the maximum cost.

Capital Structure Irrelevance Theory

The capital structure irrelevance theory was first propounded by Modigliani & Miller in 1963.The theory argued that the quantity of debt within the capital structure doesn't have an effect on the performance and the worth of the firm. They argued that where corporate income taxes and distress costs are not present in the business environment, the use of financial leverage has no effect on the worth of the firm. The value of the firm depends on the earnings and risk of its assets rather than the way in which its assets have been financed. The irrelevance theory however has a number of impractical assumptions that do not apply in a real-world business environment.

In order to deal with this problem, Modigliani & Miller (1963) incorporated the impact of corporate income taxes, and the potential impact of distress cost, for purposes of determining the optimal capital structure for a company into their Irrelevance Proposition theorem. The relevance of capital structure hypothesis appreciated the fact that corporate income taxes do exist in reality and interest paid to debt-holders is treated as a deductible expense. Thus interest payable by firms saves taxes. This makes debt financing advantageous. They showed that the value of the firm will increase with debt due to deductibility of interest charges for tax computation and the value of the levered firm will be higher than that of the unlevered firm. The MM's tax relevance hypothesis suggested that, because of the tax deductibility of interest charges a firm can increase its value or lower its cost of capital continuously with leverage. Thus, optimal capital structure is reached when the firm employs 100% debt.

In financial intermediation theory, Gurley and Shaw (1960) argue that profit occurs as a result of the difference between the interest charged on loans and the interest expenses on borrowed funds. Examples of interest on borrowed funds are: interest on deposits, interest on debt securities and interest on term loans. The study on the other hand, is the effect of interest expenses on retained earnings. The study is anchored on Financial Intermediation Theory because it pinpointed the main objective of the study.

Empirical Review

Akintola and Adedire (2020) studied interest rates and return on equity of selected deposit money banks in Nigeria from 2008 to 2017. Ten (10) deposit money banks were listed on the Nigeria Stock Exchange during the period were selected for the study. Secondary data were collected from the annual reports and financial state of the selected banks and analyzed using panel data regression analysis. Panel unit root test and pedroni residual co-integration test were also applied on the data. Findings indicate that interest rate exerts positive and significant effect on return on equity of deposit money banks in Nigeria. The study therefore recommends that there is need to strengthen bank lending rate and deposit rate policy through effective and efficient regulation and supervisory framework.

Yimka, Alalade and Olusegun (2020) analyzed the influence of monetary policy on the financial performance of deposit money banks in Nigeria. The effect of liquidity ratio, lending rate, loan to deposit ratio and cash reserve ratio on financial performance of the deposit money banks were examined as measured by their net worth and total credits. Time series data of 35 years (1984 to 2018) were used to conduct the study. All deposit money banks as captured by the Central Bank of Nigeria Statistical Bulletin (2015) were considered. The data were analyzed using descriptive, stationarity test, ordinary least square method and the Autoregressive Distributed Lag method. A short run model of net worth and long run model for both the net worth and the total credits were estimated. In the long run, monetary policy variables including liquidity ratio, lending rate, loans to deposit ratio and cash reserve ratio had no significant effect on the net worth. However, in the short run, variations in the liquidity ratio, loans to deposit ratio and the cash reserve ratio for previous years had significant effect on the net worth in the current year. When

financial performance is measured as total credits, the liquidity ratio and loans to deposit ratio had positive significant effect in the long run. The cash reserve ratio had a negative significant effect in the long run. The log of lending rate was insignificant in both the long and short run.

Nzau, Kung and Onyuma (2019) investigated the effect of debt in form of bond issuances on listed firm financial performance as measured by return on equity. Secondary data were collected dated from all the 6 firms that issued bonds in tranches or additional bonds within the period 2008 to 2017. The data were analyzed using regression to examine whether bonds issuance has any effect return on equity of the firms. Results suggest that about 75.4 percent of variance in financial performance could be explained by bond issuance as characterized by bond price, bonds coupon rate, bond proportion, and bond yield to maturity. Bond proportion and bond yield to maturity exalted statistically significant effect on financial performance. It was concluded that bond issues affected financial performance of listed firms in Kenya.

Karuma, Ndambiri and Oluoch (2018) examined the effect of short-term debt, long-term debt, interest rates and corporation tax rates on the financial performance of manufacturing firms listed in Nairobi Securities Exchange during a five-year period (2013- 2017). The data collected from the firms were analyzed using, descriptive statistics, correlation and multiple linear regression analysis. Results indicates that accounts payable was found to be significant to return on assets return on assets. Bank overdraft was found not to be significant to return on assets. Debentures was found to be significant to return on assets. Bank loan and interest payments were found not to be significant to return on assets. Interest on tax was found to be significant to return on assets. Expenses deductibles were found not to be significant to return on assets.

