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Effect of Assets and Liabilities Management on the Financial Performance of Deposit Money Banks in Nigeria

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Abstract: *This research appraised the effect of Assets and Liabilities Management on the financial performance of Deposit Money Banks in Nigeria. It specifically examines the effects of deposits, loans and advances and shareholders' funds on the Profit after Tax (PAT) of First Bank, Zenith Bank and Wema Bank. Annual statistical bulletin and audited financial statement of the three selected Nigerian Deposit Money Banks were used for the analysis. A purposive sampling technique was adopted. Analysis revealed that the independent variables identified in the study are statistically significant at 5% confident level. Also it is revealed that Deposit from Customers (DL) has stronger effect on profitability of DMBs compared to CLA (Customers Loans and Advances) and SHF (Shareholder's fund), the beta coefficient of 1.74E+12 reveals this findings, also the p-val showing 0.0000 affirms this findings, as the lower the p-val the higher the confidence in the rejection of the null hypothesis. In addition to the findings, Sum squared residual value showing 4.59E+27, which reveals the ambiguity of the error term. The study concluded that a proper management of assets and liabilities increases the financial performance of deposit money banks in Nigeria and recommends that Banks should engage in proper monitoring of the loan management in order to reduce the incidence of high rate of non-performing loan and ensure enough diversity of its funds in order to ensure maximum profitability. Also, they should also consider factors such as growth of the economy, inflation rate, monetary policies etc that may affect financial performance.*

Keywords: Assets and Liabilities Management (ALM), Deposits Money Bank, Deposit, Loans and advances, and Financial performance

1.0 INTRODUCTION

Deposit Money Banks over time have always played vital roles in the economic development of a nation. They act as the backbone of economic growth and prosperity by acting as a catalyst in the process of development. (Ajibola & Olusegun 2016). They perform financial intermediation function through mobilization of deposits from the surplus units of the economy and disbursement of credit in different sector(deficit units) of the economy. The performance of these functions by bank opens them to several risks such as Liquidity risk, Interest rate risk, capital market risk, currency risk management and so on; prominent among these is liquidity risk, credit risk and Interest rate risk. While liquidity risk is the risk arising when the bank is unable to meet its obligations as they become due, credit risk is the non-fulfillment of financial obligations on the part of the other party of a contract and interest rate risk is the risk of losses resulting from movements in interest rates and their impacts on future cash-flows.
One of the primary causes of these risks is mismatch of maturities of assets and liabilities in terms of deposits and loans

The primary aim of commercial Banks is; profit maximization, risk control, liquidity / capital adequacy and to increase its market share. To achieve all these, there is need for proper assets and liabilities management in the bank. (Njogo, Ohiaeri & Omisakin, 2014).

Asset-liability management is the prerequisite condition for the efficiency and growth of Deposit Money Banks. The stability of Deposit Money Banks as whole in the economy depends on proper Asset-liability management structures. Better Asset-liability management has the tendency to manage risks and shocks that Deposit Money Banks can face (Isaac & Akinwunmi 2018)

The concept of the ALM was developed as a hedging reaction against the risk of financial intermediation. Asset and liability management simply refers to the process by which an institution manages its balance sheet in a strategic manner in order to accommodate risk faced by it (Sanjay 2015).Asset liability management in commercial banks is determined by the ability of the banks to retain capital, absorb loan losses, support future growth of assets and provide return to investors (Makau & Mamba, 2014).

Asset Liability Management (ALM) involves matching the timings and values of the cash inflows with cash out flows in banks keeping in mind the minimization of consequential risks. Banks usually borrow money for short duration but lend it for long and therefore cause liquidity riskin banking operations arising from the mismatch between cash inflows and cash outflows. Another fact that exacerbates the problem and enhances the requirement of ALM is that banks are highly leveraged institutions that are performing their operations being several times their own funds. Volatility in Interest rates and the highly intensified competition

of the modern banking sector and increasing expectations of customers has made the matters more challenging. Therefore, for the sake of survival and achieving desired level of earnings, ALM has become an essential strategy. Asset Liability Management is the management of the total balance sheet dynamics and it involves quantification of risks and conscious decision-making with regard to asset-liability structure in order to maximize the interest earnings within the framework of perceived risks. The primary objective of Asset Liability Management is not to eliminate risk, but to manage it in such a way that the volatility of net interest income is minimized in the short run and economic value of the organization is protected in the long run.

In a Bank's balance sheet, assets include loans and advances granted to customers, investment securities, properties and equipment among others while the liabilities side includes deposits from customers, borrowings and so on. Since the main goal of any institution is to maximize profits, Banks will want to ensure maximum return on their dealings. The largest source of income to the bank is interest income from lending activity less interest paid on deposits and debt. But it should be noted that banks cannot give out loans without deposit and banks primarily makes their profit through loan creation. (Isaac &Akinwunmi 2018)

The profitability and overall financial performance of commercial banks is very vital for the smooth operation of the financial system of a country. The profitability of these institutions is largely dependent on how they perform the financial intermediation functions. In the financial intermediation process of Deposit Money Banks, they incur costs on their liabilities and earn income on their assets. Hence, the financial performance of Banks will depend on how well they have been able to manage their assets and liabilities through a proper balancing and matching of those assets with liabilities while maximizing profit at the same time

It is worthy to note that determinants of bank profitability are different in banks because of difference in operation, internal external factors and structural affiliation among others influences banks' financial performance.

