# NON-PERFORMING LOANS AND PERFORMANCE ON QUOTED DEPOSIT MONEY BANKS IN NIGERIA

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**BENIN CITY**

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**A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF BANKING AND FINANCE, FACULTY OF MANAGEMENT SCIENCES, UNIVERSITY OF BENIN, BENIN CITY, IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF THE BACHELOR OF SCIENCE (BSC) DEGREE IN BANKING AND FINANCE**

**DECEMBER, 2022**

## DECLARATION

I, Precious Imaobong PEACE do hereby declare that this project is entirely my work and composition. The work embodied in this project has not been submitted by another candidate for any degree and is not currently being submitted for any degree. All references made to the works of other persons have been duly acknowledged.

Precious Imaobong PEACE

Date:

## CERTIFICATION

This is to certify that this research work was submitted by Precious Imaobong PEACE to the department of Banking and Finance, Faculty of Management sciences, University of Benin, Benin city under the full supervision of Dr. O.Osifo for the partial fulfillment of the requirement for the award of Bachelor of Science (B.Sc.) degree in Banking and Finance, University of Benin, Benin City.

## DEDICATION

This project work is dedicated to God Almighty, my creator and maker for his divine favor, mercy, understanding, provision and protection given to me. It also goes to my wonderful family and friends for their love and great support.

## ACKNOWLEDGEMENT

I want to acknowledge my father in heaven, the giver of life, knowledge and wisdom for his love and mercies upon my life. My sincere gratitude goes to God Almighty for his guidance and protection.

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## ABSTRACT

*This study is on non-performing loans and performance on quoted deposit money banks in Nigeria. The objectives of this study are to investigate the effect of non-performing loans, loans and advances and loan loss provision on performance of quoted deposit money banks in Nigeria.*
*Secondary data were sourced from the audited financial statement of our fourteen (14) sampled quoted deposit money banks spanning from 2010-2019. The study adopted panel regression analysis to analyze the data as well as other preliminary texts like descriptive statistics, correlation analysis and Hausman test.*
*The study found out that non-performing loan and loans and advances does not impact on the performance of quoted deposit money banks, only loan loss provision displayed significant impact. The study recommends amongst others that there is need for the Nigeria Deposit Insurance Corporation (NDIC) and the Central Bank of Nigeria (CBN) to oversee banks more closely in order to prevent a potential rapid increase in non-performing loans.*

# CHAPTER ONE

# INTRODUCTION

## 1.1 Background to the Study

Banks are financial organizations that serve as a bridge between a nation's surplus (supply side) and deficit (demand side) units of funds (Abimbola, 2020). In order to enable them to carry out investments and other development activities as a means of contributing to economic growth in general and assisting economic development in particular, banks provide loans and advances to individuals, business organizations, as well as the government. Additionally, lending activity is the primary source of revenue and risk for banks. (Kargi, 2011).

However, during a recession, loan default may become more frequent as a result of low asset quality and high credit risk, which could lead to significant loan losses and a decline in bank profitability. According to Ahmad and Ariff (2013), during financial and banking crises, the majority of banks in Nigeria and other economies like Thailand, Indonesia, Malaysia, Japan, and Mexico saw high Non-Performing Loans (NPLs) and a significant increase in credit risk, which led to the closure of several banks in Indonesia and Thailand. From N260.19 billion at the end of December 2003 to N2.9 trillion at the end of December 2009, the amount of non-performing loans in Nigeria increased. It then decreased to N649.63 billion at the end of December 2015. (CBN, 2016). Further information showed that the banking sector had a liquidity deficiency of N2.3 trillion as of 2016 end-December, compared to N1.93 trillion for 2015. As a result, the industry's liquidity ratio decreased from 10.24% in December 2015 to 6.76% in December 2016. The

survey also revealed that market liquidity had decreased from N175.15 billion in June 2016 to N159.29 billion at the end of that year (CBN, 2016). The NPL ratio calculates the percentage of bank loans that are either entirely defaulting or going bad because they are not being serviced. When dealing with bank NPL difficulties, the same prudential measures, such as the liquidity ratio, loans to deposit ratio, significant exposure, and reserve requirements, are frequently used.

Non-performing loans are typically regarded as bad debt because there are few odds of collecting the defaulted loan due to the borrowers' repeated failure to make loan repayments. Different credit policies are employed to regulate and safeguard the banking industry from the significant non-performing loans, one of which is to boost loan loss provisions (LLPs), also known as "provisions for bad debt." Therefore, having a large amount of non-performing loans hurts the bank's cash flow and makes it weak to the point where it loses trust and confidence from its clients, which also affects the stock price. According to Sere-, Ejembi, Udom, Salihu, Atoi, and Yaaba (2014), non-performing loans are ultimately written off for amounts that cannot be recovered. According to Nsobilla (2015), non-performing loans are financial assets from which banks will not be able to derive income or instances in which loans will not be repaid in accordance with the original loan schedule. Banks are required to share reserves, also known as "provisions," for any loans that are late. These provisions eat up a significant portion of the profit and directly harm the financial outcome (Klein, 2013; Mwangi, 2012). A bank's financial performance may suffer if a significant portion of its outstanding loans are non-performing loans. This is because banks earn most of their income from the interest they charge on loans; if they are unable to collect the owed interest, they will have less money to issue new loans, cover

operating expenses, and offer fewer loan options to prospective borrowers. However, if such assets don't provide any income, the banks might not be able to pay back the deposit amount by the deadline.

Huge non-performing loans (NPLs) are caused by poor asset quality brought on by non-performing credit facilities and inadequate collateral coverage, and they may have a detrimental impact on private investment levels, deposit liabilities, and the availability of bank credit to the private sector. The ongoing decline in the quality of risk assets held by banks is one of the main reasons why banks fail in Nigeria's banking sector, among other factors (Akpan, 2013). Inversely, the banks' stock price will decline as the percentage of non-performing loans rises. Investors will find a bank less tempting since they are skeptical of their potential earnings the larger the percentage of non-performing loans it has on its records. They may also have a negative impact on private consumption, which could cause the economy to decline, necessitating the bank's setting aside of a loan loss provision (LLP). These extraordinary rises prompted an examination into how sensitive Nigerian bank performing and nonperforming loans were to bank-specific and macroeconomic factors.

## 1.2 Statement of the Research Problem

Banking business is primarily concerned with extending loans to the general public but it is occasionally confronted with the problem of how to recover such debts from the individuals or companies, which could result in a significant loss for the bank if the loans or credit are not repaid as promised. If borrowers continue to default on their loan payments, the bank will earn less on its investments than it pays out in deposits, lowering the rate at which it gives out loans. The massive and steadily growing amount of NPLs in Nigeria's banking

industry is the most damaging issue, as it threatens both the expansion and growth of the country's economy as well as the efficiency of the banks. The average capital adequacy ratio of the subsector decreased from 41.8% in 2018 to 22.6% in 2019, according to the CBN report for 2019. At the end of December 2019, the average portfolio at risk rose to 51.7% from 23.1% in 2018, showing a worsening in the quality of risk assets. The industry average return on asset (ROA) climbed from 1.2% at the end of 2018 to 3.8% in 2019, while the return on equity (ROE) stayed the same at 16.5%. The industry's asset quality increased as the average non-performing loan ratio decreased from 59.6% in 2019.

By providing loans and advances to individuals, commercial organizations, and the government to enable them to carry out investments and other development activities, banks support economic growth and development. Loan defaults are produced as a result of low asset quality and large non-performing loans (NPLs), which have led to loan losses, decreased bank profitability, and may even cause bank collapse. In a setting unique to the banking sector, credit risk management is intricate and unpredictable. Research on the impact of non-performing loans on the financial performance of listed deposit money banks in Nigeria was necessary for this study due to the pattern of declining profits.

## 1.3 Research Questions

According to the stated objectives, this study aims to provide answers to the following questions:

i. What impact do non-performing loans have on the operation of Nigeria's deposit money banks?
ii. How much do loans and advances affect Nigeria's quoted deposit money banks' performance?

iii. What impact does loan loss provision (LLP) have on Nigeria's quoted deposit money banks?

## 1.4 Objectives of the Study

This study's primary goal is to determine how non-performing loans affect Nigeria's quoted deposit money banks' performance. The particular goals are to;

i. determine the degree to which non-performing loans impact Nigerian banks' performance;
ii. estimate the impact of advances and loans on Nigerian banks' performance; and
iii. Analyze the impact of loan loss provisions on Nigerian quoted deposit money banks.

## 1.5 Research Hypotheses

The following hypotheses are constructed and stated in null forms in order to provide answers to the aforementioned issues. This consciously offers a foundation for constructing verifiable arguments.

$H0_1$. Non-performing loans have little impact on Nigeria's listed deposit money banks' performance.

$H0_2$. The performance of Nigeria's listed Deposit Money Banks does not significantly correlate with loans and advances.

$H0_3$. The loan loss provision and performance of Nigeria's publicly traded deposit money banks are not significantly impacted.

