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# RISK MANAGEMENT AND FINANCIAL PERFORMANCE OF LISTED COMMERCIAL BANKS IN NIGERIA

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**Abstract**
This study examined the effect of risk management on financial performance of listed commercial banks in Nigeria. Specifically, the study examined effect of non-performing loans, loan loss provision, and prime lending interest rate on financial performance (proxy by Return on Assets) of listed commercial banks in Nigeria. A multiple regression estimation approach was employed on information extracted from a sample consisting of fifteen (15) listed banks on Nigerian Exchange Group between the years 2012 to 2019. Panel Least Square (PLS) regression technique was employed in estimating the data and testing the formulated hypotheses. The findings revealed that non-performing loans and prime lending interest rate have no significant effect on financial performance of listed commercial banks in Nigeria, while loan loss provisions exhibited a significant relationship between it and return on equity of listed commercial banks in Nigeria In line with the findings, the study recommends that banks should maintain high credit standards while the apex bank (CBN) and other regulatory agencies should maintain high surveillance on banks' credit operations. Also, management should as a matter of importance know how their credit policy affects the operation of their banks so as to ensure judicious utilization of deposits and maximization of profit.
**Keywords: Risk management, non-performing loans, Loan loss provisions, Prime lending rate, financial performance and commercial banks.**

## Introduction

The role the banking sector plays toward the development and growth of any economy cannot be overemphasized and is due largely to the fact that all other sectors of the economy, be it: manufacturing, oil and gas, real estate, mining to mention but few, all depend on the banking sector for their survival (Akintola & Adesanya, 2021). Isedu and Erhabor (2021) see banks as very important and special institutions in every economy. They opined that banks exist because they perform certain special functions that other financial intermediaries cannot replicate. These special functions are the intermediating roles between savers (depositors) and the borrowers; that is, mobilizing idle financial resources from the surplus units (that is, savers, through the various accounting systems and bills discounting), and making these financial resources available to the deficit units (that is, fund seekers who are in need of funds - the borrowers) through loans and/or credits, and when they (the banks) invest in securities. Banks offer important services of providing deposit and loan facilities for personal and corporate customers, making credit and liquidity available into business organizations and facilitate the nation's payments systems. Besides, banks are also the vehicles of transmitting effective monetary policy of the Central Bank and in a way they share the responsibility of stabilizing economy (Abubakar (2021). Banks primarily exist to make profit and the profit motive has often been perceived as

representing a lack of concern for all other objectives of an organization. But today banks are realizing that in order to stay profitable as well as enhance financial performance in a rapidly changing environment, they would have to employ the practice of risk management. Yimka, Taofeek, Abimbola and Olusegun (2015) opined that credit risk is the possibility that the actual return on an investment or loan extended will deviate from that, which was expected. Adegbie and Adebanjo (2020) posited that risk management is best practice in banks and above 90% of the banks in the country have adopted the best practice. Inadequate credit policies are still the main source of serious problem in the banking industry and hence effective risk management has gained an increased focus in recent years. The main role of an effective risk management policy must be to maximize a bank's risk adjusted rate of return by maintaining credit exposure within acceptable limits. Moreover, banks need to manage credit risk in the entire portfolio as well as the risk in individual credits transactions. Ndyagyenda (2020) explained that, the aim of risk management is to minimize bank's risk adjusted rate of return by maintaining credit risk exposure within acceptable boundary. Banks need to manage the credit risk inherent in the entire loan portfolio as well as the risk in individual credit or transaction. Munangi and Sibindi (2020) disclosed that, a poor performing economy leaves people heavily mired in debt and defaulting leading to bank failure, since credit is an immense component of the financial soundness of banks. Therefore, effective oversight of non-performing loans is imperative to boost bank performance and offer guidance on economic efficiency. Performance of banks is threatened by the growth of non-performing loans, due to absence of risk management.

**Statement of Problem**

The issue of risk in the bank lending activities is of serious concern to the bank authorities and regulators, because of the high levels of perceived risks resulting from some of the characteristics of clients and their business environment, which can easily cause banks symptomatic distress (Jaiye, 2016). Given the strong association between credit risk policy, inadequate internal supervision and weak management, risk management typified by poor lending practices could be taken as the most serious causes of distress in the Nigerian financial service industry. Poor management of credit risk leads to the accumulation of non-performing loans (NPLs), which has become a serious problem in the Nigerian banking industry (Adekun, Ishola & Felix, 2017). Empirically, several studies have been conducted on the association between risk management and commercial banks performance; for example, Rahim, Ashraf, Iftikhar, Khan, Mehmood and Siddique (2021), Ofeimun and Akpotor, (2020), Omisope and Ajibade (2020), Ali (2020), Ugwuka and Ajuzie (2019), Oyetayo, Osinubi and Amaghionyeodiwe (2019), Ahmed, Rehan, Chhapra and Supro, (2018), Wambari and Mwangi (2017), Ndubuaku, Ifeanyi, Nze and Onyemere (2017) among others. From the considerable amount of research so far been conducted in both developed and developing countries on risk management and commercial banks performance, the researcher observed the existence of theoretical divergence and inconsistency in the finding of the previous studies. Examples are the studies of Rahim, Ashraf, Iftikhar, Khan, Mehmood and Siddique (2021), Ofeimun and Akpotor, (2020), Omisope and Ajibade (2020), Ali (2020), Ugwuka and Ajuzie (2019), Oyetayo, Osinubi and Amaghionyeodiwe (2019), who found a significant impact of risk management on corporate performance. On the contrary, the study of Ahmed, Rehan, Chhapra and Supro, (2018), Wambari and Mwangi (2017), Ndubuaku, Ifeanyi, Nze and Onyemere (2017), Ali (2020) found that risk management do not significantly enhance corporate performance. The existence of these inconsistencies in the finding of the previous studies creates room for knowledge gap and the call for more investigation in this light and consequently the need for this study.