The ultimate concern of ALM process is to maximize the interest earnings within the perceived risks framework. The Asset Liability Management decisions do not entrust upon eliminating risk but to manage them in such a way that the net interest income is optimized. ALM comprises of micro and macro level objectives. At micro level, it focuses on fulfillment of two objectives simultaneously. It ensures optimization of profitability through matching of prices while ensuring sound liquidity position matching of maturity durations. The matching of Prices basically targets to maintain income generation by proper deploying of liabilities at a rate greater than the costs. Similarly, for ensuring liquidity the assets/liabilities are grouped on the basis of their respective maturing profiles. Any difference in this regard which is termed as "GAP" is then evaluated by the identification of future requirements of finance. This step is very significant as the impact of liquidity risk of financial intermediation is minimized during the whole process. However, ensuring profitability by prices matching and ensuring liquidity by maturity profiles matching is not a simple task. At macro-level, ALM helps in the formulation of a vital business policy framework that is responsible for efficient allocation of funds and offering of banking products with most suitable pricing decision.

1.2 STATEMENT OF THE PROBLEM

The primary function of Deposit Money Banks is the mobilization of funds from the surplus unit and its allocation to the deficit unit of the economy – which is known as financial intermediation. This process enables the Bank to generate income on the funds so given out to the deficit sector less other expenses. The financial intermediation process is not as easy as it sounds. Proper management of these funds (Assets and Liabilities management) is so important to enable the Banks achieve its objective. However, this has been an important area of concern to Deposit Money Banks as they all strive to maintain balances with their assets and liabilities while generating profit.

Weakness in Nigeria banking system is becoming apparent in the relative controlled and fragmented financial system in Nigeria. Managers are constantly challenged to improve their deposit or loan activities in order to enhance the profitability performance of their organization (Ajibola& Joseph, 2016)

The concept of ALM has been used since the 1970s. At the beginning stage, the risk management was purely based upon the simple GAP model that takes into account risk in terms of difference between cash flows and the mismatches between assets and liabilities in terms of duration. As the activities of banking institutions expands, they start experiencing various categories of risks which in turn makes the applicability and scope of ALM function broad. These activities pose different types of risks to Banks and they need to structure their assets and liabilities in such a way that these risks are managed

As cited in Owojori, Adegbie and Dada opined that Banking crises in Nigeria have shown that not only do banks often take excessive risks but the risks differ across banks. Some banks engage in more risks than their capital could bear. Other banks are more prudent and would be able to contain a banking crisis. As a way to stem the tide, the Central Bank of Nigeria (CBN) introduced measures to make the entire banking system a safe, sound and stable environment that could sustain public confidence in it.

Factors such as Stiff competition, bad credit appraisal leading to high incidence of non-performing loans, mismatch of assets and liabilities, slow growth of financial inclusion, unstable financial markets, frequent changes in interest rates among others have made ALM challenging to Banks

Folajimi and Asaolu (2014) as cited in Eghodaghe explains that a financial institution in distress is usually one where the evaluation depicts poor condition in all or most of the five performance failures stated thus (a) gross undercapitalization in relation

to level of operation. (b) high level of classified loans and advances (c) illiquidity reflected in the inability to meet customer's cash withdrawals. (d) low earnings resulting from huge operational losses and (e) weak management as reflected by poor credit quality, inadequate internal controls, high rate of frauds and forgeries, and labour turnover.

It is no more surprising that Banks today compete to give loans out to their customers because it constitutes the major source of income to Banks without taking into consideration the source in terms of maturity.

Given the challenges mentioned above and based on previous literatures, this study takes a further step to explicitly examine how ALM affects the financial performance of some selected Deposit Money Banks in Nigeria.

1.3 OBJECTIVES OF THE STUDY

The general objective of this study is to evaluate the effects of Assets and Liabilities Management on the financial Performance of Deposit Money Banks in Nigeria. The specific objectives of the study include the following:

a. Examine the effect of customers loans and advances on the financial performance of DMBs in Nigeria
b. Evaluate the effect of deposits from customers on the financial performance of DMBs in Nigeria.
c. Analyse the impact of shareholders' funds on the financial performance of DMBs in Nigeria

1.4 HYPOTHESES

Hypothesis One
Ho: There is no significance between customers' loans and advances and the financial performance of DMBs in Nigeria

Hypothesis Two
Ho: There is no significance between deposits from customers and the financial performance of DMBs in Nigeria

Hypothesis Three
Ho: There is no significance between shareholders' funds and the financial performance of DMBs in Nigeria

2.0 LITERATURE REVIEW

2.1. Conceptual Framework:

Assets and Liabilities Management (ALM)

ALM is the practice of managing financial risks that arise due to mismatches between the assets and liabilities as part of an investment strategy in financial accounting. It includes the allocation and management of assets, equity, interest rate and credit risk management. Often an ALM approach passively matches assets against liabilities (fully hedged) and leaves surpluses to be fully managed.

Njogo et al, (2014) defines ALM as the process by which an institution manages its balance sheet in order to accommodate for any alternative such as; interest rate risk and liquidity risk. It is used to determine and control risk faced by a bank. In managing risks, asset and liability management is used to access and minimize some of these risks by taking appropriate decisions.

Makau and Memba (2014) defines Asset-liability management basically as the process by which an institution manages its balance sheet in order to allow for alternative liquidity, interest rate andcredit risk scenarios. They further explained that asset liability management functions extend to funding, capital planning, profit planning and growth projection.