## 1.6 Scope of the Study

The objective of this study is to determine how non-performing loans in Nigeria's Quoted Deposit Money Banks (DMBs) have changed between 2010 and 2019. Nigeria's banking system is known to have experienced numerous issues over the years as a result of the country's high number of nonperforming loans, which harmed both the banking sector's expansion and efficiency as well as the expansion and development of the Nigerian economy. The selection of the 2010–2019 timeframe was made in light of the sharp increases and decreases in the volume and proportion of nonperforming loans. We will select a total of 14 commercial banks, including Access Bank, Fidelity Bank, First City Monument Bank Limited, First Bank of Nigeria Limited, Guaranty Trust Bank Plc, Union Bank of Nigeria Plc, United Bank for Africa Plc, Zenith Bank Plc, Wema Bank, Stanbic IBTC Bank Plc, Citibank Nigeria Limited, Ecobank Nigeria, and Sterling Bank Plc, from among the 19 commercial banks with international and national authorization. These deposit money institutions will be chosen based on their histories, sizes, ages, and predicted levels of lending experience. This study will concentrate on the impact of these Deposit Money Banks' NPLs on Nigeria's development. The inclusion of any potential elements that might affect the growth of the banking industry, such as financial literacy, cultural, or institutional issues, is not appropriate because they fall outside the purview of this study. This study therefore focuses on how NPLs affect Nigerian deposit money banks between the years 2010 and 2019.

## 1.7 Significance of the Study

This study is extremely pertinent, especially in light of the Nigerian government's efforts to achieve an economic diversification that is primarily based on good bank credit

management. The results of this study will serve as concrete inputs in the creation of regulatory guidelines for the lending practices of Nigerian Deposit Money Banks. The deposit money bank management will become more aware of the importance of managing these identified variables as a result of this study, and they will gain knowledge of practices that can improve the performance of their loans. Therefore, the conclusions of this study, which describe the factors that influence nonperforming loans and their performance on listed Deposit Money Banks in Nigeria, will be helpful to these banking industry players;

i. Shareholders:

   The shareholders otherwise called the investors or potential investors take entrepreneurial risks, and deserve the right and authority to decide on the policy and strategic issues of a concerning the bank. Therefore this research will enable the shareholders to decide on where they would buy shares or invest in order to earn high dividend and maximize value on the effect of non-performing loans and performance on quoted deposit money banks.

ii. Board of directors:

   They are usually appointed by the shareholders to monitor and govern the banks operations, thereby safeguarding the shareholders investment. They are also responsible for selecting management, formulating goals and strategies for the bank, allocating resources, protecting stockholders and so on. Therefore, this study will enable the board of directors to understand what must be done in order to act in the best interest of the shareholders in decision making which will help the bank attain optimum credit risk management.

iii. Employees:

They carry on the day to day running of the banking activities. Thus, this research will ensure the employees in the bank perform a thorough investigation on a borrower before issuing out loans and advances to individuals or business organizations.

iv. Customers:

They are the main reasons for bank establishment. A bank is established to serve the needs of its customers hence this study will help the potential customers of a bank to know when a bank is solvent and liquid and if it is safe to make deposits with the bank at that particular time.

v. Financial markets:

Banks act as intermediary between the buyers and sellers of financial holdings and the financial market. Hence, this study will help the financial market to be able to easily mobilize funds and determine their prices of their financial instrument when selling out to the public and also help the bank stay liquid.

vi. Researchers:

This study will help researchers to cater for the changing needs of customers in the banking sector in order to keep the banking industry going and flourishing.

vii. Monetary authorities:

This study will help the monetary authorities like the Central Bank and Reserve Bank to be able to manage economic fluctuations by adjusting the supply of money through open market operations in order to reduce non performing loans in the banking industry.

## 1.8 Limitations to the Study

This study is limited to only the quoted Deposit Money Banks as other banks such as the Mortgage banks, Merchant banks, Indigenous banks, Finance holding companies, and Micro-finance banks and so on are not being examined.We consequently cannot draw the conclusion that non-performing loans have an impact on the performance of other banks in the banking sector, and the results may not be an accurate representation of other banks in the nation due to the limited sample size.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

This section reviews literatures on non-performing loans and bank performance in Nigeria. The section shall be in three (3) sections namely; conceptual review, review of previous studies and

theoretical review. The conceptual review will discuss concepts related to the subject matter, that is, on non-performing loans and bank performance. The review of previous studies will present previous studies, adopted statistical tools and their respective findings while the theoretical review will highlight and briefly discuss relevant theories on the relationship between non-performing loans and bank performance.

## 2.2 Conceptual Review

### 2.2.1 The Concept of Deposit Money Banks

It is impossible to exaggerate the contribution deposit money institutions make to economic growth. Deposit money banks effectively distribute money from savers to borrowers. Deposit money banks act as financial middlemen, transferring money from areas of wealth to those in need. Financial intermediation and banking are terms that are frequently used interchangeably. Financial intermediation is defined as a grouping of financial institutions (banks, insurance companies, credit associations, pension funds, and so on) whose primary function is to collect money from citizens and legal entities and then lend it to borrowers on commercial terms. However, financial intermediation has become exceedingly complex, and bank balance sheets no longer accurately reflect actual intermediation activity (Nicola, Benjamin & Lindsay, 2012). The banking sector helps to increase credit availability by mobilising surplus funds from savers who have no immediate need for such funds and channelling such funds in the form of credit to investors who have brilliant ideas about how to create additional wealth in the economy but lack the necessary capital to put the ideas into action (Yakubu&Affoi, 2014; Nwanyanwu, 2010).Deposit money banks have two main functions: primary and secondary.

#### 2.2.1.1 Primary Functions of Deposit Money Banks

The primary functions of deposit money banks are divided into two major categories;

**a) Accepting deposits**

One of the most important activities of a deposit money bank is financial intermediation through the mobilisation of public deposits. Individuals, businesses, governments, and financial institutions who have surplus income and savings find it convenient to deposit the funds in banks. As a result of this process, the depositor receives a reward known as interest. As a result, deposits at the bank grow in lockstep with interest earnings. People are more motivated to save when interest rates are higher. The most common types of deposits accepted by banks are traditional current account (demand) deposits, savings deposits, and fixed (time) deposits (Ekpenyong, 2011).

Banks help the economy by mobilising surplus economic unit savings and transferring them to the deficit economic unit. Investments can be financed in this way by banks (Ekpenyong, 2011; Azege, 2009). Banks should thus encourage trade and industry, capital formation, agricultural sector development, resuscitate infrastructure decay, and influence economic activity by making credit available at reasonable interest rates.

**b) Grant of loans and advances**

These are loans and advances given to members of the public and the business sector at interest rates higher than those that banks permit on different deposit accounts. The purpose, period, and method of repayment all affect the interest rate on loans and advances. The difference between the allowable interest rate on deposits and the interest rate charged on loans is a bank's main source of income.

**2.2.1.2 Secondary Functions of Deposit Money banks**

Deposit money banks perform a variety of other functions in addition to lending and accepting deposits. These are classified as secondary functions. The following are a few of them: issuing

letters of credit, travelers' checks, circular notes, taking care of the safe custody of valuables, important papers, and securities by offering safe deposit vaults or lockers, offering customers access to foreign exchange facilities, transferring money between locations and from one branch of the bank to another branch of the bank, acting as a guarantee on behalf of its clients, and accepting payments for the purchase of goods (Smriti, 2015).

Ekpenyong (2011), in a similar vein, used a functional approach to establish a link between financial development and economic growth. Ekpenyong (2011) identified five functions of financial institutions that contribute to economic growth: facilitating trading, diversifying and hedging risks; allocating resources; monitoring managers and exercising corporate control; mobilising savings; and facilitating the exchange of goods and services.

### 2.2.2 Concept of Bank Performance

Banks' primary goal is to maximise shareholder wealth. This means that the bank must generate a sufficient and justifiable profit, maintain a positive cash flow, choose between paying dividends and retaining profits, and make long-term investments. Banks' financial performance will always be the primary yardstick for determining how efficiently and effectively their management used resources. Other strategic goals and objectives are frequently secondary to the bank's primary financial goal. This is due to the bank's need to survive in order to meet maturing financial obligations.

Jensen and Meckling (1982) discussed an organization's profit-wealth maximisation objective and offered various criticisms of it. They chastised businesses for allegedly engaging in a slew of unethical practises in order to maximise profits. Bribing government officials with excessive profit, environmental pollution, and so on are examples (Smith, 2003). Regardless of these

criticisms, businesses must make a profit because without it, investors will be hesitant to invest because there is a risk of receiving little or no compensation for their investment (Friedman, 1970).

The definition of business performance is theoretically based on the economic theory of profit maximization for the company and the stakeholders' strategy of meeting the demands of a group or individuals who are impacted by the same company's operations. Financial performance is a gauge of how skillfully and successfully a business uses its resources to generate income (Nnamani, Onyekwelu&Ugwu, 2017). Indicators of an organization's profitability include return on assets (ROA), return on equity (ROE), return on investment (ROI), economic value added (EVA), net income or revenue, earnings before interest, tax, depreciation and amortization (EBTIDA), and Tobin Q. Market value performance includes market value added (MVA), earnings per share (EPS), change in stock price, dividend yield, stock price volatility, and To (Santos & Brito, 2012).