**Objectives of the Study**

The main objective of this study is to investigate the effect of risk management on financial performance of listed commercial banks in Nigeria. Specifically, this research study seeks to:

i. Ascertain the effect of non-performing loans on Return on Equity (ROE) of listed commercial banks in Nigeria.
i. Examine the relationship between loan loss provision and Return on Equity (ROE) of listed commercial banks in Nigeria.
ii. Determine the effect of prime lending interest rate on Return on Equity (ROE) of listed commercial banks in Nigeria.

**Research Questions**

Against this backdrop, the following research questions were raised:

i. To what extent does non-performing loans affect Return on Equity (ROE) of listed commercial banks in Nigeria?
i. What is the effect of Loan loss provision on Return on Equity (ROE) of commercial banks in Nigeria?
ii. How does prime lending interest rate impact on Return on Equity (ROE) of listed commercial banks in Nigeria?

**Research Hypotheses**

The hypotheses of this research study are stated in their null form below:

$H_{01}$: Non-performing loans have no significant effect on Return on Equity (ROE) of listed commercial banks in Nigeria.
$H_{02}$: There is no significant relationship between loan loss provisions and Return on Equity (ROE) of listed commercial banks in Nigeria.
$H_{03}$: There is no significant effect of prime lending interest rate on Return on Equity (ROE) of listed commercial banks in Nigeria.

**Review of Related Literatures**

**Concept of Bank Performance**

Performance may be defined as the execution, achievement, or accomplishment of specific activities (Ugwuka & Ajuzie, 2019). Bank performance reflects the way in which the resources of banks are used to achieve its objectives. It is the adoption of a set of indicators which are measures of the bank's current status, effectiveness and efficiency (Reserve bank of India 2014). Bank performance demonstrates the efficient use of resources and the ability of a business to make profit (Ugwuka & Ajuzie, 2019). It is an assessment of the financial conditions and health of a bank using financial ratios (Torbira & Zaagha, 2016). Hence bank performance is very crucial to the various stakeholders such as depositors, creditors, shareholders, government and managers. The main objective of banks is to maximize profit and this is very important for the purposes of paying corporate taxes, paying interests to depositors, salaries and wages to staff, dividends to shareholders and meeting other expenses (Ezike & Oke, 2013). Profitability is essential for a bank to sustain its operations and for its shareholders to obtain fair returns on their investments. Profitability is a bank's first line of defense against unusual losses as it strengthens its capital position and improves future earnings through investments of retained earnings (Ofeimun & Akpotor, 2020). A good means of measuring performance of banks and other

business enterprises is the financial analysis. Financial analysis is a process of identifying the financial strengths and weaknesses of a firm by establishing relationship between the items of the statement of financial position and the income statement (Ajao, 2010).

Ofeimun and Akpotor, (2020) observed that another major yardstick for measuring performance of banks is the CAMELS approach. This approach is used by both regulatory authority and management to assess the level of performance of banks on their soundness, solvency and liquidity position.

The acronym CAMELS means
C – Capital Adequacy.
A – Assets Quality
M –Management.
E –Earnings .
L –Liquidity.
S –Sensitivity to market risks.

This serves as a major tool for assessing solvency level of banks by the monitoring authority. There are many factors or key parameters to analyze bank performance, but for the purpose of this study Return on Equity (ROE) was used as proxy for financial performance. ROE also known as return on common equity is a ratio that provides investors with insight into how efficiently a bank and its management team are managing the money that shareholders have contributed to it. In other words it measures the profitability of the bank in relation to the shareholders' equity. The higher the ROE, the more efficient a company's management is at generating income and growth from its equity financing (Otuya & Eginiwin, 2017). ROE is often used to compare a bank/company to its competitors and the overall market. The formula is especially beneficial when comparing firms in the same industry since it tends to give accurate indications of which banks are operating with greater financial efficiency (Ofeimun & Akpotor, 2020).

**Risk management**

Risk management in financial institutions has become crucial for the survival and growth of these institutions. It is a structured approach of uncertainty management through risk assessment, development of strategies to manage it and mitigation of risk using managerial resources (Afriyie & Akotey, 2011). As observed by Olaoye and Fajuyagbe (2020), Credit Risk Management (CRM) involves the administration of credit facility to ensure orderly and full payment, monitoring of credit facilities as well as identifying strategies when credits actually deteriorate. Adegbie and Adebanjo (2020) defined credit risk as the risk arising from the type and nature of credit activities undertaken by the institution. Credit risk arises from a counterparty's inability or unwillingness to fully meet its on and/or off-balance sheet contractual obligations. Exposure to this risk results from financial transactions with a counterparty including issuer, debtor, borrower, broker, policyholder or guarantor. Munangi and Sibindi (2020) described credit risk is the risk of default, the extent of fluctuations in debt instruments and derivatives valuation which varies and depends on the creditworthiness of borrowers. Munangi and Sibindi (2020), posit that credit risk must be identified, measured, monitored, and managed so as to ensure that the credit risks on loans are properly priced to acquire the set targets of returns from the information obtained during loan documentation. Yimka, Taokeek, Abimbola and Olusegun (2015) define credit risk as losses from the refusal or inability of credit customers to pay what is owed in full and on time. The main sources of credit risk include,