In the 2014 report of John Bricks & Associates, Harold explained Asset-liability management (ALM) as a forward-looking process involving the joint and simultaneous management of assets and liabilities to measure, monitor, and control the effects of changing interest rates on income, asset values, liquidity, and regulatory capital.

Lina & Indre (2013) summarizes, ALM to simply combine several bank portfolios - asset, liabilities, and the difference between the banks received and interest paid – management processes into a single coordinated process. In other words, the ALM is coordinated and not broken the total bank's balance sheet management. ALM as a planning tool has evolved from the need to ensure the asset and liability time overlap for different time periods.

2.1.1 Financial Performance

Anjili (2014) defines financial performance as a measure of how well a firm can use assets from its primary mode of business and generate revenues. The term is also used as a general measure of a firm's overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation.

Farah Naz (2016) explains financial performance to be an extent to which a company financial health over a period of time is measured. In other words, it is a financial action used in order to generate higher sales, profitability and worth of a business entity for its shareholders through managing its current and non-current assets, financing, equities, revenues and expenses.

Eshna Verma (2019) defines financial performance to be the degree to which financial objectives being or has been accomplished and as an important aspect of finance risk management. It is the process of measuring the results of a firm's policies and operations in monetary terms. It is used to measure firm's overall financial health over a given period of time and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation.

Didin, Jusni & Mochamad (2018) views financial performance as the achievement of a company's financial performance for a certain period covering the collection and allocation of finance measured by capital adequacy, liquidity, solvency, efficiency, leverage and profitability. They further explained that the measurement of a company's financial performance in creating profits especially companies in the financial industry such as Banking are viewed from the Financial Statements which consists of Balance Sheet, Income statement, Cash flow Statement and Statement of Changes In capital.

2.2 Empirical Review

2.2.1 ALM and Financial Performance

Financial Stability of Banks depends on the efficient management of all assets. It is important for Banks to take proper strategies against the financial risks faced by it. Through proper Asset Liability Management, liquidity, profitability and solvency of banks can be ensured and at the same time banks can manage and reduce risks such as credit risk, liquidity risk, interest rate risk, currency risk etc

Financial performance of Banks is an indicator of stability of a financial system. The stability of financial system is very important to the economy of any nation. Among the possible factors that have effect on the performance of Banks is the Asset Liability Management (ALM). ALM is a major microeconomic determinant of the performance of DMBs

A comprehensive ALM policy framework focuses on bank profitability and long-term viability by targeting the net interest margin (NIM) ratio and Net Economic Value (NEV), subject to balance sheet constraints.

The primary objective of an ALM analysis is to provide an early warning of possible financial problems resulting from the effects of changing interest rates on the existing balance sheet and income performance. Such problems manifest themselves when the cost of liabilities increases faster than the returns on assets in a rising rate environment. Correspondingly, in a falling rate environment, asset returns may decline faster and more than liability costs. To the extent that such a problem is detected for either rising or falling rates, preventive action should be implemented. To achieve this objective, appropriate analytical procedures must be correctly applied.

The ALM process is a continuing one that involves formulating, implementing, monitoring and revising strategies related to its assets and liabilities keeping in mind the entity's risk tolerances and constraint's

Different research studies related to this study have been carried out by researchers.

Adegbie & Dada (2018) examined risk asset management, liquidity management and sustainable performance in Deposit Money Banks in Nigeria. They adopted both the ex-post factor and survey research methods. Primary data were used to obtain opinions of respondents while secondary data were used to analyze the actions taken by the managers. The findings showed that there are strong relationships between risk asset management, liquidity management and sustainable performance in Nigeria Deposit Money Banks. Their findings further revealed that non-performing loans have significant negative impact on the assets of Deposit Money Banks in Nigeria; low cash deposit has a significant negative impact on the capital of Deposit Money Banks in Nigeria; non-compliance with CBN's stipulated cash balance requirement has a significant negative impact on the profitability of Nigeria Deposit Money Banks and inadequate liquidity management has a significant negative impact on the dividend payment of Nigeria Deposit Money Banks. The study concluded that effective risk asset management and liquidity management remain the nuclear of the banking industry to maintain sustainable performance. The study recommended that the regulatory authority should enforce compliance with monetary policies; that banks should institute effective and quality risk asset and liquidity management in order to maintain financial stability and sustainability

A comparative study of ALM framework in Nigeria Banking industry was carried out by Isaac and Akinwunmi in 2018. The study examined some best practices in the management of asset-liability and their influence on performance of banks taking into account

the unique attributes of the Nigerian economy. The Study predicated on the liability management theory and portfolio theory. Secondary data source was explored in presenting the facts of the situation. Data were tested using the Ordinary Least Square Linear Regression model from the Central Bank Nigeria Bulletin and financial reports of Banks, information concerning Shareholders' funds, Total Assets (independent variables) and profit after tax (dependent variable) of listed deposit money banks in Nigeria were extracted. The result shows that Shareholders' Funds positively relate to profitability and significant and that the Total Asset also positively relate to profitability. The study shows that there is a significant relationship between bank performance (in terms of profitability) and Asset-Liability Management. The study concluded that an efficient Asset-Liability Management has significant influence on profitability and then recommended among others, that Banks need to put in place surplus optimization of bank resources, which explains the need to maximize assets available to meet increasingly complex liabilities

Folajimi, Asaolu and Enyi (2018) examined the role of assets and liabilities management as a distress resolution in Nigerian banking sector. The study revealed that there is poor management of assets and liabilities, poor investment policies in the industry, the banks grow assets more than liabilities, the banks resulted into using depositors' money to acquire assets and they failed to comply with Central Bank of Nigeria monetary policies. The study therefore recommended among others that the industry and the regulators and supervisory agents should institute a good and sound investment policy for effective management of assets and liabilities in the industry.