Many academics have typically ignored non-financial performance variables in favor of profitability measures of financial performance (such as ROA and ROE) as proxies for company performance (Alshe-hhi, Nobanee, &Khare, 2018) .

#### 2.2.2.1 Return on Assets (ROA)

Return on assets is a measure of how effectively an organization's assets have been used to generate returns over time. Return on assets is defined by Baulkaran (2014) as a ratio of earnings before interest, tax, and depreciation (EBITD) to the firm's total assets. This definition or measurement is preferred because it considers the tax and depreciation accounted for in earnings, as well as the source of finance used to generate returns. This definition was agreed upon by Liu,

Miletkov, Wei, and Yang (2015), who stated that return on assets is defined as revenue/returns before extraordinary earnings divided by the company's total assets. Return on assets is also defined as profits earned for a period in comparison to total assets invested for that period. A higher return on assets ratio indicates that the company is efficient and effective in generating net income by utilising available assets (Lyn & Aileen, 2008).

According to Sila, Gonzalez, and Hagendorff (2016), return on assets is defined as a company's profit after tax divided by the accounting value of its net assets. Their research discovered a negative relationship between total risks and return on assets. When risks increase, a firm's return on assets tends to decrease significantly. This could be due to an increase in the organization's capital-debt structure.

#### 2.2.2.2 Return on Equity (ROE)

Return on equity (ROE) is a ratio of profits to shareholders' investments. When the ROE is high, it means that the shareholders' money was put to good use, resulting in higher returns. This ratio specifies the percentage of profit earned by a company in relation to the amount invested by shareholders (Lyn & Aileen, 2008). The ROE ratio would not determine the percentage of dividends paid out to shareholders because, in most cases, dividend decisions are dependent on a firm's stock price movement. However, ROE is a yardstick for determining whether a company can generate returns while taking a risk on investment (Berman, Knight and Case, 2013).

#### 2.2.2.3 Tobin's Q

James Tobin developed this market base (ratio) measure of financial performance. He stated that the cost of replacing a firm's assets is equal to their current market value, and thus assets should

be stated in current market value rather than book value. A ratio is calculated by dividing the market value of equity by the cost of replacing its current assets.

A ratio (Tobin's Q) value greater than one indicates that the firm has efficiently used its available assets and may need to consider purchasing more current assets to meet operational expenses and obligations. A ratio (Tobin's Q) less than one indicates to investors that the company may be undervalued and represents a potential avenue for a buyout. In making investment decisions about a company, the Tobin's Q ratio has become a popular tool for determining a company's value. As a result, there has been a call to use this financial performance measure in research (Bhagat& Bolton, 2013; Jeremias &Gani, 2014; O'Reilly, Caldwell, Christman, &Doerr, 2014). Baulkaran is another proponent of using the Tobin's Q ratio to measure financial performance (2014). He defines the Tobin's Q ratio as the current value of a company's ordinary stocks and liabilities divided by its total assets.

### 2.2.3 Concept of Bank Loans

A bank loan is typically a sum of money given to an individual or institution with the expectation of repayment at a later date, with or without interest (Gichure, 2015). Other assets, such as land, machinery, and structures, can also be lent (Karakaya&Er, 2013). However, the cost of credit in the loanable funds market is significant because it is necessary for the mobilisation and efficient allocation of financial resources in an economy. Deposit money banks, as a result, offer both interest-bearing and non-interest-bearing loans. In the case of non-interest loans, banks share in the profits of the business for which the loan is granted.

A bank's primary function is to accept deposits and lend money. Receiving a deposit is risk-free because the banker is obligated to repay the deposit when requested. Lending, on the other hand,

is inherently risky because repayment is never guaranteed. A banker, on the other hand, makes most of his money through lending. Because he is not lending his own money, a banker must exercise extreme caution when lending. A sizable portion of the money lent is derived from public deposits. The vast majority of these deposits are repayable on demand (Mithani, 2008).

In a loan, one person, organization, or other entity loans money to another person, organization, or other entity. A note that details the principle amount borrowed, the interest rate the lender charges, and the due date serves as legal documentation for a loan, which is a debt given by one entity (an organization or individual) to another entity at an interest rate. In a loan, the subject asset(s) are transferred from the lender to the borrower for a predetermined amount of time (Guttentag, 2007). Loans are often offered at a cost known as interest on debt as an inducement for the lender to engage in the loan. Each of these commitments and limitations is set forth in a legal loan agreement, which may also impose additional constraints on the borrower known as loan covenants.

### 2.2.4 Concept of Non-Performing Loans (NPLs)

In the literature, there is no clear definition of nonperforming loans. Previously, NPLs were defined based on their perception. Non-performing loans are those that have not generated income for an extended period of time; that is, the principal and/or interest on these loans have gone unpaid for at least 90 days (Fofac, 2009). Patersson and Wadman (2004) define nonperforming loans as defaulted loans on which banks cannot profit. They are loans that cannot be repaid within the time frame specified by the laws of the country. A nonperforming loan is defined by the International Monetary Fund (IMF) as any loan in which interest and principal payments are more than 90 days past due or more than 90 days' worth of interest has been

refinanced. There are three types of non-performing loans. If the principal and interest payment is 90 days late, it is deemed substandard; 180 days late, it is deemed doubtful; and a year late, it is deemed a loss (Patersson&Wadman, 2004).

Nonperforming loans are calculated as the ratio of defaulting loans (payments of interest and principal that are 90 days or more past due) to total gross loans (total value of loan portfolio). Nonperforming loans include the loan's gross value as shown on the balance sheet, not just the amount that is past due. (According to the International Monetary Fund) The numerator is the value of nonperforming loans (NPLs), and the denominator is the total value of the loan portfolio (including NPLs but before the deduction of specific loan loss provisions) (IMF, 2009). The ratio of nonperforming loans to total gross loans is a common proxy for asset quality, with the goal of identifying asset quality issues in the loan portfolio.

#### 2.2.4.1 Nonperforming Loans in Context of Nigeria Banking Sector

Nonperforming loans have gained traction in the Nigerian banking industry recently. The Central Bank of Nigeria (CBN) has warned of a severe financial crisis in the Nigerian banking sector, as well as an increase in banking sector non-performing loans (NPLs) as a result of banks' exposure to the oil and gas sector and exchange rate volatility (CBN, 2015).

Indeed, the Nigerian banking sector has been thrown into disarray as a result of numerous bank failures. Rising non-performing loans are at the heart of this crisis, which has engulfed the entire banking industry. However, following the implementation of the universal banking model in 2001, NPLs averaged 21% from 2000 to 2004, and fell further as a result of financial services industry consolidation and recapitalization reforms, which had a significant impact on lowering the NPL ratio. According to available data, the NPL ratio fell from 21.6 percent in 2004 to 6.3

percent in 2008, representing a 10.5 percent average drop from 2005 to 2008. (AMCOM, 2012) The reform had a significant impact on the quality of commercial bank assets, resulting in a 10.63 percent decrease in nonperforming loans in the financial system. However, the results of the reforms show that the recapitalization was ineffective in addressing the banking system's problems. The non-performing loan ratio began to reverse as it rose from 6.3 percent in 2008 to a record high of 27.6 percent, causing distress in the banking sector due primarily to a global drop in the price of oil. Nigeria's NPL ratio peaked at 5% during the same period, indicating the need for a resolution mechanism to address the sector's systemic distress (Akinlo, 2014).

NPLs in Nigeria grew from N273 million in 1981 to N4.771 billion in 1987. The total amount of nonperforming loans increased from N111.587 billion in 2000 to N112.423 trillion in 2011. The phenomenal rise in non-performing loans in Nigeria over the years necessitates identifying the root causes of these loans in order to reduce them (Akinlo& Emmanuel, 2014). Despite this improvement, the volume of non-performing loans increased 13.30% in 2013, from 281.09 billion in 2012 to 324.14 billion in 2013. NDIC (2013).

The banks were also concerned about the recent 70 percent increase in NPLs to N649.63 billion at the end of December 2015, up from N363.31 billion at the end of December 2014. According to the CBN, the NPLs ratio remained within the prudential limit of 5.0 percent, at 4.65 percent, up from 2.88 percent, but it trended closer to the regulatory threshold, reflecting higher levels of stress in the banking industry (CBN, 2015). Although a few banks had NPL ratios that exceeded the regulatory maximum of 5%, this posed significant risks to the industry. Falling oil prices and fluctuating exchange rates, according to the apex bank, have had a negative impact on many banks' balance sheets, the revenue drive of oil and gas companies, and their ability to meet their financial obligations to banks and financiers, among other things. (CBN, 2015)

Skye Bank, whose licence was revoked by the Central Bank of Nigeria due to N370 billion in non-performing loans, and later N800 billion after a forensic audit, is a recent and well-documented example (Udo, 2018). The total non-performing loans statistic of Nigerian banks for 2020 was N1.5 trillion, according to the Nigerian Bureau of Statistics' 2019 report. When compared to a decade ago, this statistic represents a significant increase. The NPL-to-GDP ratio was around 7% in 2008. (data.worldbank.org). However, the percentage of NPLs to GDP is expected to be around 6% by 2020. (data.worldbank.org). These figures indicate a possible threat to the financial system and the economy.