limited institutional capacity, inappropriate credit policies, volatile interest rates, poor management, inappropriate laws, low capital and liquidity levels, directed lending, massive licensing of banks, poor loan underwriting, reckless lending, poor credit assessment, no non-executive directors, laxity in credit assessment, poor lending practices, government interference and inadequate supervision by the central bank. To minimize these risks, it is necessary for the financial system to have; well-capitalized banks, service to a wide range of customers, sharing of information about borrowers, stabilization of interest rates, reduction in non-performing loans, increased bank deposits and increased credit extended to borrowers.

Nwude and Okeke (2018) posit that risk management provides a clear and structured approach to identifying, measuring and prioritizing risks in order to take appropriate actions to minimize losses. An effective credit risk management (ECRM) practice does not eliminate risks, but minimize risks. The implementation and maintenance of ECRM warrants firm commitment to improve the efficiency of business processes. The efficiency can attracts some benefits like (i) saving resources: Time, assets, income, property and personnel; (ii) Protection of an organization reputation and public image; (iii) prevention or reduction of legal liabilities; (iv) increasing the stability of operations and promoting continuous improvement; (v) protecting people and environment from harm; (vi) avoiding fines for corporate non-compliance with regulations and legislation; (vii) enhancing the ability to prepare for unforeseen and unexpected circumstances; (viii) enhancing competitive advantage through improved decision support and market intelligence based on more accurate risk-adjusted management information; (ix) improved shareholder value and confidence, which is especially valuable in times of crisis when shareholder trust is stressed to its maximum limits; and (x) assisting in clearly defining suitable risk management techniques, including insurance needs.

**Components of Risk management**

**i. Non-Performing Loans**

Loans are generally repaid according to pre-agreed terms of agreement as detailed in the repayment schedule which states the amount of principal and interest that is due during the tenor of the loan (Ozurumba, 2016). If the loan is repayable on the demand of the lender, it is called a demand loan. If the loan is repayable in equal monthly installments (EMI), it is referred to as an installment loan. If repayable in lump sum at the loan's maturity (expiration) date, it is a time loan. Banks further classify their loans according to the assets financed such as consumer loan for consumer items. Others are commercial, industrial, construction, personal or mortgage. Further loan classification could be secured or unsecured depending on whether they were properly backed by collateral (Ozurumba, 2016). Non-Performing loans arises from the extension of credit facilities to customers (Inekwe, 2010). This exposes banks constantly to credit risk due to the possibility that the borrower will default. Usually, banks try to avoid or minimize credit risk in their portfolio. There are various ways of evaluating the credit worthiness of a borrower, one of which is the 5Cs of credit, i.e Character, Capacity, Capital, Condition and Collateral (Ozurumba, 2016). To Onyia and Oleka (2010), they are also known as the Canons of good lending. Koskei (2020), opined that non-performing loans are one of the basic indicators of the financial strength and stability of banks and form the main measure of credit risk in the banking system. Khan, Siddique and Sarwar, 2020) is of the view that advances that remain unpaid are called Non-Performing Loans. Khan, Siddique and Sarwar (2020) further explain that loans would be considered Non-Performing Loans if they do not produce interest and principal amount for a minimum of 90 days. Jing (2020) stated that a non-performing commercial bank loan is a loan in which the borrower has defaulted or has not made any scheduled loan payments

for 90 days or more. The non-performing loan ratio of a bank is a percentage measure of loans already at or at risk of becoming non-performing out of the total amount of loans at the bank. As research suggests, an excessively high non-performing loan ratio causes bank to limit their credit supply to borrowers, often causing a credit supply contraction in the immediate aftermath. Banks also risk profit loss and even bankruptcy if no measures are taken to reduce high levels of non-performing loan ratios. At the macroeconomic level, countries with economies characterized by banks with high non-performing loan ratios often experience sluggish economic growth, a dramatic decrease in market confidence, increased distortion of credit allocation, sustained or increased demand of loans from borrowers, and a large contraction in available credit supply. To that end, both bank administrations as well as national governments take measures to ensure non-performing loan ratios are kept at healthy levels (Jing, 2020).