Anchori (2018) in his dissertation examined the impact of ALM on non-interest income structure of DMBs in Nigeria for the period of year 2011 to 2015. Findings showed that banks' asset liability management have impact on the extent to which non-interest income is a significant component of banks' aggregate performance. Evaluations of non-interest income show that foreign exchange fees form the highest source of non-interest income followed by fees relating to lending. Also, reduction in Commission on Turnover by Central Bank of Nigeria from 5 per mille to 1 per mille (now replaced with account maintenance) presently did not reduce non-interest income. He concluded that bank's size do not have positive relationship with non-interest income. An important implication of his findings is that large Deposit Money banks large banks may be overlooking opportunity to generate non-interest income. Hence, large DMBs should not under-utilize their assets so as to generate more non-interest income.

A study on the determinant of financial performance of quoted Banks in Nigeria was carried out by Osuka and Osadume in 2015. Some Deposit Money Banks quoted in the Nigeria Stock exchange from year 2001 to 2010 were used as case study. The study used the regression analysis method and established that; asset quality, capital adequacy and employee motivation are key success factors in the financial performance of Banks. The findings were that, Asset qualities of the reviewed banks showed an appreciable growth and improvement as seen from their annual reports and accounts. That asset quality significantly affected the financial performances of quoted banks as the F-statistics for the selected banks calculated were far greater than their respective tabulated value at 5% level of significance.

2.2.2 Customer Deposits and Financial Performance

Banks fund their assets through a combination of their liabilities and equity. A bank's liabilities represent that bank's debt traditionally consist of deposits of money from people who entrust the bank to hold onto their money and return it when asked to do so. On the other side of the balance sheet are a bank's assets that, for the most part, consist of loans to its customers, from which the bank derives income in the form of interest charged to the borrowers. (Makau and Memba, 2014). The major source of income to Banks is the interest charged on loans they grant to their customers (deficit unit) which is also majorly sourced from the deposits of customers (surplus unit), this means that deposits is a major determinant of the financial performance of DMBs

Deposits play a major role in the funding of Banks activities as a predominant portion of their assets are financed through deposits. For a bank to be profitable, it must raise enough deposits at a reasonable rate in order to lend to its customers. This implies that a bank that is able to generate more deposits cheaply will be able to supply more loans competitively and hence make more profits if all other factors are held constant. (Dancan, 2012)

2.2.3 Loans and Financial Performance

Granting of loans is a broad spectrum of activities encompassing mobilization of surplus funds from owners and lending same to borrowers on agreed terms and at a profit. The principal economic function of banks is making loans available to fund consumption and investment spending by businesses, individuals and units of governments. They mobilize funds of surplus economic units and then convert such funds as credit facilities to the deficit units.

Loans represent one of the highest yielding assets on banks' balance sheet. It is obvious that the more banks offer loans the more it does generate revenue and more profit. However, banks have to be cautious in offering more loans because as they offer more loans to customers, they expose themselves to liquidity and default risks which impacts negatively on banks' profits and survival

The risk of a trading partner not fulfilling his or her obligation as per the contract on due date or anytime thereafter can greatly jeopardize the smooth functioning of bank's business.

It is not surprising that most failures in banks are as a result of high Non-performing Loans (NPLs). The use of the 6C's of lending is one of the techniques banks use in order to reduce the volume of Non-performing loans and that desired returns are generated from the loans granted to their customer. The 6Cs include; Capacity, Collateral, Condition, Capital, Character and Cashflow.

2.2.4 Shareholders' Funds and Financial Performance

Shareholders' fund is regarded as the net assets of a company which is made up of the called-up share capital and reserves which are invested in the company but do not include loan capital.

Capital represents the owner's interest in the business. A bank capital represents a cushion against the unforeseen and forms the safety net of cushion that allows it to remain solvent and continue operation despite unexpected macroeconomic or institutional disturbances. Too low a level of capital as a percentage of total assets can subject a bank to a disproportionate risk of failure in the face of adverse situation. On the other hand, too high a capital base will reduce gearing, thus, requiring the bank to push up earnings in order to generate a fair return to investors/ shareholders. There is need, therefore, to ascertain a prudential balance between the need for safety and returns in other to maximize shareholders wealth and safety of depositors' funds.

Central Bank of Nigeria (CBN) regulates the shareholders' funds of Bank in form of capital adequacy ratio (CAR) and the minimum capital base for each categories of Banks. A regional Bank is required to maintain a minimum capital base of #15b and a capital adequacy ratio of 10%, a national Bank is required to maintain a capital base of #25b and a CAR of 10% while an international Bank is #100b with a CAR of 15%. The essence of these requirements is to ensure the safety of Bank's clients, avoidance of Banks going into liquidation, thereby ensuring the efficiency and stability of the nation's financial system.