The prevalence of obstinate debtors who refuse to pay obligations owed to banks and other financial institutions heightens concerns about the threats posed by NPLs. Recalcitrant debtors continue to be a major problem in Nigeria. AMCON's Managing Director/Chief Executive Officer, Mr Ahmed Kuru, has stated that the organisation is working hard to recover debts. According to him, the Corporation has recovered over N1.48 trillion out of a total of N4.158 trillion. AMCON still has 7,902 outstanding obligors, with a total outstanding loan of more than N3.1 trillion, according to Kuru. According to him, 350 obligors account for over N2.053 trillion, or more than 70% of the total outstanding amount (The Whistler, 2021). Because of the unusually high levels of bad debt and unethical borrower behaviour, President Muhammadu Buhari signed a new Act in 2019 giving AMCON greater authority to enforce debt recovery against prominent Nigerians and corporate organisations.

### 2.2.5 Concept of Capital Adequacy Ratio (CAR)

Banks are required by their regulators to maintain a certain level of capital, known as capital adequacy, in order to deal with any imminent threat posed by various risks. Finally, by

establishing rules to ensure that these institutions have enough capital to ensure the continuation of a safe and efficient financial system capable of withstanding any foreseeable problems, this protects banks, their customers, the government, and the economy. Depositors and other creditors are protected from loss in the event of liquidation by capital adequacy requirements, which cover losses not covered by current bank earnings (Tesfai, 2015).

Affordability was defined functionally as the amount of capital required to effectively discharge the primary capital function of preventing bank failure through loss absorption. The capital adequacy ratio compares a bank's assets to its risks. Capital adequacy ratios quantify a bank's capital as a percentage of its risk-weighted credit exposures. New Zealand's Racing Board (NZRB, 2007). The capital adequacy ratio is a measure of a bank's financial strength because it demonstrates the ability of the bank to withstand operational and abnormal losses. It also indicates the capability of conducting additional business (Habtamu, 2012).

An international standard recommending minimum capital adequacy ratios has been developed to ensure banks can absorb a reasonable level of losses before becoming insolvent. Minimum capital adequacy ratios are intended to ensure that banks can absorb a reasonable level of losses before becoming insolvent and losing depositors' funds (New Zealand Reserve Bank Bulletin, 2014). Tier one capital, which can absorb losses without requiring a bank to cease trading, such as ordinary share capital and Reserve, and tier two capital, which can absorb losses in the event of a winding-up but provides less protection to depositors, such as subordinated debt, are the two types of capital measured (New Zealand Reserve Bank Bulletin, 2014).

Tier 2 capital should not exceed 50% of qualifying capital, i.e. 100% of Tier 1 capital, in the CAR computation recommended by the Basel Committee on Banking Supervision (BCBS).

National banks must have a minimum capital adequacy ratio (CAR) of 10%, while international banks operating in Nigeria must have a CAR of 15%. (CBN, Prudential Guidelines, 2010)

The CBN's Financial Stability Report includes a distress test, which reveals that some banks' Capital Adequacy Ratios (CAR) are below the regulatory requirement. The number of banks with CAR less than 10% increased from zero to three between December 31, 2014, and June 30, 2015, according to the report, which measured the lenders' positions as of June 30, 2015. The three banks are not listed as domestic systemically important banks (D-SIBs) in the report (CBN, 2016).

### 2.2.6 Concept of Loan to Total Asset Ratio (LOAS)

The loans to assets ratio computes the total number of outstanding loans as a percentage of the total assets of the bank. The higher this ratio, the more loaned out a bank is and the less liquid it is. The loan-to-total-assets ratio indicates how much loans and advances outnumber assets. This ratio captures the growth of bank loans, and its expansion indicates the growth of loans and advances, which may influence the growth of non-performing loans. In addition, the higher the ratio, the more vulnerable a bank is to increased defaults. (Ofori-Abebrese, Pickson, &Opare, 2016) discovered a negative and non-significant relationship between the Loans to Total Asset ratio of Ghana banks and nonperforming loans. Sheefeni (2015) also demonstrates that the loan-to-total-asset ratio is a significant predictor of nonperforming loans.

2.2.6 Loan Loss Provision is a concept (LLP)

The LLP, which is divided into two parts, is a measure of how well a bank is protected against unexpected future losses (specific provision and general provision). Specific provisions are made based on the perceived risk of default on specific credit facilities, whereas general provisions are

made to recognise that even performing credit facilities face some risk of loss, no matter how minor (CBN Prudential guideline, 2010). Loan loss provisions (LLPs) are a significant accrual for commercial banks and have a significant impact on bank earnings and regulatory capital. These provisions are intended to increase banks' loan loss reserves in order to reflect expected future losses on their loan portfolios (Oosterbosch, 2012). This provision is used to cover a variety of potential loan loss factors, including bad loans, customer defaults, and renegotiated loan terms that result in lower-than-previously estimated payments.

One of the most serious issues that banks face is the risk of loan default. When banks anticipate an increase in capital losses, they may make provisions to reduce earnings fluctuations, thereby bolstering their medium-term solvency (Pesola, 2007). Banks in Australia, according to Anandrajan, Hasan, and McCarthy (2007), use loan loss provisions to manage earnings. Their findings suggest that commercial banks manage their earnings more aggressively than unlisted commercial banks. Arellano (1988) investigates whether loan loss provisions were used as an income smoothing tool in banks. He concludes that, in addition to loan write-offs, banks used to reduce earnings volatility.

### 2.2.7 Profitability and Non-Performing Loans in the Nigerian Banking Industry

A significant buildup of non-performing loans has historically been connected to the frequency of banking sector failure due to insolvency (Fofack, 2005). Over time, the ownership structure, size, and operational reach of the Nigerian banking sector have changed. There were 89 banks operating in Nigeria prior to the 2005 banking system consolidation under a universal banking system (UBS), a framework that gave banks the freedom to invest in other financial service industries. The UBS caused a proliferation of additional financial firms with banks as minority or

majority shareholders due to the interconnection of its subsidiaries, which also caused supervisory bottlenecks for the regulatory authority. Despite these investments, Nigeria's capital city, Lagos, has a thriving economy despite its massive population,The banking system was consolidated in 2005 as a result of the rating of the banking system in relation to its potential and overall economic activity being relatively marginal (CBN, 2009). Since there was a considerable drop in non-performing loans from 21.6 percent in 2005 to 9.3 percent in 2006, the consolidation effort had an immediate impact. The return on assets also decreased from 2.1 percent in 2005 to 1.8 percent in 2006 before somewhat increasing to 3.0 percent in 2007.

The beginning of the Global Financial Crisis (GFC) in 2007/2008 caused a decline in oil prices and drastically decreased returns on investment in the oil sector. The banking system was put in a high-risk situation as a result of the capital exodus. Because of the sharp increase in non-performing loans, the asset quality of Nigerian banks considerably declined, which had detrimental economic effects. The issue was made worse by the GFC's lingering repercussions, which caused the banks' non-performing loan (NPL) ratio to reach a record high of 37.3% in 2009. The banks' capacity to provide loans to the real sector was constrained by toxic asset burdens and severe liquidity problems. In order to survive the difficulties, several banks were obliged to reduce their staff sizes and expenditures.

Failure to effectively reduce levels of nonperforming loans, according to Richard, Chijoriga, Kaijage, Peterson and Bohman (2008), may result in bank failure. The Asset Management Corporation of Nigeria (AMCON) was founded in 2010 to take on bank NPLs in order to address these problems. The comparison of the industry's pre-2010 and post-2010 liquidity positions in terms of liquidity emphasizes the effect of securitization on the performance of Nigerian banks. By December 31, 2012, the average liquidity ratio had increased from 44.45 percent in 2009 to

68.01 percent (NDIC Annual Report, 2009 & 2012). This proved that AMCON's operations had a beneficial effect on the banks' liquidity in Nigeria. The circumstance is comparable to how securitization has affected the asset quality of Nigerian banks. As of December 31, 2012, the proportion of nonperforming loans to all loans had decreased from 37.3 percent in 2009 to 3.71 percent. In a similar vein, ROA rose from roughly 2.52% in 2009 to 3.0% in 2012.