**ii. Loan Loss Provisions**

Loan loss provision is defined as the portion of banks' profit that is set aside through regular deduction to pay off part or whole of sticky past due of its borrowers in compliance with the tenets of prudential guidelines of the National Deposit Insurance Corporation (NDIC) on non-performing credits (Ogundipe, Asikhia, Kabouh & Ajike, 2020). Golin and Delhaise (2013), posit that loan loss provision is "a noncash charge against operating income made to account for expected or unexpected loan losses." and can be the general provision or specific provision: - General provision covers all loan losses which are not yet determined but banks consider those loans to have a high risk of default. - Specific provision term, on the other hand, is used for loans that are already identified as having troubles to pay back. Loan-loss provisioning policy is critical in assessing financial system stability, in that it is a key contributor for fluctuations in banks' profitability and capital positions, which has a bearing on banks' supply of credit to the economy (Beatty & Liao, 2009). In principle, loan loss provisions allow banks to recognize in their income statements the estimated loss from a particular loan portfolio(s), even before the actual loss can be determined with accuracy and certainty as events unfold and are actually written off. In other words, loan-loss reserves should result in direct charges against earnings during upturns in the economic cycle, as banks anticipate future losses on the loan portfolio when the economy hits a downturn. When these anticipated loan losses eventually crystallize, banks can then draw on these reserves, thereby absorbing the losses without impairing precious capital and preserving banks' capacity to continue extending the supply of credit to the economy. Ideally, the level of loan loss provisioning, should be able to reflect the beliefs of bank management on the quality of the loan portfolio that they have, indicating that provisions should be able to cover the whole spectrum of expected credit losses if they are to think of provisions as a measure of true credit risk (Dugan, 2009).

**iii. Prime Lending Interest Rate**

Money as a store of value and medium of exchange creates different types of claims. Essentially, those who lend money, expect to be compensated for handing over their liquidity for a stated period of time to users of money (Obim, John & Orok, 2018). This compensation constitutes interest rates, which is often expressed as a rate per cent per annum (Nzotta, 2004). Thus, interest represents payments made by an individual, a firm or organization for money used or borrowed (Obim, John & Orok, 2018). It also constitutes the price for a loan or a measure of the percentage rate at which the current value of a debt grows over time, to equal the future payments. However, managing risk is an important function for business organizations dealing with money, which includes banks and non-bank institutions, thus, connoting the need for interest rate. Utile, Okwori and Ikpambese (2018), maintained that interest rates are the costs a borrower has to pay

when obtaining a loan in any economy. This definition implies that, interest rates are the determinants of the cost of credits in an economy. The impact of high cost of interest rates in the society is not unconnected to the fact that borrowers may hesitate to borrow when they should. This may be because the cost of credit and the credit itself may aggregate to an amount that may be unaffordable to the borrower to pay back within the stipulated due date of the loan. The implication of this on the economy is that GDP of the economy would be low since equity financing alone cannot adequately sponsor the production activities in an economy.

Interest is the cost of hiring money or credit and Wambari and Mwangi, (2017) defined it as the reward for not hoarding money. Over the years, interest rates have remained a subject for critical assessment with diverse implications for savings mobilization and investment promotion. Banks pay interest on deposits on one hand and on the other hand they charge interest on loans and advances lent to borrowers. The difference between these two interest rates defines the interest spread which constitutes a significant proportion of the profits of banks. Interest rate variables include minimum rediscount rate, lending rate, deposit rates, treasury bills rates, as well as interbank rates (Wambari & Mwangi, 2017). Lending rates represent the price of loans extended to borrowers by commercial banks (Wambari & Mwangi, 2017). Lending rate is an important economic cost of capital; it has fundamental implications for the economy whether seen from the point of view of cost of capital or from the perspective of opportunity cost of funds (Awoyemi & Jabar, 2014). The rate varies little among banks, and adjustments are generally made by banks at the same time, although this does not happen with frequency. The interest rate is important because it affects liquidity in the financial markets. As direct relationship between lending rate and profitability is well established, the important role of lending rate cannot be down played. It is extremely important for financial institutions that seek to grow, to understand the influence of lending rate on the performance parameters of banks (Awoyemi & Jabar, 2014).

**Theoretical Framework**

The theories this work is anchored on are the credit risk theory and compensation theory of profit as discussed explained below:

**The Credit Risk Theory**

Merton 1974 introduced the credit risk theory otherwise called the structural theory which is said to be the default event derives from a firm's asset evolution modeled by a diffusion process with constant parameters. Credit risk according to Anderson and Salas, and Saurina, (2002) refers to the risk that a borrower will default on any type of debt by failing to make required payments. The risk is primarily that of the lender and includes lost principal and interest, disrupt loss may be complete or partial and can arise in a number of circumstances, such as an insolvent bank unable to return funds to a depositor. To reduce the lenders risk, the lender may perform a credit check on the prospective borrower, may require the borrower to take appropriate insurance, such as mortgage insurance or seek security or guarantees of third parties. In general, the higher the risk, the higher will be the interest rate that the debtors will be asked to pay on the debt (Owojori, Akintoye & Adidu, 2011).

**Compensation Theory of Profit**

This theory was formulated by Alfred Marshall in 1978; it holds that the profit is the supply price of entrepreneurship or business power where business is the supply of capitals plus supply of the ability to maintain business plus supply of organizational ability for production. This theory treats profit as a cost element and that profit is the price for the function of capital hence it is a functional theory of profit. This can serve as compensation to investors and motivate investment; it is in line with the classical theory of investment such as the accelerator theory or

the marginal efficiency of capital and marginal efficiency of investment. This research work adopted the risk management theory and compensation theory of profit. The choice of the theories are that risk management theory addressed risks embedded in loan disbursement to prevent borrowers from defaulting on debt and compensation theories of profit addressed earnings capacity in ensuring the financial soundness/stability of commercial banks.