Shareholders fund is essential to the financial performance of Banks because it shows the extent to which Banks can carry out their operations and it also provides a buffer for absorbing occasional operating losses. Also, these funds can be used to acquire various fixed assets of the banks including building, technology and equipment, fixtures and fittings, etc. These fixed assets can be used to carry out smooth activities of the Banks

2.2.5 Relationship between Loans, Deposits and Shareholders' Funds

A bank's balances usually comprise of its assets, liabilities and its capital (also known as owners' equity or shareholders' funds). An asset is anything that can be sold for value and a major example is loan. Liabilities on the other hand represents an obligation that must eventually be paid out, and hence, it is a claim on assets, e.g. Deposits while capital or shareholders' funds is the net worth, that is, what is left when all assets have been sold and all liabilities have been paid. The relationship between assets, liabilities and shareholder's fund of a bank is shown by the following equation:

2.2.6 Bank Assets = Bank Liabilities + Bank capital

This can be rewritten as follows (for the purpose of this work):

Loans = Deposits + Shareholders funds

The above equation implies that the assets of a bank is funded majorly with the money deposited by customers and the fund of its owners.

Money lent to customers are majorly sourced from deposits which means that the amount of loan id=s dependent on the deposits received from customers. This is evident from the Loan-to-Deposit ratio (LDR) which is used to assess a Bank's liquidity by comparing a bank's total loans to its deposits for the same period.

The difference between the interest income on loans granted and the interest expense on deposit liabilities constitutes capital in a bank's balance sheet. The shareholders' funds are made up of called-up share capital and retained earnings or reserves (from net profit). This implies that the net worth of a Bank is dependent on how well it is able to manage its loans and deposits, holding all others constant.

2.2.7 ALM of Banks and the Nigerian Economy

Banks, in the management of their assets and liabilities can either impact the economy positively or negatively. This implies that a good and proper management of Banks' assets and liabilities can impact the economy positively while the reverse is the case if done otherwise.

Improper Assets and liabilities management does not just hurt Banks but the whole economy. Borrowers will struggle to get funding because banks become risk averse and conscious of their poor asset quality. Therefore, a sound financial system is critical to economic growth for any country, and a healthy banking system is a key component of this.

Report shows that the Nigerian banking industry lost over #2trillion to bad loan in the half of 2016. This might be due to the decline in economic activities during the year as a result of fall in oil prices and depreciation of naira among all others. The deposit money banks failed to properly manage the composition of their assets and liabilities during this period and the major problems were; (a) Bad Loan problems; (b) Capital Adequacy (c) Corporate governance, etc.

The period was characterized by non-performing loans (NPLs), and also, Banks failed to put aside enough money to guard against the financial and operational risks they faced, despite the volatilities of the Nigerian economy and sector's close relationship with the oil and gas industry.

2.3 THEORITICAL REVIEW

2.3.1 Liability Management Theory

Liability management theory recognizes the fact that asset structure of Banks has a prominent role to play in providing it with the liquidity that it needs. It has evolved from the simple idea of maturity-matching of assets and liabilities of various time horizons into a framework that includes sophisticated concepts. (Ngojo et al 2014) The theory states that there is no need for banks to lend self-liquidating loans and maintain liquid assets as they can borrow reserve money in the money market whenever necessary. A bank can hold reserves by building additional liabilities against itself via different sources. These sources comprise of issuing time certificates of deposit, borrowing from other Banks, borrowing from CBN, raising capital funds through issuing shares and by ploughing back profits. Osifisan (1993), cited by Isaac &Akinwunmi (2018) found out that banks in USA from 1960 adopted liabilities management strategy by sourcing for potential depositors more aggressively by creating marketing departments to be able to remain profitable business.

2.3.2 Portfolio theory

Portfolio theory is an investment approach in which the investor balances the risk against expected return to maximize earnings from the entire portfolio. It is an effective way of increasing returns while decreasing risk in investment According to portfolio theory, the larger the expected return, the better the investment and the smaller the standard deviation of the return the more attractive the investment. However, each class of assets has different level of risk and return and also behaves uniquely so that one asset may be increasing in value as another is decreasing or at least not increasing as much.

The optimum holding of each asset in a wealtholder's portfolio is a function of policy decisions determined by a number of factors such as the vector of rates of return on all assets held in a portfolio, a vector of risks associated with the ownership of each financial assets and the size of the portfolio. It implies that portfolio diversification and the desired portfolio composition of DMBs are results of decision taken by the bank management (Anjili, 2014). Portfolio theory plays an important role in the financial performance of banks. The ability to obtain maximum profits depend on the feasible set of assets and liabilities determined by the management and the unit cost incurred by the bank for producing each component of assets (Isaac & Akinwunmi,

2.4 GAP IN LITERATURE

Several studies have been conducted on how ALM affects financial performance of Banks, but few has been conducted in Nigeria. Most of the studies conducted in Nigeria have been on how risk asset management, liquidity management and capital adequacy affect performances of commercial banks. Among the studies carried out on ALM and performances of banks, few authors have used the combination of loans, deposits and shareholders' funds to measure ALM, which the study also explains. Furthermore, this study explains the interactions of these variables and how they jointly affect the financial performance of deposit money banks. This study also extends the number of years to cover the periods from 2009 to 2018 to show a more recent analysis of the effect of ALM on financial performances of Deposit money Banks

3.0 METHODOLOGY:

3.1 Research Design

A research design is the planned lay out structure that guide a researcher on how to collect, analyse and interpret observations. (Akintayo, 2019). The research design for this study is descriptive research design. A descriptive research design refers to theoretical-based research design, which is created by gathering, analyzing and interpretation of collected data. (Akintayo, 2019).