Mbabazize, Turyareeba, Ainomugisha and Rumanzi (2020) examine the effect of monetary policy on the profitability of commercial banks in Uganda during COVID 19 period (2010-2018). Data were collected from all the registered commercial banks operating in Uganda during the study period. Various monetary policy variables are included in the empirical model as predictor variables. Return on Assets is used as a measure of bank profitability. A dynamic two-step System Generalized Method of Moments panel estimator is applied to estimate the empirical model. Monetary policy in terms of its link to the lending rate has a significant causal effect on Return on Assets, suggesting that interest rate changes predict bank profitability of commercial banks in Uganda. Further, results show that a rise in core inflation has a significant negative causal effect on the banks' profitability and that there is a significant lagged effect of Return on Assets. The 91-day treasury bill rate and money supply were insignificant in predicting bank profitability. Unlike previous related studies which have focused on major advanced economies and a limited number of studies that have considered only a few developing countries like Nigeria and Kenya, the current study provides empirical evidence on the link between monetary policy and commercial bank profitability in Uganda.

Efanga, Hanson, Umoh and Umoh (2020) analyze the impact of interest rate on commercial bank lending in Nigeria between 1981 to 2014. The independent variables of the study are lending rate, cash reserve ratio, and statutory liquidity ratio. Data was collected from the central bank of Nigeria (CBN) statistical bulletin, 2018 while multiple regression was used in analyzing the data. The result showed a negative relationship between commercial bank lending and lending rate, there existed also a positive relationship between gross domestic product and commercial bank lending. Since the lending rate has a negative relationship with commercial bank lending, this study recommended that the CBN should reduce the monetary policy rate so as to reduce the high cost of borrowing.

Methodology

This study adopted ex post facto research. Hence, the study was based on historical financial data collected from the annual accounts and financial statements of the selected deposit money banks listed on the Nigeria Exchange Plc during the period of 2011 to 2020. The study was conducted in Nigeria and specifically on deposit money banks. A total of 23 deposit money banks were listed on the Nigeria Exchange Plc during the period. These banks constituted the population of the study. A sample of 5 banks was selected for the study. The 5 selected banks are: Union Bank Nigeria Plc, United Bank for Africa Plc, Sterling Bank Nigeria Plc, Access Bank Nigeria Plc and Fidelity Bank Nigeria Plc. Only banks that have the complete variables in their annual financial statement are selected.   The study adopts secondary sources of data which were obtained from the published annual accounts and financial statements of the selected deposit money banks listed on the Nigeria Exchange Plc. Descriptive Statistics and Panel Data Regressions Analysis were used to analyze the data collected from the selected banks. The independent variables/measures of

interest expenses are: interest on deposits, interest on debt securities and interest on loans, while the dependent variable is retained earnings.

Model Specification

The researcher developed the following model in line with Panel Least Square Regression Model:

$Y_{it} = (\beta_0 + \beta_1 + X_{it}) + (\beta_2 + X_{2t)} + (\beta_3 + \beta_3 + X_3 t)$

$RTE = \beta_0 + \beta_2 IDPTt_{-1} + \beta_3 IDTSt_{-1} + \beta_3 ILNSt_{-1} + \epsilon$

Where:

RTE = Retained Earnings

IDPT = Interest on Deposits

IDTS = Interest on Debt Securities

ILNS = Interest on Loans

β = Beta Coefficient of the Variables

ϵ = Error Margin

Data Analysis

The processed panel data from the selected banks were analyzed using descriptive statistics and panel data regression analysis and the results presented in tables 4.2 and 4.3

Table 1: Descriptive Statistics

	RETTA	INTDTTA	INTDSTTA	INTLTTA	LNTA
Mean	-0.004076	0.003981	0.003981	0.005380	14.37940
Median	0.011225	0.002981	0.002981	0.003256	14.25003
Maximum	0.254818	0.013977	0.013977	0.051280	15.97650
Minimum	-0.261870	0.000000	0.000000	0.000000	13.13043
Std. Dev.	0.086157	0.004087	0.004087	0.009506	0.690751
Skewness	-1.484585	0.998609	0.998609	3.970325	0.530937
Kurtosis	7.534388	2.901032	2.901032	18.81665	2.569430
Jarque-Bera	61.20133	8.330571	8.330571	652.5423	2.735344
Probability	0.000000	0.015525	0.015525	0.000000	0.254699
Sum	-0.203821	0.199067	0.199067	0.269013	718.9699
Sum Sq. Dev.	0.363729	0.000819	0.000819	0.004428	23.37971
Observations	50	50	50	50	50