**Empirical Review**

Alshebmi, Adam, Mustafa, Thomran and Fathelbab (2020) investigated the relationship between the non-performing loans and selected specific bank determinants (internal factors) and macroeconomic determinants (external factors) in the Saudi banking sector. The sample of the study covers all the twelve commercial banks that were operating in the Kingdom of Saudi Arabia. The study used a panel data for period from 2009 to 2018. The study employed descriptive statistics, correlation and the regression analysis as statistical tools. The correlation result showed a negative insignificant weak relationship between nonperforming loans ratio (NPLs) and return on assets ratio (ROA), growth gross domestic product (GGDP), bank liquidity risk (BLQ), and credit risk. It further indicates a positive insignificant weak relationship between the NPL and capital adequacy ratio (CAR).

Koskei (2020) examined the effect of non-performing loans on banks financial stability in Kenya's commercial banks using secondary data for the period January 2015 to December 2019. A multiple regression model was utilized in analyzing the data. Non-performing loans as measured by non-performing ratio had a positive and statistically significant relationship with banks financial stability as measured by Z a-score. The results implied that non-performing loans in Kenya's commercial banks affects the banks financial stability. Loans to deposit ratio results specified a positive and non-statistically insignificant relationship with banks financial stability. The results inferred that loan to deposit ratio do not affect the banks financial stability. Inflation rate results had a positive but statistically significant relationship with banks' financial stability indicating that inflation rate affects banks' financial stability. The results for loan growth had a negative but statistically significant relationship with banks financial stability. Bhattarai (2020) examined the effects of non-performing loan on profitability of commercial banks in Nepal with panel data collected from twelve commercial banks for five years from 2013-2014 to 2017-2018. The multiple regression model was used for data analysis. The profitability was measured by return on equity (ROE) as dependent variable whereas non-performing loan (NPL), capital adequacy ratio (CAR), liquidity (LIQ), size of banks (SIZE) and inflation (INF) were independent variables. The result of the analysis revealed that the NPL, CAR, LIQ have significant and negatively associated with ROE. Similarly, the SIZE has significant and positive association with ROE. The INF has positive but insignificant result with ROE. However, the effect of non-performing loan on profitability was very strong. Omisope and Ajibade (2020) examined the effect of financial reforms on financial performance through interest rate with the proxy of deposit and lending interest rate and returns on asset for financial performance in Nigeria and Ghana. The principal objective of the study is to determine the effect of interest rate on commercial banks financial performance in Nigeria and Ghana. Expost facto design and secondary data were employed for the purpose of this study using the selected banks annual financial reports. Five common commercial banks were selected in Nigeria and Ghana from 2012 – 2017 (6years). In an attempt to test the significance of the construct, the study used regression analysis and the result showed a positive significant effect of interest rate on financial performance of the selected banks in Nigeria while in Ghana all the hypotheses were significant except lending interest rate. Ogundipe, Asikhia, Kabouh and Ajike (2020) studied effect of

regulatory requirements on loan loss provision of commercial banks in Nigeria. The study adopted ex-post facto research design. Validated data was collected from the annual financial reports of 10 commercial banks. The panel regression analysis tool was employed to analyze the data with descriptive statistics, Pearson correlation model, multiple linear regression tools and linearity test, heteroskedasticity, autocorrelation, cointegration and Hausman test were also carried out. The result showed that regulatory requirements significantly affect loan loss provision.

Kingu, Macha and Gwahula (2018) examined the impact of non-performing loans on bank's profitability using information asymmetry theory and bad management hypothesis. This study adopted causality research design using panel data (2007 to 2015) of 16 commercial banks in Tanzania. The study employed Descriptive statistics and multiple regression analysis estimation methods. Likewise, Ordinary Least-Squares (OLS) regression technique was also used, and then Fixed Effects (FE) and Random Effects (RE) assumptions were considered. The study found that occurrence of non-performing loans is negatively associated with the level of profitability in commercial banks in Tanzania. Ahmed, Rehan, Chhapra and Supro, (2018) evaluated the impact of interest rate fluctuations on the profitability of banks. Thus, financial statements and annual report data of seven years from 2007 to 2014 were collected from 20 banks operating in Pakistan. The sampled banks were selected on the basis of highest market share and return. The study used Correlation and Regression analysis as statistical tools. The result shows that deposits with other banks and interest rate are negatively affecting the profitability of banks, while advances and loans and investment are having positive influence over profitability of banks.

Wambari and Mwangi (2017) analyzed effect of interest rates on financial performance of commercial banks in Kenya. The study adopted an explanatory research design. The study adopted a census research design; of all the 43 commercial banks in Kenya. The study used secondary data and multiple linear regression model was employed to analyze the data using statistical package for the social sciences (SPSS) version 20. The study established that lending rate ratio has positive influence on financial performance of commercial banks. Deposit interest ratio on the other hand negatively affects performance of commercial banks. Liquidity and management had influenced performance positively and negatively respectively. The study concluded that there is a positive significant relationship between lending rate ratio and financial performance of commercial banks. The study also revealed that that deposit interest ratio negatively affects bank performance and that liquidity management and asset quality affect performance positively and negatively respectively. Ndubuaku, Ifeanyi, Nze and Onyemere (2017) examined the impact of monetary policy regimes on the performance of commercial banks in Nigeria. The paper used Descriptive and Ex-post Facto Research Design. It utilized time series data collected from Central Bank of Nigeria Bulletin. The study was divided into SAP Period (1986-1999) and Post SAP Period (2000 -2013). Eight Research Questions and eight Hypotheses were raised for the study. Regression and Pearson Product Moment Correlation technique were used to analyze the data collected while t-test statistic was employed in testing the hypotheses. Monetary Policy Rate was the independent variable while Total Assets Value, Deposit Mobilization, Loans and Advances and Credit to the Private Sector were the dependent variable in different regression equations. The study discovered that Monetary Policy Rate during the SAP Period did not have significant impact on the Total Assets Value, Deposit Mobilization, Loans and Advances and Credit to the Private Sector while Monetary Policy Rate during the Post SAP Period had significant impact on the Total Assets Value, Deposit Mobilization, Loans and Advances and Credit to the Private Sector respectively. Ozurumba