3.2 Population, Sample and Sampling Technique

Population refers to an entire group of units (people, objects, or other items) enumerated in a census, or from which a sample is drawn. This implies that sample represents a subset of a population. The population of this study is the total number of Deposit Money Banks in Nigeria which is 27. While the sample for this study is three, namely; Zenith Bank of Nigeria, First Bank of Nigeria and Wema Bank of Nigeria. The sampling technique used in this study is Purposive sampling technique. A purposive or judgmental sampling technique is a method of deliberately selecting samples from a particular setting or organization for the purpose of a study. The samples above were chosen because they are among the top performers of deposit money banks in Nigeria and also represent two different categories of Authorization of Banks in Nigeria; International and National authorization.

3.3. Scope of the Study

This study seeks to examine the effects of Assets Liabilities Management on the financial performance of Deposit Money Banks in Nigeria. The research period will cover a 10-year comparative review of the data sourced from 2009 to 2018. The study population is the total number of Deposit money banks in Nigeria while the population samples for the study are Zenith Bank, Wema Bank and First Bank of Nigeria

3.4 Sources of Data

The data for this study will be obtained mainly from secondary sources. In order to investigate the effect of ALM on the performance of Deposit Money Banks, Information will be gotten from the Central Bank of Nigeria (CBN) statistical bulletin and the published financial statements of Zenith Bank, First Bank and Wema Bank, covering the period of 2009 to 2018. Other secondary sources will include relevant journals, textbooks, newspapers and the internet.

3.5 Estimation strategy and method of data analysis

In order to obtain stationarity of the series in order to make the data reliable, a Unit root investigation was performed through application of Augmented Dickey-Fuller which is practically available on E-views econometric package. In this case, the estimation strategy begins with the examination of the stationarity properties of the variables to ensure that estimates obtained are not false. Thereafter, linear regression analysis is performed while the outcomes is given appropriate interpretation according to objectives.

Tabular Representation of Variables

Serial No	Variable	Definition	Type	Measurement	Supporting Scholars	Apriori Expecta tion
1.	Profit after Tax	Total amount of profit less tax Payable	Dependent	Profit after Tax	Isaac &Akinwunmi 2018	
2.	Shareholder's fund	It means the networth of a firm	Independent	Total amount o shares	Isaac &Akinwunmi 2018	+
3.	Deposit Liabilities	The amount of money held by the bank	Independent	Total value of Deposits	Sanjay Shrestha 2015	+
4.	Loans and Advances	Credit facilities granted to customers	Independent	Total amount o Loans granted	Makau&Memba 2014	+

Model Specification

This study employs the multivariate regression model to analyse the effects of ALM on the financial performance of deposit money banks in Nigeria. This model was used by Ajibola and Olusegun, (2016), Otonye, (2017), Anjili, (2014) and many others.
The Multivariate regression model will be as follows;

$Y = \alpha + \beta x + \mu$…… (1)

$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mu$……..(2)

$PAT = \alpha + \beta_1(DL) + \beta_2(SF) + \beta_3(LA) + \mu$…… (3)

Y denotes the dependent variable (financial performance) which is measured as PAT

α represents the value of the intercept

β represents the coefficient of the independent variables (X)

μ represents the error term

Where PAT means Profit after Tax which is used as proxy for financial performance

DL represents Deposit Liabilities

SF represents shareholders' funds

LA represents Customer Loans and Advances

4.0 RESULT AND DISCUSSION:

4.1 Data Presentation

The data for the three banks sampled in the study is presented in a panel data format, with the time series ranging from 2009-2018.

Table 4.1

BANK	YEAR	CLA	DL	SHF	PAT	ROE
ZENITH	2009	669,261	1,111,328	328,383	18,365	5.6
ZENITH	2010	667,860	1,289,552	350,414	33,335	9.5
ZENITH	2011	767,372	1,575,977	360,868	37,141	10.3
ZENITH	2012	895,354	1,802,008	438,003	95,813	21.8
ZENITH	2013	1,126,559	2,079,862	472,622	83,414	17.6
ZENITH	2014	1,580,250	2,265,262	512,707	92,479	18
ZENITH	2015	1,849,225	2,333,017	546,946	98,784	18.1
ZENITH	2016	2,138,132	2,552,963	616,353	119,285	19.4
ZENITH	2017	2,252,172	3,437,915	821,658	129,652	15.8
ZENITH	2018	1,980,464	2,744,525	697,983	165,480	23.7
WEMA	2009	28,636,557	94,791,074	-45,499,114	-2,094,692	-4.6
WEMA	2010	38,637,809	121,507,898	14,837,276	16,238,533	109.4
WEMA	2011	67,236,605	147,387,408	6,721,063	(4,228,926)	-62.9
WEMA	2012	73,745,728	174,302,424	12,783,150	(5,040,629)	39.4
WEMA	2013	98,631,825	217,734,559	41,395,151	1,596,531	3.9
WEMA	2014	149,293,849	258,956,478	3,768,649	2,327,445	5.3
WEMA	2015	185,596,590	284,977,836	6,064,110	2,327,275	5.1
WEMA	2016	227,008,550	283,302,604	48,501,954	2,560,580	5.2
WEMA	2017	215,840,031	254,487,050	45,687,211	2,255,488	4.9
WEMA	2018	252,189,613	369,314,164	49,615,250	3,326,420	6.7
FIRST BANK	2009	1,022,486	1,244,030	337,405	6,414	1.9
FIRST BANK	2010	1,017,411	1,330,771	123,079	1,414	1.14
FIRST BANK	2011	1,252,462	1,951,321	2,861,693	18,636	0.65
FIRST BANK	2012	1,563,005	2,405,858	441,315	76,800	17.4
FIRST BANK	2013	1,794,037	2,570,719	471,777	70,631	15
FIRST BANK	2014	1,473,839	2,551,022	522,890	5,683	1.1
FIRST BANK	2015	1,816,045	2,399,822	277,080	2,180	0.78
FIRST BANK	2016	2,086,741	2,490,578	259,705	7,507	2.9
FIRST BANK	2017	2,001,223	3,143,338	261,964	9,275	3.5