Bank asset quality increased as a result of AMCON purchasing non-performing loans from the depository money banks (DMBs) at the time and DMBs' enhanced credit risk management. With the ratio dropping to 3.39 percent in 2013 and further decreasing to an all-time low of 2.96 percent in 2014, the rise in oil prices in 2013 had a substantial impact on the decline in NPLs in the banking sector. Along with this, ROA slightly increased from 2.04% in 2013 to 2.09% in 2014. Despite this, NPLs skyrocketed as a result of the 2016–2017 economic downturn, hitting 12.8, 14.8, and 16.8 percent in 2016, 2017, and 2018, respectively. This was brought on by the economy's weakness and strong reliance on oil. The results of this study show that non-performing loans and bank return on assets in Nigeria have a significant inverse connection (Nwosu, Okedigba&Anih, 2020).

## 2.3 Theoretical Review

### 2.3.1 The Credit Risk Theory

Credit risk is the risk of incurring a financial loss as a result of a decline in a counterparty's creditworthiness in a financial transaction (Liu, Mirzaei&Vandoros, 2014). The source of credit risk is default risk, which is the risk that a counterparty will not fulfil contractual obligations. The lender is responsible for the majority of the risk, which includes lost principal and interest.

Disruption loss can be total or partial, and it can occur in a variety of circumstances, such as a bank that is insolvent and unable to repay funds to a depositor.

The foundation of credit risk theory, the theory of default or default model, was developed by Robert Merton in 1974. Robert suggested a model for assessing a company's credit risk by characterizing its stock as a call option on its assets. The structural approach and the intensity-based approach are the two primary methods for modeling credit risk (also known as reduced form approach). Clifford V. Rossi created three significant methods for determining credit risk based on the Merton model. Examples include loss distribution produced by Monte Carlo simulation, credit spreads, and credit portfolio management. The lender may run a credit check on a potential borrower, demand that the borrower obtain the necessary insurance, such as mortgage insurance, or look for third-party security or guarantees to lower the lender's risk. In general, the risk is larger the higher the interest rate that debtors must pay on the debt (Owojori, Akintoye&Adidu, 2011).

### 2.3.2 Commercial Loan Theory

The commercial loan theory, commonly referred to as the real bills hypothesis, is the earliest banking theory. The commercial loan theory states that banks should only lend on short-term, self-liquidating commercial paper. According to Hosna and Manzura (2009), the commercial loan theory aims to have an impact on both bank lending and more general economic activity. If this idea is strictly followed, it will become clear that it is anticipated to work as a source of money for changes in overall economic activity. There is no doubt that Nigerian deposit-taking institutions subscribe to this theory (DMBs). According to Nigerian bankers, depositors' money should be utilized to fund short-term loans because it may be rapidly returned.

When you consider that there were little or no secondary reserve assets that may have acted as a liquidity buffer for the bank during the time the theory was dominant, Kargi (2011) claims that the close linkages to this idea are actually rather conventional. This concept also disregards the credit requirements of Nigeria's emerging economy. It has not prompted banks to extend credit for the purchase of buildings, machinery, land, or homes. The theory's dependence on the liquidation of all loans in the regular course of business shows how unable it is to understand the relative stability of bank deposits. However, not all depositors are likely to demand payment at the same time for demand deposits, which are subject to demand. A bank can therefore extend money for a reasonable amount of time without running the risk of illiquidity thanks to deposit stability. The real bills doctrine, often known as the commercial loan notion, has remained a well-liked banking theory in spite of its shortcomings. Even now, it still has an impact on the way banks are regulated, how they are examined, and how many bankers think. Without first understanding our banking heritage, and banking heritage without first comprehending commercial loan theory, it is impossible to comprehend contemporary banking.

### 2.3.3 The Shiftability Theory

This idea contends that assets may be held in alternative shiftable open-market assets, such as government securities, rather than just self-liquidating bills (Moti, Masinde, & Mugenda, 2010). (2012). It should be noted that the commercial loan hypothesis was not eliminated or debunked by the shiftability theory. Instead, the shiftability theory expanded the scope of assets that were acceptable for bank ownership by taking a more comprehensive perspective of the banking sector. Commercial loans are not the only poor bank assets, according to the shiftability argument, but they are not the only ones either. The shiftability theory states that a bank's liquidity is based on its capacity to transfer assets to a third party at a known price. For instance,

it would be completely acceptable for a bank to maintain short-term open market assets in its asset portfolio. Hosna and Manzura (2009) assert that the shiftability theory has a substantial influence on banking practices. It essentially refocused regulators' and bankers' emphasis on investments rather than loans as a source of bank liquidity. In fact, supporters of the concept contended that short-term commercial loans' liquidity was largely fictional. Kargi asserted that the shiftability theory had a significant problem, similar to the commercial loan idea (2011). In reality, the flaw was more in the bank management procedures that the theory led to, which was widely accepted by the several publications on the issue. The idea had a simple flaw: while one bank might move assets to provide the necessary liquidity, the same could not be said of all banks taken together.

### 2.3.4 The Anticipated Income Theory

Based on the practises of US commercial banks, H.V. Prochnow proposed the Anticipated Income Theory in 1944. Regardless of the nature and character of a borrower's business, the bank should plan the liquidation of the term-loan (loan of one to five years) from the borrower's anticipated income, according to this theory. This concept emphasises the bank's ability to make loans based on the borrower's expected income over the short and long term. The bank wants to base their loan, both medium and long term, on the borrower's expected income. As a result, rather than a lump sum at the loan's maturity, a bank loan is repaid in instalments from the borrower's future income. The bank advances more money when the predicted incomes are consistent and can be expected as of the loan's due date. This, in turn, will help the bank manage its credit risk more efficiently, because bank management will be able to plan credit based on expected income.

The phrase "cash flow method of financing" is another name for it. Because it achieves the three main goals of liquidity, safety, and profitability, this theory outperforms both the shiftability theory and the commercial loan theory. When properly interpreted, this hypothesis amounted to little more than a refutation of the commercial loan theory. It focused on the kinds of loans that banks should make, but came to a substantially different result than those who advocated for the commercial lending hypothesis (Moti, Masinde&Mugenda, 2012).

One distinctive aspect of this theory, according to Kolapo, Ayeni, and Oke (2012), is its "future-oriented approach" to bank advances and loans. The phrase "cash flow method of financing" is another name for it. When properly interpreted, this idea was not the shift ability theory, but rather only a challenger to the commercial loan theory. It does not challenge the notion that a bank's secondary reserves serve as its main source of liquidity (the shiftability assumption). Instead, it brought back into focus the kinds of loans that a bank should be able to offer, but it came to a totally different result than those who advocated for the commercial lending approach (Moti, Masinde, &Mugenda, 2010).

### 2.3.5 The Liability Management Theory

This argument says that traditional standards are not required because reserve money may be purchased or obtained in the money market using short-term debt instruments anytime a bank encounters a reserve deficit. Shafiq and Nasr (2010) argue that this does not indicate that the bank controls its assets inactively and simply manages its obligations.

The hypothesis contends that the bank's asset structure is crucial in providing liquidity, not the other way around. The theory asserts that the bank can also provide liquidity through its liabilities, although it only considers one aspect of liquidity. A bank needs liquidity to satisfy

reasonable lending demands from its clients as well as for withdrawals of deposits. In addition to being profitable, banks that reject or are unable to give their depositors loans when they need them are less likely to keep those depositors for very long.

### 2.3.6 Information Asymmetry Theory

Akerlof (1970) was the first to put forth the idea of information asymmetry, arguing that an imperfect market was caused by the uneven distribution of information among parties engaged in transactions. Stiglitz writes that information is imperfect and that getting it might be expensive (1981). He added that there exist knowledge asymmetries and that people and businesses have an impact on the degree of information asymmetry. In every market, the seller typically has more knowledge about the product than the customer; as a result, the buyer is taking a risk by buying the product. This reasoning is used by Kemei and Kerongo (2014) to explain why banks have high non-performing loan rates. However, Dell'Ariccia (2001) noted that the high percentage of loan defaults may be decreased if banks were able to accurately assess the creditworthiness of borrowers. Over time, a selection approach that favors high-risk borrowers over creditworthy borrowers may result in a decline in the overall quality of bank loan portfolios and the buildup of NPLs. In order to lower the high rate of loan defaults, deteriorating profitability, capital erosion, and the subpar performance of the banking industry, a delicate balance is necessary. (2014) Makri, Tsagkanos, and Bellas.

### 2.3.7 Bad Management Hypothesis

The Bad Management Hypothesis, put forth by Berger and De Young in 1997, contends that poor management in financial institutions leads to poor loan quality and decreased profitability, which raises the proportion of nonperforming loans. This suggests that if loan administration is

conducted with due diligence, profitability would rise and the value of bad loans will fall. This hypothesis states that in order to reduce rising NPLs, poor managers often devote greater resources to monitoring and underwriting bad loans. As a result, operating expenses surpass interest revenue, ultimately increasing the cost-to-income ratio (low-cost efficiency). Numerous empirical research have been conducted that are based on this theory. For instance, the findings of Norden and Stoian (2014) and Louzis, Vouldis, and Metaxas (2010), which corroborate the concept, showed that bank-specific characteristics including performance and efficiency indicators had a significant impact on the level of NPLs. According to this hypothesis, the study predicts that non-performing loans will have a negative correlation with Return on Asset (ROA) or Return on Equity (ROE), a proxy for bank performance.