(2016) examined the impact of non-performing loans on the performance of selected commercial banks in Nigeria covering the period 2000-2013 with special emphasis on Access Bank, United Bank for Africa and Union Bank of Nigeria Plc. It specifically determined the effect of non-performing loans, provision for loan loss and loans and advances on the performance of banks measured by Return on Assets and Return on Equity. The study utilized secondary data obtained from annual report and accounts of the selected banks for the period under study. The data were analyzed using ordinary least square method and ratio analysis. The specific finding of the work is that return on asset and return on equity have inverse relationship with non-performing loans and loan loss provision respectively while they are positively related to loans and advances. The conclusion therefore is that the effects of non-performing loans on Commercial Banks' performance is negative and cannot be underestimated, and poses a fundamental danger to the very existence of the Banks as corporate business entities. Aminu, Bebeji, Dogarawa and Sabari (2014) assessed the impact of loan loss provisions on banks credits in Nigeria, during the consolidation era. The methodology of the study is designed along historical approaches and use of descriptive statistics. It also used a paired sampled t-test to measure or test the research hypothesis based on the secondary data collected from 10 sampled banks over a seven years period i.e., from 2002 through 2008.The study limits itself to 2008 because thereafter other reform agendas were introduced, such that the inclusion of 2009 to 2013 might impede or distort the actual outcome of the study. The study found that loan loss provisions have a negative impact on banks credits in Nigeria.

## Methodology

The research design that is adopted for this study is a longitudinal research design covering a time period of eight (8) years that is 2012 – 2020 (eight financial years). The choice of this design is based on the nature of the study which entails the collection of data from all listed commercial banks in the Nigerian Stock Exchange. The population of the study consists of the entire Fifteen (15) commercial banks listed on the Nigerian Stock Exchange. Each company in the population must have finished its obligation in delivering annual report for the year ended 2019. and the sample size is same with population.

## Model Specification

The empirical model for this study is formulated based on relevant reviewed literatures, theoretical postulations and significant observed variables selected from highly methodological studies. In a functional form, we have; FPER = f(NPL, LLP, PLR), Expressing equation in Panel Least Square econometric form, we have

$$FPER_{it} = \beta_1 NPL_{it} + \beta_2 LLP_{it} + \beta_3 PLR_{it} + U_t$$

**Where:**

| | | |
|---|---|---|
| FPER | = | Financial Performance (proxied by return on asset) |
| NPL | = | Non-performing loans |
| LLP | = | Loan Loss Provisions |
| PLR | = | Banks Prime Lending Interest Rate |

**Operationalization of Variables**

| S/N | Variable | Abbreviation | Measurement |
|---|---|---|---|
| 1. | Financial Performance | FPER | Calculated by dividing the earnings before interest and taxes by the total assets. |
| 2. | Non-Performing Loans | NPL | This is measured as ratio of non-performing loans to total loan and advances |
| 3. | Prime Lending Interest Rate | PLR | The basic rate on which interest charged by bank is based. It is specified by CBN from time to time |
| 4. | Loan Loss Provisions | LLP | Mandatory provisions charged by banks as expenses to profit and loss account as allowance to cover bad debts |

***Source: Author's Compilation, 2022***

**Data Analysis Technique**

The main statistical tool employed in this research is "Panel Least Square Technique (PLS)" which helps us to estimate the value of the dependent variables, when we are given the value of one or more independent variables. Other statistical test like descriptive statistics, correlation matrix will also be used to analyze the data.

**Data Presentation**

The data were analyzed using correlations analysis, while the hypotheses were tested using the Panel least square (PLS) regression technique. This was achieved through the use of E-views 9.0 econometric software.

**Table 1: Correlation Analysis**
Covariance Analysis: Ordinary
Date: 01/13/22 Time: 07:10
Sample: 2012 2019
Included observations: 120

| Correlation<br>t-Statistic<br>Probability | FPER | NPL | LLP | PLR |
|---|---|---|---|---|
| FPER | 1.000000<br>-----<br>----- | | | |
| NPL | 0.039200<br>0.426147<br>0.6708 | 1.000000<br>-----<br>----- | | |
| LLP | -0.005542<br>-0.060199<br>0.9521 | 0.066574<br>0.724784<br>0.4700 | 1.000000<br>-----<br>----- | |
| PLR | -0.025972<br>-0.282222<br>0.7783 | -0.006724<br>-0.073045<br>0.9419 | -0.152363<br>-1.674642<br>0.0967 | 1.000000<br>-----<br>----- |

***Source: Eviews 9 (2022)***

Dependent Variable: FPER
Method: Panel EGLS (Period random effects)
Date: 01/13/22 Time: 07:12
Sample: 2012 – 2019
Periods included: 8
Cross-sections included: 15
Total panel (balanced) observations: 120