FIRST BANK	2018	1,683,813	3,486,691	257,948	9,342	3.6

Source: Annual Financial Report

Summary/Descriptive Statistics

Table 4.2

	CLA	DL	PAT	ROE	SHF
Mean	45548496	75050935	678321.8	10.67233	9161183.
Median	1914845.	2561841.	73715.50	5.450000	517798.5
Maximum	2.52E+08	3.69E+08	16238533	109.4000	49615250
Minimum	667860.0	1111328.	-5040629.	-62.90000	-45499114
Std. Dev.	78402929	1.15E+08	3392507.	24.68219	20882128
Skewness	1.605757	1.205920	3.121312	1.360648	0.481437
Kurtosis	4.090970	2.970688	16.27064	12.02982	3.801177
Jarque-Bera	14.38005	7.272284	268.8504	111.1788	1.961264
Probability	0.000754	0.026354	0.000000	0.000000	0.375074
Sum	1.37E+09	2.25E+09	20349655	320.1700	2.75E+08
Sum Sq. Dev.	1.78E+17	3.84E+17	3.34E+14	17667.11	1.26E+16
Observations	30	30	30	30	30

Source: Author's computation using E-view 7

Interpretation of the Descriptive Statistics result

Skewness

From the skewness result in the descriptive statistics test above it is revealed that all the variables identified are not normally distributed, in that they are all greater than zero. Also, the result reveals that they variables are positively skewed, i.e. they all have longer tail to the right.

Kurtosis

It is a measure of tail extremity reflecting either the presence of outliers in a distribution or a distribution's propensity for producing outliers. Kurtosis is positive if the tails are "heavier" than for a normal distribution and negative if the tails are "lighter" than for a normal distribution, and the Kurtosis value for a normal distribution is 0. From the result, it is revealed that all the variables have heavier tail than the normal distribution, with variable PAT (Profit after Tax) having heavier tail than other variable identified in the study, showing a value of 16.27064.

UNIT ROOT TEST

This is a test of stationary of variables. The decision rule states that if t-statistics > ADF critical value, accept null hypothesis, i.e., unit root exists, mean data is non stationary and If t-statistics < ADF critical value, reject null hypothesis, i.e., unit root does not exist, mean data is stationary.

Null Hypothesis: D(CLA) has a unit root
Exogenous: None
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.529686	0.0000
Test critical values:	1% level	-2.650145	
	5% level	-1.953381	
	10% level	-1.609798	

Source: Author's computation using E-view 7

Interpretation/Decision Rule

From the unit root test table, it shows that t-Statistic (-5.529686) is lesser than 5% critical value (-1.953381). We reject the null hypothesis i.e. unit root does not exist, the mean data is stationary at first differencing.

Null Hypothesis: D(DL) has a unit root
Exogenous: None
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.566761	0.0000
Test critical values:	1% level	-2.650145	
	5% level	-1.953381	
	10% level	-1.609798	

Source: Author's computation using E-view 7

Interpretation/Decision Rule
From the unit root test table, it shows that t-Statistic (-6.566761) is lesser than 5% critical value (-1.953381). We reject the null hypothesis i.e. unit root does not exist; the mean data is stationary at first differencing.

Null Hypothesis: D(PAT) has a unit root
Exogenous: None
Lag Length: 1 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.399349	0.0000
Test critical values:	1% level	-2.653401	
	5% level	-1.953858	
	10% level	-1.609571	

Source: Author's computation using E-view 7

Interpretation/Decision Rule
From the unit root test table, it shows that t-Statistic (-7.399349) is lesser than 5% critical value (-1.953381). We reject the null hypothesis i.e. unit root does not exist; the mean data is stationary at first differencing.