### 2.4 Empirical Review

Empirical data show that NPLs have a detrimental effect on bank performance. Because they reflect credit risk, operational risk, and resource allocation effectiveness, non-performing debt (NPLs) may be the most significant indication of financial stability (Ikram, Su,Ijaz&Fiaz, 2016).

In Bangladesh, Sufian and Habibullah (2009) estimated the effect of non-performing loans on bank profitability as well as its bank-specific and macroeconomic causes using the fixed effects model (FEM). Their research indicated that the profitability of Bangladeshi banks was positively and significantly impacted by bank-specific factors such lending intensity, credit risk, and cost.

Tobit simultaneous equation model was used by Karim, Chan, and Hassan (2010) to analyze data from commercial banks in Singapore and Malaysia between 1995 and 2000. The results show that when NPLs rise, cost efficiency decreases, while non-performing loans rise as cost efficiency declines.

Adebisi and Matthew (2015) found that nonperforming loans do not significantly effect return on assets, suggesting that the amount of assets in a company is unaffected by the amount of NPLs. On the other hand, return on equity and the relationship were substantial. The study examined the effect of non-performing loans on the profitability of Nigerian banks from 2006 to 2012 using correlation analysis and the T-test.

Using a panel data regression model, Gizaw, Kebede, and Selvaraj (2015) investigated the effect of nonperforming loans on commercial banks' profitability in Ethiopia. They found that the profitability of commercial banks is significantly impacted by all credit risk metrics.

By analyzing the effect of NPLs on universal banks' profitability in Ghana from 2000Q1 to 2014Q4, Mwinlaaru, Ofori, Adiyiah, and Idun (2016) provided a significant contribution to the related literature. NPLs were found to have a negative and considerable influence on universal banks' profitability in both the short- and long-term using the ARDL bounds test cointegration technique.

Laryea, Ntow-Gyamfi, and Alu (2016) found evidence of both bank-specific and macroeconomic factors when analyzing NPLs and their effects on bank profitability. Between 2005 and 2010, a fixed effect panel model was applied to a sample of 22 banks in Ghana. Their research demonstrates that NPLs have a negative influence on ROE and ROA and that larger banks have lower levels of NPLs, but better capitalised institutions take on more credit risk in the form of NPLs.

Ozurumba (2016) looked into how non-performing loans affected a select Nigerian commercial banks' performance. The study employed multiple regression approaches to analyze secondary data from three banks between 2000 and 2013. The study's findings indicate that non-performing

loans and loan loss provisions have an inverse relationship with return on asset and return on equity, respectively.

In a related study from 1994 to 2014, Etale, Ayunku, and Etale (2016) examined the effects of NPLs on bank performance using descriptive statistics and multiple regression approaches. The results showed that non-performing loan levels above a certain threshold have a detrimental effect on bank performance, especially over the long term. Additionally, Ugoani (2016) examined the non-performing loan portfolio and its effects on bank profitability in Nigeria for a number of commercial banks using descriptive and regression analysis. The findings revealed that the portfolio of nonperforming loans has a negative impact on bank profitability.

Akter (2017) attempted to estimate the time series scenario of NPL growth and its link with bank profitability in Bangladesh by using multiple regression techniques on data from 30 listed commercial banks on the Dhaka Stock Exchange (DSE). The results show that one of the key elements affecting bank profitability is NPLs, which have a statistically significant detrimental effect on net profit margins (NPM). Using secondary data from seven joint ventures between 2006 and 2017, Panta (2018) investigated the relationship between non-performing loans and bank efficiency in the Nepalese banking system. The findings revealed that an increase in nonperforming loans erodes interest income, reducing profitability.

In Tanzania and Ghana, respectively, Kingu, Macha, and Gwahula (2018) and Nyarko-Baasi (2018) looked into how nonperforming loans affected the profitability of a sample of commercial banks. In both cases, the fixed effects panel regression model was applied. They discovered that non-performing loans had a negative impact on bank profitability, which is in line with Laryea,

Ntow-Gyamfi, and Alu (2016) and Etale, Ayunku, and Etale (2016). The information asymmetry theory and the bad management hypothesis were both supported by the findings.

In their investigation of Bangladeshi banks, Patwary and Tasneem (2019) employed the Vector Auto Regression (VAR) model. The non-performing loan ratio and the return on asset have a statistically significant link, according to the study (ROA).

Similar to this, Gabriel, Victor, and Innocent (2019) employed multiple regression approaches to look at how non-performing loans affected the financial performance of commercial banks in Nigeria from 1985 to 2016. The study's conclusions showed that NPLs and Cash Reserve Ratio (CRR) decreased banks' financial performance by having a statistically significant negative impact on Return on Asset (ROA).

The effect of non-performing loans on the financial performance of Nigerian commercial banks from 1985 to 2016 was examined by Okoh, Inim, and Idachaba (2019). The study analyzed data from several years' worth of publications from the Nigeria Deposit Insurance Corporation (NDIC) and the Central Bank of Nigeria (CBN) statistical bulletin using multiple regression techniques. The results of the analysis showed that the ratios of non-performing loans to total loans and cash reserves had a statistically significant adverse impact on return on assets (ROA). These results showed that high non-performing loan levels will be detrimental to the financial health of Nigerian commercial banks.

The impact of non-performing loans on commercial bank profitability was examined by Nwosu, Okedigba, and Anih (2020), who also suggested ways to lessen their negative effects on Nigeria's banking industry. Data from a sample of 18 commercial banks were analyzed using the panel fixed effect and auto-regressive distributed lag models between the first quarter of 2014

and the fourth quarter of 2018. Empirical results showed that nonperforming loans had a detrimental and statistically significant effect on bank profitability. Most of the coeffcients of other factors affecting bank profitability were in line with predictions. The analysis found that increasing levels of non-performing loans, a rise in liquidity ratio, and inflation are all associated with poorer bank profitability, whereas rising bank size and capital adequacy ratio are associated with higher profitability.

ollakua and Aliub (2021) looked into how non-performing loans from 2010 to 2019 affected the profitability of Kosovo banks. Traditional profit theory was used to determine profit, with the ratio of non-performing loans, liquidity risk, and bank size serving as controls. They estimated the determination of the profit function using multivariable linear regression. The findings demonstrated that nonperforming loans have a statistically significant negative impact on profitability, with every 1 percent increase in nonperforming loans (NPLs) translating into a 0.19 percent decline in return on assets while all other variables remained constant.

The impact of non-performing loans (NPLs) on the financial performance of all Bangladeshi listed banks was examined by Amin, Rahman, and Hossain in 2021. In order to estimate the impact of the non-performing loan ratio (NPLR), capital adequacy ratio (CAR), inflation (INF), and provision maintenance ratio (PMR) on return on asset, data from 1997 to 2019 were analyzed (ROA). Data was gathered from Bangladesh Bank's yearly reports, and STATA 11's OLS and VAT models, as well as the Test of Heteroscedasticity, Test of Normal Distribution, and Unit Root Test, were used to analyze the results (statistical software). All of the independent variables, NPLR, CAR, INF, and PMR, were shown to be statistically significant in explaining the dependent variable, ROA.

Singh, Basuki, and Setiawan (2021) investigated the impact of Nepalese conventional banks' non-performing loans (NPLs). This study's population consisted of major commercial banks in Nepal, and the data obtained for this study ranged from 2015 to 2019. The World Bank database's GDP and inflation data, as well as secondary data taken from each bank's annual report, were used in this analysis. The data in this study were analyzed using multiple regression. NPLs were employed as the dependent variable in the study, and the independent/explanatory factors were Return on Asset (ROA), Capital Adequacy Ratio (CAR), Bank Size, GDP growth, and Inflation. The results of this study demonstrate that CAR has little impact on bank NPLs, however ROA, Bank Size, GDP, and Inflation all significantly affect NPLs. In contrast to the majority of studies, this analysis finds a positive and significant GDP effect on NPLs.

### 2.5 Gap in Literature

Similar patterns emerge from empirical evaluations and studies that show nonperforming loans (NPLs) have a detrimental effect on bank profitability. This study adds to the sparse but expanding corpus of research on Nigerian banks' performance and NPLs. This study will investigate 18 deposit money banks, which account for more than 95% of all deposit money bank assets and deposits in Nigeria, as opposed to Ozurumba (2016) and Ugoani (2016) who only looked at three deposit money banks in their papers. The study included annual data as well, but it employed a different criterion to assess the performance of the banks (Tobins Q).

# CHAPTER THREE

# METHODOLOGY

## 3.1 Introduction

The methodology for the study is presented in this chapter. The study's methodology refers to the methods used to conduct the research. It describes the type of research design, study population, sampling strategies, data collection procedures, and data analysis tools, among other things.