Swamy and Arora estimator of component variances

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| NPL | -0.001040 | 0.008399 | -0.123858 | 0.0016 |
| LLP | 0.047906 | 0.005620 | 8.524383 | 0.0000 |
| PLR | -0.000160 | 0.000179 | -0.892387 | 0.0374 |
| C | 0.157156 | 0.018644 | 8.429386 | 0.0000 |

| Effects Specification | S.D. | Rho |
|---|---|---|
| Period random | 0.000000 | 0.0000 |

| | | | |
|---|---|---|---|
| Idiosyncratic random | | 0.037025 | 1.0000 |

Weighted Statistics

| | | | |
|---|---|---|---|
| R-squared | 0.648388 | Mean dependent var | 0.032594 |
| Adjusted R-squared | 0.529201 | S.D. dependent var | 0.047812 |
| S.E. of regression | 0.036122 | Sum squared resid | 0.150054 |
| F-statistic | 23.36996 | Durbin-Watson stat | 1.521273 |
| Prob(F-statistic) | 0.000000 | | |

Unweighted Statistics

| | | | |
|---|---|---|---|
| R-squared | 0.648388 | Mean dependent var | 0.032594 |
| Sum squared resid | 0.150054 | Durbin-Watson stat | 1.521273 |

Table 1 above presented the correlation matrix of variables adopted in the study. The aim was to show how the variables are related among themselves and to also check for possible high correlations which could lead to multicollinearity problem. As observed from the result, a significant positive correlation exists between the dependent variable, that is, Financial Performance (proxied by return on asset) and the variables of Non-performing loans (NPL), while a significant negative correlation exists between the dependent variable (proxied by return on asset) and the variables of Loan Loss Provisions (LLP), Banks Prime Lending Interest Rate (PLR) at -0.005542 and -0.025972; also the variables of Banks Total Asset (BTA) showed insignificant negative associations with Financial Performance (proxied by return on asset) at -0.273648. However, all the variables that have significant association with Financial Performance (proxied by return on asset) passed the scale at 1% level of confidence. This suggests that all the independent variables move in the same direction with the dependent variable. It is also observable that the issue of high-correlation is not evident among the variables as none of the correlation coefficients is above 0.90.

**Table 2: Analysis of Panel least Square**

Dependent Variable: FPER
Method: Panel EGLS (Period random effects)
Date: 01/13/22 Time: 07:12
Sample: 2012 – 2019
Periods included: 8
Cross-sections included: 12
Total panel (balanced) observations: 120

Swamy and Arora estimator of component variances

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| NPL | -0.001040 | 0.008399 | -0.123858 | 0.8992 |
| LLP | 0.047906 | 0.005620 | 8.524383 | 0.0000 |
| PLR | -0.000160 | 0.000179 | -0.892387 | 0.3623 |
| C | 0.157156 | 0.018644 | 8.429386 | 0.0000 |

| Effects Specification | S.D. | Rho |
|---|---|---|
| Period random | 0.000000 | 0.0000 |
| Idiosyncratic random | 0.037025 | 1.0000 |

| Weighted Statistics | | | |
|---|---|---|---|
| R-squared | 0.648388 | Mean dependent var | 0.032594 |
| Adjusted R-squared | 0.529201 | S.D. dependent var | 0.047812 |
| S.E. of regression | 0.036122 | Sum squared resid | 0.150054 |
| F-statistic | 23.36996 | Durbin-Watson stat | 1.521273 |
| Prob(F-statistic) | 0.000000 | | |

| Unweighted Statistics | | | |
|---|---|---|---|
| R-squared | 0.648388 | Mean dependent var | 0.032594 |
| Sum squared resid | 0.150054 | Durbin-Watson stat | 1.521273 |

***Source: Researcher's Computation via Eviews 9 (2022)***

As shown in table 2 above, the R-squared coefficient of determination stood at 0.44 which indicates that the model explains about 44% of the systematic variations in Financial Performance (proxied by return on asset). The Adjusted $R^2$ which controls for the effect of inclusion of successive explanatory variables on the degrees of freedom was 42% meaning that about 58% of the systematic variations in Financial Performance (proxied by return on asset) were not explained by the model after adjusting for the degree of freedom. However, the proportion of the variation not captured by the model has been addressed by the error term. The f-statistics value and the associated p-value stood at 23.36996 and 0.000000 respectively indicating that the hypothesis of a joint statistical significance of the model cannot be rejected at 5% level of significance and the linearized specification of the model can be assumed as

appropriate.

The evaluation of the slope coefficients of the independent variables revealed the existence of positive relationship between Loan Loss Provisions (LLP) and Financial Performance (proxied by return on asset) as depicted by the slope coefficient of 0.047906. On the other hand, the other independent variable of non-performing loans (NPL) and Banks Prime Lending Interest Rate (PLR) have positive relationships of -0.001040 and -0.000160 respectively with Financial Performance (proxied by return on asset) as shown in the table. It is worthy to note that only the variables of Loan Loss Provisions (LLP) passed the significance test at 5% level respectively, while the other independent variables of non-performing loans (NPL) and Banks Prime Lending Interest Rate (PLR) were not statistically significant meaning they did not significantly influence Financial Performance (proxied by return on asset) during the period under review as depicted by the findings of this study. Thus, a positive change in Loan Loss Provisions (LLP) will likely influence Financial Performance (proxied by return on asset) significantly by up to 4.8%. Lastly, the Durbin-Watson value of 1.52 suggests that there is no evidence of autocorrelation among the error term.