Source: Author's E-Views Outputs

Table 1 presents the descriptive statistics of the variables, namely, interest on deposit, interest on debt securities, interest on loans and retained earnings. Results from the table show that the mean values of the variables are: -0.0041, 0.0040, 0.0040, 0.0054 and 14.3794 respectively while the standard deviations are: 0.0862, 0.0041, 0.0041, 0.0095 and 0.6908 respectively. These results suggest that all the variables are volatile judging from the difference between the standard deviations and the mean of the variables.

Table 2: Panel Least Squares Regression Results

Dependent Variable: RETTA
Method: Least Squares
Date: 05/11/22   Time: 20:45
Sample: 1 50
Included observations: 50

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INTDTTA	4.194601	3.036512	1.381388	0.1737
INTLTTA	-0.561383	1.313293	-0.427462	0.6710
LNTA	-0.001146	0.001343	-0.853475	0.3977
R-squared	0.048029	Mean dependent var		-0.004076
Adjusted R-squared	0.007520	S.D. dependent var		0.086157
S.E. of regression	0.085832	Akaike info criterion		-2.014714
Sum squared resid	0.346259	Schwarz criterion		-1.899993

| Log likelihood | 53.36786 | Hannan-Quinn criter. | -1.971028 |
| Durbin-Watson stat | 1.039003 | | |

Source: Author's E-View Output

The model summary in Table 2 revealed that when retained earnings were used as the predictor variable of the study, the adjusted coefficient of determination (R^2) value was 0.008. This implies that only 01% of the changes in retained earnings of the deposit money banks in Nigeria are predicted by the independent variables comprising of interest on deposits, interest on debt securities and interest on loans while the remaining 5% is predicted by error terms and variables not covered by the study. It was further observed from the model summary that the coefficient of Durbin-Watson Statistic is 1.039, which is closer to 1 than 0.

Test of Hypotheses
Decision Rule:
Level of significance (α) = 0.05. Reject the null hypothesis if the significant value in the regression coefficient is less than the level of significance (0.05), otherwise accept the null hypothesis. In line with this decision rule, the results of the test of hypotheses are hereby presented below:

Hypothesis One
H_0: Interest on deposits does not significantly affect retained earnings of deposit money banks in Nigeria.
H_1: Interest on deposits significantly affects retained earnings of deposit money banks in Nigeria.
The multiple regression model in Table 2 reveals that the significant value of interest on deposit is significant at 0.05 level of significance (0.05 < 0.174). Based on this, we accept the null hypothesis and reject the alternative. That is, interest on deposit does not significantly affect retained earnings of deposit money banks in Nigeria.

Hypothesis Two
H_0: Interest on debt securities does not significantly affect retained earnings of deposit money banks in Nigeria.
H_1: Interest on debt securities significantly affect retained earnings of deposit money banks in Nigeria.
The regression model also reveals that the significant value of interest on debt securities is not significant at 0.05 level of significance (0.05<0.671). Based on this, we accept the null hypothesis which states that interest on debt securities does not significantly affect retained earnings of deposit money banks in Nigeria.

Hypothesis Three
H_0: Interest on loans does not significantly affect retained earnings of deposit money banks in Nigeria.
H_1: Interest on loans significantly affects retained earnings of deposit money banks in Nigeria.

The regression model further reveals that the significant value of interest on loans is significant at 0.05 level of significance (0.05 < 0.398). Based on this, we also accept the null hypothesis and reject the alternative. That is, interest on loans does not significantly affect retained earnings of deposit money banks in Nigeria.

Discussion of Findings

Interest on Deposit and Retained Earnings: Based on these results, we state that interest on deposit positively and insignificantly affects retained earnings of deposit money banks in Nigeria during the period. The finding is consistent with Financial Intermediation Theory developed by Gurley & Shaw in 1960. The theory stated that the sole purpose of firms is profit maximization, and that profit occurs as a result of the difference between the interest charged on loans and the interest paid on deposits. The maximization of profit is made when the difference between the total incomes minus the total cost is maximum.