REGRESSION ANALYSIS RESULT

Table 4.3
Dependent Variable: PAT
Method: Least Squares
Date: 03/10/20 Time: 12:01
Sample: 2009 2018
Included observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.08E+13	3.25E+12	15.62110	0.0000
CLA	-1204.671	1425.729	-0.844951	0.0002
DL	1.74E+12	1.99E+12	0.873306	0.0000
SHF	1.27E+12	4.25E+11	2.982999	0.0001
R-squared	0.611078	Mean dependent var		3.44E+13

Adjusted R-squared	0.575721	S.D. dependent var	1.81E+13
S.E. of regression	1.18E+13	Akaike info criterion	63.13600
Sum squared resid	4.59E+27	Schwarz criterion	63.31015
Log likelihood	-1164.016	Hannan-Quinn criter.	63.19739
F-statistic	17.28331	Durbin-Watson stat	0.517302
Prob(F-statistic)	0.000001		

Source: Author's Computation using E-view 7

Interpretation

$PAT = \alpha + \beta_1(CLA) + \beta_2(DL) + \beta_3(SHF) + \mu$……

5.08E+13 = α + (-1204.671) + 1.74E+12 + 1.27E+12 + 4.59E+27

Interpretation of the Regression Analysis Result

Regression Coefficient
Estimated Coefficient value for each of the independent variables shows that CLA (Customer Loan Advances have a negative effect on profitability of Deposit Money Bank, with the coefficient value showing -1204.671, explains that a unit increase in CLA will result to -1204.671 units decrease in PAT (Profit After Tax). Apparently, DL (Deposit Liabilities) reveals to have positive effect on PAT, with its coefficient value showing 1.74E+12, explaining that a unit increase in DL will result to 1.74E+12 unit increase in PAT. SHF (Sharheholders funds) also reveals to have a positive effect on PAT, its coefficient value showing 1.27E+12 explains that a unit increase in SHF will result to 1.27E+12 increase in PAT.

Coefficient of Multiple Determinations
The R^2 value of 0.611078 (61%), explains that all the independent variables (CLA, DL and SHF) identified in the study have about 61% effect on the dependent variable (PAT). This reveals that there is a significant impact of Assets and liabilities on the profitability of DMBs.

4.2 Test of Hypotheses
This is conducted to determine the significant effect of each independent variable identified in the model on the dependent variable. The decision is that at 5% confidence level identified by the researcher, if *p-val > 0.05* accepts the null hypothesis and vice-versa.

Hypothesis One
H_0: There is no significant effect of customer's loans and advances on the profitability of DMBs in Nigeria

Discussion of Findings /Decision
From the regression result table (Table 4.3) the *p-val* of CLA is 0.0002. Therefore, since 0.0002< *0.05*, we reject the null hypothesis and accepts the alternate hypothesis that there is significant effect of customer's loans and advances on the profitability of DMBs in Nigeria.

Hypothesis Two
H_0: There is no significant effect of deposits from customers on the profitability of DMBs in Nigeria

Discussion of Findings /Decision
The *p-val* of DL from the regression result table (Table 4.3) shows 0.0000, which is lesser than 0.05. Therefore the null hypothesis is rejected and the alternate is accepted. The study concludes that there is significant effect of deposits from customers on the profitability of DMBs in Nigeria.

Hypothesis Three
H_0: There is no significant effect of shareholders' funds on the profitability of DMBs in Nigeria

Discussion of Findings /Decision
The regression result in table 4.3 shows SHF (Shareholder's fund) with a *p-val* of 0.0001 < 0.05. We reject the null hypothesis and accept the alternate hypothesis that there is significant effect of shareholders' funds on the profitability of DMBs in Nigeria.

Further Discussion of Findings

Findings shows that the independent variables identified in the study are statistically significant at 5% confident level. Also it is revealed that Deposit from Customers (DL) has stronger effect on profitability of DMBs compared to CLA (Customers Loans and Advances) and SHF (Share holder's fund), the beta coefficient of 1.74E+12 reveals this findings, also the *p-val* showing 0.0000 affirms this findings, as the lower the *p-val* the higher the confidence in the rejection of the null hypothesis. Durbin-Watson result showing 0.517302 shows the presence of auto-correlation between the explanatory variables, being that it is lesser than 2. In addition to the findings, Sum squared residual value showing 4.59E+27, reveals the ambiguity of the error term, i.e. there are still other explanatory variables liable to affect the profitability of the DMBs than the ones identified in the study.

5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS:

The study focused on the effect of Assets and Liabilities Management on the financial performance of Deposit Money Banks in Nigeria. Findings revealed that Customer Deposits, Loans and Advances and Shareholders funds have significant effect on the performance of DMBs in Nigeria. Analysis of the data shows that Loans and Advances impacts negatively on profitability. This negates the apriori expectation because Loans represents a high yielding asset in a bank's balance sheet. This result is the outcome of high rate of non-performing loans (NPLs) and liquidity risk arising from maturity mismatch. World Bank reveals that Nigerian banks rank 105th among 121 countries in terms of Non-performing loans as it was as high as 37.25% in 2009. By 2014, NPLs reduced but rose up again at the end of 2015. Deposits have a positive relationship with profit after tax (PAT). This implies that mobilization of more deposits from customers increases the profit level of Banks because most of the activities of the Banks are funded from the deposits of the customers and these activities in turn generate profit for the Bank. Shareholders' funds also have a positive relationship with the Banks' financial performance. Adequate capital is needed in order to increase the confidence and financial state of stakeholders. It also shows the extent to which it can absorb losses and also seen as security for depositors. The variables put together have a positive relationship with the financial performance of DMBs. However, there are also some other assets and liabilities variables apart from loan, shareholders' funds and deposits that affect financial performance of DMBs in Nigeria.

The study recommends that Banks should engage in proper monitoring of the loan management in order to reduce the incidence of high rate of non-performing loan and ensure enough diversity of its funds in order to ensure maximum profitability. Also, they should also consider factors such as growth of the economy, inflation rate, monetary policies etc that may affect financial performance.

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