**Test of Hypotheses**

The employed hypotheses are statistically tested below as shown in their null form. The study sets its decision rule for the acceptance of the hypothesis at 5% level of significance; hence, the null hypothesis would be rejected if the probability value is less than 5% (0.05). The following are the results of the tested hypothesis:

**Hypothesis One:**

$H_{01}$: Non-performing loans have no significant effect on the performance of listed commercial banks in Nigeria. The first hypothesis of this study seeks to justify if there is significant relationship between non-performing loans (NPL) and Financial Performance (proxied by return on asset). Utilizing the regression output in the previous table, and judging by the significance level of 0.9016 which is greater than the 0.05 significance level as depicted in the regression Table 2, the study therefore accepts the null hypothesis. This can be concluded that non-performing loans have no significant effect on the performance of listed commercial banks in Nigeria during the period of the study.

**Hypothesis Two:**

$H_{02}$: There is no significant relationship between loan loss provisions and the performance of listed commercial banks in Nigeria. In this second hypothesis, the study seeks to clarify whether or not if there is a significant relationship between Loan Loss Provisions (LLP) and Financial Performance (proxied by return on asset) (FPER). Based on the regression result in table 2, Loan Loss Provisions (LLP) was positively and significantly related to Financial Performance (proxied by return on asset) (FPER). It had a p-value of 0.0000 which is less than the critical value of 0.05. Hence, the null hypothesis as stated is rejected. This means that there is a significant relationship between loan loss provisions and the performance of listed commercial banks in Nigeria.

**Hypothesis Three**

$H_{03}$: There is no significant effect of prime lending interest rate on the performance of listed commercial banks in Nigeria. This third hypothesis of the study seeks to determine whether or not a significant relationship exists between Banks Prime Lending Interest

Rate (PLR) and Financial Performance (proxied by return on asset) (FPER). Based on the regression output in the previous table 4.6, and judging by the significance level of 0.3740 which is greater than the 0.05 significance level as depicted in the regression. The study therefore accepts the null hypothesis and concludes that there is no significant effect of prime lending interest rate on the performance of listed commercial banks in Nigeria during the period of the study.

**Discussion of Findings**

Hypothesis $H_1$ predicts that non-performing loans have no significant effect on the performance of listed commercial banks in Nigeria. Contrary to expectations, table 2 shows that non-performing loans (NPL) is not statistically significant in explaining the variations in the performance of listed commercial banks in Nigeria. This prediction by the regression model implies that the performance of listed commercial banks in Nigeria is not influenced by non-performing loans (NPL). This is consistent with the findings of Alshebmi, Adam, Mustafa, Thomran and Fathelbab (2020), Kingu, Macha and Gwahula (2018) whose studies revealed insignificant relationship between nonperforming loans ratio (NPLs) and financial performance. Hypothesis $H_2$ seeks to clarify whether or not there is a significant relationship between loan loss provisions and the performance of listed commercial banks in Nigeria. In line with expectations, Table 2 shows that return on asset is positively and significantly influenced by earnings management. This finding is consistent with Kelvin (2020) and Okougbo and Okike (2015) who found a positive and significant association between return on equity and earnings management. Hypothesis $H_3$ seeks to clarify whether or not there is no significant effect of prime lending interest rate on the performance of listed commercial banks in Nigeria. Contrary to expectations, table 2 shows that Banks Prime Lending Interest Rate (PLR) is insignificant in explaining the variations in the performance of listed commercial banks in Nigeria. This is consistent with the findings of Ahmed, Rehan, Chhapra and Supro, (2018) and Ogunbiyi and Ihejirika (2014) who found that interest rate is negatively affecting the performance of banks.

**Conclusion**

The outcome of this study offered an important insight into risk management and the performance of listed commercial banks in Nigeria. The findings as revealed by the analysis show that Loan Loss Provisions (LLP) significantly influences Financial Performance (proxied by return on asset) among listed banks in Nigeria, while Non-performing loans (NPL) and Banks Prime Lending Interest Rate (PLR) exhibited insignificant relationship with Financial Performance among listed banks in Nigeria for the period under review, hence we can conclude that a unit change in Loan Loss Provisions (LLP) influences return on asset) by 0.00% and 0.00% respectively while a unit change in Non-performing loans (NPL) and Banks Prime Lending Interest Rate (PLR) decreases return on asset by 0.90% and 0.37%.

**Recommendations**

Based on the above findings, the following recommendations are made:

i). Banks should maintain high credit standards while the Apex Bank and other regulatory agencies should maintain high surveillance on banks' credit operations.

ii). Management of commercial banks should as a matter of importance know how their credit policy affects the operation of their banks so as to ensure judicious utilization of deposits and maximization of profit. Improper risk management reduces the bank financial performance and

increase loan losses and non-performing loan which may eventually lead to financial distress.

iii). Central Bank of Nigeria should regularly assess the lending attitudes of financial institutions by assessing the degree of credit crunch by isolating the impact of supply side of loan from the demand side taking into account the opinion of the firms about banks' lending attitude.

iv). Securities market should be strengthened to create a positive impact on the overall development of the banking sector by increasing competitiveness in the financial sector. When the range of portfolio selection is wide people can compare the return and security of their investment among the banks and the securities market operators.

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