The result is also consistent with: Akintola and Adedire (2020) who studied interest rates and return on equity of selected deposit money banks in Nigeria. Findings indicate that interest rate exerts positive and significant effect on return on equity of deposit money banks in Nigeria. Alfredo; Lorenzo and Pavel (2019) who studied the relationship between interest rates and bank business models in USA. The results suggest that interest rates are positively related to net interest margins and negatively to non-interest income. No empirical study reviewed seems inconsistent with this result.

Interest on Debt Securities and Retained Earnings: Results from the regression model also indicated that the effect of interest on debt securities on retained earnings of the banks is negative at -0.561383, but statistically insignificant

(0.05<0.671. Based on these results, we state that interest on debt securities negatively, but insignificantly affect retained earnings of deposit money banks in Nigeria during the period. The result is inconsistence with: Akintola and Adedire (2020) who studied interest rates and return on equity of selected deposit money banks in Nigeria. Findings indicate that interest rate exerts positive and significant effect on return on equity of deposit money banks in Nigeria. Karuma; Ndambiri and Oluoch (2018) who examined the effect of short-term debt, long-term debt, interest rates and corporation tax rates on the financial performance of manufacturing firms listed in Nairobi. Debenture was found to significantly affect return on assets of the firms.

Interest on Loans and Retained Earnings: Based on these results, we conclude that interest on loans negatively and insignificantly affects retained earnings of deposit money banks in Nigeria during the period. This result is, however, disagree with: Mbabazize, Turyareeba, Ainomugisha and Rumanzi (2020) who studied the effect of monetary policy on the profitability of commercial banks in Uganda. The study provides empirical evidence on the link between monetary policy and commercial bank profitability in Uganda. Alfredo, Lorenzo and Pavel (2019) who studied the relationship between interest rates and bank business models in USA. These results suggest that interest rates are positively related to net interest margins and negatively to non-interest income.

This result is consistent with Omollo (2018) who investigated the effect of debt financing options on financial performance of firms listed at the Kenya. Findings indicate that short-term, long-term and total debt have negative and statistically significant effects on returns. Ndubuaku, Ifeanyi, Nze and Onyemere (2017) who analyzed the impact of monetary policy (interest rate) regimes on the performance of the Banking Sector in Nigeria. Results show that monetary policy rate during the SAP period did not have significant impact on the total assets value, deposit mobilization, loans and advances and credit to the private sector. Karuma, Ndambiri and Oluoch (2018) who examined the effect of short-term debt, long-term debt, interest rates and corporation tax rates on the financial performance of manufacturing firms listed in Nairobi. Bank loan and interest payments were found not to be significant to return on assets. Efanga, Hanson, Umoh and Umoh (2020) who analyze the impact of interest rate on commercial bank lending in Nigeria. The result shows a negative relationship between commercial bank lending and lending rate.

Summary of Findings
We summarize the findings as hereunder in line with the data analysis, findings and the deduced discussions of the study:
  i.   Interest on deposit positively and significantly affect retained earnings of deposit money banks in Nigeria during the period.
  ii. Interest on debt securities negatively, but insignificantly affect retained earnings of deposit money banks in Nigeria during the period.
  iii. Interest on loans negatively and significantly affect retained earnings of deposit money banks in Nigeria during the period.

Conclusion
The study examined the effect of interest expenses on retained earnings of deposit money banks in Nigeria. The entire 23 deposit money banks listed on the Nigeria Stock Exchange during the period were targeted out of which 5 were sampled for the study. Only deposit money banks that consistently used debt securities during the period were considered in the sample. Time series data spanning the period from 2011 to 2020 were collected and analyzed using panel data regression analysis. In line with the findings of the study, we conclude that the independent variable, namely, interest on deposit, interest on debt securities and interest on loans were good predictors of retained earnings of the bank during the period. We also conclude that the effect of interest on debt securities and interest on loans negatively and insignificantly affect retained earnings of deposit money banks in Nigeria. The study further concludes that the effect of interest on deposit on retained earnings is positive, but statistically none-significant.

Recommendations

Based on the findings and conclusions, we recommend the following for the management of deposit money banks in Nigeria:

i.   This study strongly recommends that deposit money banks' management in Nigeria should intensify efforts on deposit mobilization so as to increase their banks' retained earnings. It could be inferred from the findings of the study that increase in deposits liability of the banks increases net interest income and retained earnings of the deposit money bank.

ii. Since the effect of debt security on retained earnings is negative and insignificant, the study further recommends that the banks' management should use more of equity as source of finance.

iii. Finally, we recommend that the management should use more of equity to finance their business operations. This is because the findings from the study show that interest on loans negatively and insignificantly affects retained earnings of the bank.

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