### 3.2 Research Design

The ex-post facto research design will be applied in this study. Ex-post factor, according to Akuezuilo (2002), aims to identify the variables connected to particular occurrences, results, situations, or types of behavior by scrutinizing prior events or preexisting circumstances in order to forecast future consequences. In an ex-post facto research design, events have already occurred (i.e., scientific data is already available), preventing the researcher from tampering with the data and study results. This is the justification for the adoption of the ex-post facto research design.

### 3.3 Population of the Study

The population for this study is the total number of 22 deposit money banks licensed to conduct banking operations by the Central Bank of Nigeria. These are Access Bank plc, Fidelity Bank plc, First City Monument Bank limited, First Bank of Nigeria limited, Guaranty Trust Bank plc, Union Bank of Nigeria plc, United Bank for Africa plc, Zenith Bank plc, Citibank Nigeria limited, Ecobank Nigeria plc, Heritage Banking Company limited, Keystone Bank limited, Polaris Bank limited, Stanbic IBTC Bank plc, Standard Chartered Bank, Sterling Bank plc, Titan Trust Bank limited, Unity Bank plc, Wema Bank plc, Globus Bank limited, SunTrust Bank Nigeria limited and Providus Bank limited.

### 3.4 Sample Size and Sampling Technique

Only deposit money banks listed on the floor of the Nigerian Exchange Limited would be used as a sample because this study uses panel data. As a result, as of December 31st, 2020, there will be fourteen (14) listed deposit money banks, according to the Nigerian Exchange Limited Factbook.

The study used the census sampling method, in which each person in a population (in this case, banks listed on the Nigerian Exchange Limited) is chosen as a sample. Because listed banks must report their financial statements within a particular time frame, using listed deposit money institutions guarantees data homogeneity and accessibility.

### 3.5 Sources of Data

Only secondary sources of data gathering will be used for the purposes of this study. The information would be gathered from deposit money banks' annual financial reports and the Nigerian Exchange Limited Fact-book for the years 2015 to 2020. (6 years).

### 3.6 Theoretical Framework and Model Specification

The basis of this study will be the credit risk theory. With his theory of default, or default model, which serves as the basis of credit risk theory, Merton (1974) proposed the concept. Robert suggested a model for assessing a company's credit risk by characterizing its stock as a call option on its assets. The structural approach and the intensity-based approach are the two primary methods for modeling credit risk (also known as reduced form approach). Rossi (2014) created three main strategies for determining credit risk based on the Merton model. Examples include loss distribution produced by Monte Carlo simulation, credit spreads, and credit portfolio management. The lender may run a credit check on a potential borrower, demand that the borrower obtain the necessary insurance, such as mortgage insurance, or look for third-party security or guarantees to lower the lender's risk. Generally speaking, the risk is increased by the debtor's obligation to pay a higher interest rate (Owojori, Akintoye & Adidu, 2011).

The following functional representation of the study's model is provided.;

$TQ = (NPL_{it}, LLP_{it}, SZ_{it}, AG_{it})$ …… (3.1)

This model was further transformed into an econometric model as equation (3.2)

$TQ = \alpha + \beta_1 NPL_{it} + \beta_2 LLP_{it} + \beta_3 SZ_{it} + \beta_4 AG_{it} + \varepsilon_{it}$ …… (3.2)

Where:

*TQ= Tobin's as our dependent variable*

$NPL_{it}$= *Non performing loans of DMBs at time t, as our independent variable 1*

$LLP_{it}$= *Loan loss provision of DMBs at time t, as our independent variable 2*

$SZ_{it}$ = *Size of DMBs at time t, as our independent variable 3*

$AG_{it}$= *Age of DMBs at time t, as our independent variable 4*

$\alpha$= *constant represent value of TQ when all others explanatory variables are held constant*

*B1-* $\beta_4$=*Coefficient of the explanatory variables*

$\varepsilon_{it}$= *error term of bank i at time t*

### 3.7 Measurement of the Variables

| Variables | Variable Type | Measurement | Source | Apriori Expectation |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| TobinsQ | Dependent | It is measured by dividing the sum of market value of equity and total book value of liabilities by total book value of asset. | Coskun and Sayilir (2012) | |
| Nonperforming Loans Ratio | Independent | Non-performing loans divided by gross loans | Ugoani (2015) | Negative |
| Loans Loss Provision | Independent | Loans Loss Provision divided by gross Loans | Boudriga, Taktak and Jellouli (2009) | Positive |
| Size | Independent | Natural logarithm of total assets | Zhu, Mbroh, Monney and Bonsu (2019) | Positive |
| Age | Independent | Cumulative years since incorporation | Loderer and Waelchli (2010) | Positive |

**Source: Researcher Compilation (2022).**

### 3.8 Method of Data Analysis

Both descriptive and inferential analyses are used in this study. As univariate analysis tools, descriptive statistics and correlation analysis were used, and panel data regression was used to assess the impact of non-performing loans on deposit money institutions' financial performance. A statistical technique used to evaluate two-dimensional data is panel regression analysis (cross-sectional & time series). The Hausman test will be used to choose between a fixed panel effect and a random panel effect as the appropriate effect to use.

# CHAPTER FOUR

# DATA PRESENTATION AND ANALYSIS OF RESULTS

## 4.1 Introduction

This chapter covers the analysis and interpretation of the data using the empirical methodology that was used. The analysis use the panel data regression method. Two general methods are employed in the empirical analysis, namely statistical and econometric methodologies, in order to give a robust inquiry and analysis of the subject. In order to examine the initial categorization and relationship between the variables of interest, the statistical method makes use of both

descriptive statistics and correlation analysis. Panel data methodology is then used to estimate the empirical model derived from the time series-cross sectional data in order to quickly ascertain the impact of independent variables on TobinsQ.

## 4.2 Descriptive Statistics

**Table 4.1: Descriptive Statistics**

| | TQ | NPL | LADR | LLP |
|---|---|---|---|---|
| Mean | 1.176597 | 7.429778 | 0.673321 | 0.056613 |
| Median | 0.702650 | 4.026100 | 0.661600 | 0.015400 |
| Maximum | 20.71650 | 98.00000 | 1.427100 | 2.934700 |
| Minimum | -2.250900 | 0.000000 | 0.032100 | -0.015100 |
| Std. Dev. | 2.234967 | 12.22717 | 0.203246 | 0.270894 |
| Skewness | 6.285227 | 4.610086 | 0.327007 | 10.15273 |
| Kurtosis | 51.76564 | 29.19455 | 4.663428 | 108.0172 |
| Jarque-Bera | 12680.52 | 3855.831 | 15.97364 | 57204.60 |
| Probability | 0.000000 | 0.000000 | 0.000340 | 0.000000 |
| Sum | 141.1916 | 891.5734 | 80.79850 | 6.793600 |
| Sum Sq. Dev. | 594.4142 | 17790.93 | 4.915770 | 8.732658 |
| Observations | 120 | 120 | 120 | 120 |

**Source: Researcher's Computation 2022 from E-view 9.0 Software**

Table 4.1 displays the summary statistics for the dependent and independent variables for the 12 sampled deposit money banks. According to the descriptive statistics, the banks' average Tobin Q is 1.177, which is a quite low value. The median Tobin Q value for the deposit money institutions in our sample, at 0.703, is lower than the mean value, indicating that Tobin Q values are not uniformly distributed. This is supported further by the low (negative) minimum value of -2.250 and the reasonable maximum value of 20.71. The substantial variability in Tobin q values for the chosen banks is indicated by the standard deviation of 2.23, which is larger than the mean value. The skewness value of 6.285, which is positive and implies positive skewness, is also not

excessively high. The J-B value of 12680.52 passes the significance test, and it is evident that the Tobin q values across the banks are not normally distributed because the Kurtosis value of 51.76 is low. The independent variables share Tobin Q's low variability properties. J-B values, on the other hand, were significant and non-normally distributed for all independent variables except one. Additionally, the positive skewness for the independent variables.

## 4.2 Correlation Analysis

It is essential to examine, in a preliminary manner, the relationships among the variables in the study. The correlation analysis is used to conduct these investigations. The result of the correlation tests is reported in table 4.2.

| | TQ | NPL | LADR | LLP |
|---|---|---|---|---|
| TQ | 1.000000 | | | |
| NPL | 0.064154 | 1.000000 | | |
| LADR | -0.033860 | 0.211719 | 1.00000 | |
| LLP | -0.158814 | 0.208621 | -0.174695 | 1.000000 |

**Source: Researcher's Computation 2022 from E-view 9.0 Software**

The correlation coefficient between each independent variable used in the study is displayed in Table 4.2. Each pair of independent variables' correlation coefficients shouldn't be greater than 0.80; otherwise, multicolinearity may be believed to be present in the independent variables with a coefficient between them of 0.80 or higher. The correlation matrix indicates that there is no multicolinearity because the correlation between the independent variables is either low or moderate, i.e., the correlation coefficient between all of the independent variables is less than 0.80.

## 4.3 Empirical Results on the Panel Analysis

The Hausman test for random effects is the accepted test to choose which panel analysis approach to use. Table 4.4 reports the test results for the Tobin Q equation.

**Table 4.3: Summary of Hausman Test for Cross-Section Random Effects**

| **Test for cross-section random effects** | | | |
|---|---|---|---|
| Test Summary | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob. |
| Cross-section random | 26.560982 | 3 | 0.0000 |

**Source: Researcher's Computation 2022 from E-view 9.0 Software**

From Table 4.3, the p-value 0.00 <0.05 hence the null hypothesis that the random effect model is more appropriate is rejected and the alternate hypothesis that the fixed effect model is more appropriate is accepted. The fixed-effect method is therefore used in the estimation of the Tobin Q equation.

***Fixed Effects Model***

Based on the findings in table 4.5, the statistic offers scant support for the alternative theory, according to which there is mis-specification when the fixed effect model is used. We would be focusing our research on the estimates produced by the fixed effect model since we cannot rule out the alternative hypothesis that unobserved heterogeneity is uncorrelated with regressors. The fixed-effect technique is therefore the optimum course of action. We present the fixed-effects estimates in this investigation and use the findings to derive conclusions. Table 4.4 shows the results of the fixed-effects model.

**Table 4.4: Fixed-Effects Results**

**Dependent Variable: Tobin Q**

| *Variable* | *Coefficient* | *t-Statistics* | *Prob.* |
|---|---|---|---|
| C | 0.631093 | 0.857481 | 0.3931 |
| NPL | -0.016478 | -0.962142 | 0.3382 |
| LADR | 1.128902 | 1.026278 | 0.3071 |
| LLP | -1.628316 | -2.231187 | 0.0278** |
| | $R^2 = 0.34$; Adjusted $R^2 = 0.25$; F = 3.84; Prob (F- statistics) = 0.000<br>D.W = 1.78 | | |

**Source: Researcher's Computation 2022 from E-view 9.0 Software**

$p < 0.000$ is statistically significant at 1% level. ** $p < 0.05$ is statistically significant at 5% level.

According to Table 4.5's outcome, the goodness of fit statistics were average. The three explanatory variables (non-performing loans, loans and advances, and loan loss provision) explained around 34% of the systematic variance of Tobin Q for the tested deposit money institutions, as indicated by the R2 squared value of 0.34. For the studied deposit money banks, the explanatory factors were able to account for around 25% of the systematic variation of Tobin Q after degree of freedom adjustment. This suggests that the explanatory variables in the Tobin Q of the deposit money banks in Nigeria are weak predictors. There is a significant linear association between Tobin Q and the independent variables, as indicated by the F-value, which is significant. As a result, the hypothesis that there is a meaningful linear relationship between the total explanatory factors and the dependent variable, Tobin Q, is validated. Since there is no autocorrelation in the estimated model, the estimates are reliable for guiding policy, according to the D.W. statistic value of 1.78.

By examining the individual coefficients of the variables in terms of non-performing loans, loans and advances, and loan loss provision, it is possible to pinpoint the precise contribution of each explanatory variable to Tobin Q's behavior. The findings in Table 4.5 reveal that loans and advances have a positive sign, indicating that they have a favorable impact on Tobin Q in keeping with what was anticipated a priori. Contrary to a priori expectation, non-performing loans and loan loss provision show a negative sign, showing that they have a negative association with Tobin Q of the deposit money banks. We concentrate more on the importance of the model's coefficients. At the 5 percent level, Tobin Q is significantly impacted by the coefficients of loan loss provision. While failing the significance test are loans, advances, and non-performing loans.

## 4.4 Hypotheses Testing

Based on the findings from the estimated models of the study, the study's hypotheses are put to the test in this part. The coefficients estimated in the fixed effect estimates in the empirical analysis are used to test the hypotheses.

**Hypothesis One**

$H_{01}$: *Non-performing loans does not have significant effect on the performance of quoted deposit money banks in Nigeria*

**Decision Rule:** according to table 4.5, with a t value of -0.96 and a probability value of 0.3382. This accepts the null hypothesis, according to which non-performing loans in Nigeria's quoted deposit money banks do not significantly affect their performance. The alternative hypothesis, according to which non-performing loans significantly affect the performance of Nigerian quoted deposit money banks, is thereby disproved.

**Hypothesis Two**

$H_{02}$: *There is no significant relationship between loans and advances and bank performance on quoted Deposit Money Banks in Nigeria*

**Decision Rule:** with t value 1.02 and probability value of 0.3071, as shown in table 4.5. This accept the null hypothesis which states there is no significant relationship between loans and advances and bank performance on quoted Deposit Money Banks in Nigeria. Therefore, the alternative hypothesis which states that there is a significant relationship between loans and advances and bank performance on quoted Deposit Money Banks in Nigeria is rejected.

**Hypothesis Three**

$H_{03}$: *There is no significant effect on loan loss provision and performance of quoted deposit money banks in Nigeria*

**Decision Rule:** with t value of-2.231187and probability value of 0.0278, as shown in table 4.5. This reject the null hypothesis which states that there is no significant effect on loan loss provision and performance of quoted deposit money banks in Nigeria. Therefore, the alternate hypothesis which states that there is a significant effect on loan loss provision and performance of quoted deposit money banks in Nigeria accepted.

## 4.5 Discussion of Results and Policy Implications

The empirical results show that non performing loan has a negative significant impact on Tobin Q of deposit money banks. This suggests that an increase in nonperforming loan will lead to a decrease in the performance of deposit money banks. The implication of this finding is that the performance of deposit money banks in Nigeria will reduce from increase in Non-performing loan. This finding contradicts the result of Jared & Vitalis (2019) and Saliu & Adewole (2020)

who stated that non-performing loan has a negative and significant effect on the performance of deposit money banks.

Another important finding from the empirical analysis is loans and advances have a positive and insignificant impact on Tobin Q of deposit money bank. This suggests that an increase in loan and advances will lead to increase in the performance of deposit money banks. The implication of these findings is that with increased in loans and advances of deposit money banks, the performance of deposit money banks will increase. This finding is in line with the study of Kazeem (2015) who reported a positive and insignificant impact of loan and advances on the performance of deposit money banks.

Also, the result reveals that loan loss provision has a negative and significant impact on Tobin Q. This suggests that an increase in the provision of loan loss will lead to a decrease in deposit money bank performance. The implication of this finding is that with increased in loan loss provision, deposit money banks performance in term of profitability will reduce. This finding is in line with the studies of Safdar (2014) who reported a negative and significant effect of loan loss provision on bank profitability.

# CHAPTER FIVE

# SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

## 5.1 Introduction

This chapter's major mission is to provide an overview of the findings, draw inferences from the research, and offer suggestions based on the goals of the study and the big picture of the key findings. Following is the chapter's organization: section 5.2 presents a summary of the results, section 5.3 deals with the conclusion, and section 5.4 lists the recommendations.

## 5.2 Summary of Findings

This study aimed to investigate the impact of non-performing loans on Nigerian quoted deposit money banks' performance. Several assumptions regarding the connection between non-performing loans, loans and advances, and loan loss provision were made in order to aid the investigation. Descriptive statistics, correlation analysis, and the panel random effect technique were used to study a sample of fourteen (14) deposit money institutions between 2015 and 2019. The association was objectively investigated using the panel data regression approach. The analysis produced the following precise conclusions in particular:

i. The performance of Nigeria's deposit money banks is negatively and insignificantly impacted by non-performing loans.
ii. The association between loans and advances and bank performance on listed Nigerian Deposit Money Banks is both favorable and unimportant..
iii. The loan loss provision has a negative and severe impact on the performance of Nigeria's quoted deposit money banks.

**5.3 Conclusion**

This study uses descriptive statistics, correlation analysis, and panel data regression techniques to empirically investigate the impact of non-performing loans on the profitability of listed deposit money banks in Nigeria from 2015 to 2019. Overall, the study's findings seem to show that loan loss provision significantly affects quoted deposit money institutions' performance. Furthermore, any increase in the number of non-performing loans would have a negative impact on how well Nigeria's deposit money banks performed.

**5.4 Recommendation**

The study recommends that:

i. There is need for the Nigeria Deposit Insurance Corporation (NDIC) and the Central Bank of Nigeria (CBN) to oversee banks more closely in order to prevent a potential rapid increase in non-performing loans (NPLs); Banks should uphold strict credit standards while Apex Bank and other regulatory bodies should closely monitor bank credit operations. Banks should also gather and perfect all collateral used to secure loans. In the event of default, the collateral should be greater than the amount of the granted loan.

ii. Flexible credit policy: The banking industry should adopt an efficient credit policy that takes the form of flexible tenure, renegotiated credit terms, and conversion. By slowing the pace of nonperforming loans, this approach might significantly lower the likelihood of default as the performance of deposit money banks arises.

iii. Healthy interest rate policy- A healthy interest rate policy is based on the difference between the lending rate and deposit rate. For performing loans to start and for nonperforming loans to be greatly reduced, an optimal margin is needed.

iv. Macroeconomic policies that focus on banks: In less developed nations like Nigeria, banks are the "heartbeat" of the economies. deposit money banks should employ competent

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