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Effect of Credit Management on the Financial Performance of Selected Deposit Money Banks in Nigeria

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Abstract
This study examines the impact of credit management on the financial performance of certain deposit money banks in Nigeria. The objective of the research is to determine the impact of the capital adequacy ratio and loan loss provisions on the return on assets of Guaranty Trust Bank, United Bank for Africa, and Zenith Bank from 2007 to 2022. The research used secondary data obtained from the Central Bank of Nigeria's statistics bulletin for the 2022 issue. The acquired data was subjected to analysis using panel least square regression and granger causality test. The findings indicated that the Capital Adequacy Ratio has an adverse impact on the Return on Assets of Deposit Money Banks in Nigeria, while the Loan Loss Provision also has a detrimental influence on the Return on Assets of Deposit Money Banks in Nigeria. The research finds that a decrease in the capital adequacy ratio and loan loss provisions has a beneficial impact on the return on assets of Deposit money institutions. The research suggests that Banks should conduct thorough investigations before lending in order to decrease the occurrence of loan defaults. Additionally, Banks should guarantee that the capital adequacy ratio is maintained at the lowest permissible safe level.

Keywords: Credit, Banks, Management, Loan loss, Provision, Capital Adequacy, Return on assets.

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1.0 Introduction

Financial institutions facilitate the flow of funds in an economy. They are the middlemen that enhance the flow of funds from the surplus sector to the deficit sector of nations. This they achieve by lending part of their deposits to the eligible loan applicators. Bank channel their lending to various sectors of the economy such as agriculture, industrial, and commercial sectors of an economy (Hacievliyagil & Eksi, 2019).

Bank credit has a long history dating back centuries, with roots in ancient civilizations like Mesopotamia around 2000 BC (Hudson, 2020). In ancient Greece and Rome, merchants and traders extended loans to fund trade, based on personal relationships and trust. In the Middle Ages, Italian merchant families played a significant role in the development of modern banking, establishing practices in cities like Florence and introducing double-entry bookkeeping and bills of exchange. In England, goldsmiths issued receipts as a means of payment, laying the foundation for present-day banking and paper money. Today, banks extend credit to individuals, institutions, and governments in emerging economies like Nigeria, allowing them to borrow to fill deficit gaps in their businesses. Financial institutions and governments worldwide (Gabor & Brooks, 2020), regulate the sophisticated banking system.

Credit risk is the chance that the borrower will default in repayment of the borrowed fund. This risk adversely affects the lender, which further results in increased cost for collection, loss of principal and interest, and disruption to cash flow encountered in managing difficult loan customer (Aslam et al, 2020). These risks are influenced by the borrower's credit history, his financial stability and economic conditions. Lenders use credit risk assessment to determine the interest rates, terms, and amount of credit they will extend to a borrower. Credit extension is largely the major source of revenue and the greatest source of risk to DMB.

The Problem of excessive high level of bad debt in banks, which was caused by poor corporate governance practices, lax credit administration, processes and non-adherence to credit risk management practices. Nonperforming loans reduces the amount of new loans given by banks and as such can put them out of business. Also, banks management non adherence to and poor implementation of CBN code of corporate governance due to high level of corruption in the country and huge corporate profit appetite by banks management give rise to reckless lending, most of which end up as bad and irrecoverable debts. Improper management of bank loans result in economic crisis. All these Problems prompted the researcher to examine the effect of credit management on the financial performance of selected deposit money banks (DMBs) in Nigeria.

Abdel-Basset et al. (2019) revealed that risk management is the process of identifying risks, assessing their implications, deciding on a course of action, and evaluating the results. The nexus between credit management and financial performance is such that the latter is dependent on the former. The financial performance of banks is achieved through proper credit management. Credit management is a bank policy that set out to handle problems that will arise in loan recovery. The performance of commercial banks influences economic growth positively. This research paper examined the effect of credit management on selected DMB in Nigeria with critical examination of their loan loss provision and capital adequacy, which creates a gap; distinct from what has been covered by other researchers.

2.0 Literature Review

Related literature review suggests non-adherence to corporate governance and rules and guidelines on lending creates problems in the banks liquidity and profitability. Bank credit is the amount of credit available to a business or individual from a banking institution in the form of loans. Bank credit, therefore, is the total amount of money a person or business can borrow from a bank or other financial institutions (Andrieu et al, 2018).

Credit risk is the likelihood of incurring losses resulting from nonpayment of a loan (principal and/or interest) by a debtor. Zamore et al (2018) sees credit risk as the measure of functions in debt instruments and derivatives due to changes in the underlying credit quality of borrowers.

Suresh and Paul (2018) portray credit risk as possibility that loan extended to customer by bank might not be paid at the due date or time (Bouteille & Coogan-Pushner, (2021). This poses a serious threat on bank liquidity as liquidity is the ease of conversion of assets into cash and once bank cannot meet with their short-term obligation, it disrupts the public confidence which is the major objective that made a depositor trust a bank with their money.

Credit risk management is a method that helps to recognize or reduce the risk associated with non-performing loans of a bank (Makori, 2018). The process of credit management is to ensure adequate measure is taken to protect the objective of banks, which is profitability, safety, and liquidity. Banks as a catalyst for Economic growth holds different obligation to its Stakeholders and as such must meet the requirements of satisfying every credit requirement of depositors and also expectation of profit of the shareholders.

Mian and Santos (2018) opined that intelligent and effective management of credit lines is a key requirement for effective credit management. Furthermore, to minimize the risk of bad debt and over reserving, banks ought to have greater insight into important Factors like, customer financial strength, credit score history and changing payment patterns. The credit management process needs to be understood and followed with adequate checks made on "creditworthiness" of new and existing customers, and 'credit limits' (how much credit is allowed and for how long) must be set. The challenges facing the banking industry in most of the developing countries today is as a result of their inability to properly manage their debt profile resulting from loans and other facilities granted to customers (Al-Eitan & Bani-Khalid, 2019).

According to Bouteille and Coogan-Pushner (2021), credit risk management requires risk identification, measurement, mitigations, monitoring and controlling of credit risk. Banks mitigate credit risk through efficient credit risk management that involves a holistic credit risk analysis of the loans, security arrangement, loan portfolio diversification, pricing, repayment capacity and monitoring (Cavaliere et al, 2021).

It is crucial to know credit facility management is at the core Centre especially , with integral activities such as authorizing credit demands, credit appraisal, acceptance, supervision, and, of course, what to do if non-performing loans goes wrong. Credit management is an active concern on both a small and large scale. The primary objective of credit management is to reduce the financial risk for the lender, which can include the risk of default or non-repayment by the borrower. Financial institutions, such as banks, play a vital role in providing loans to businesses, and this process involves inherent credit risk. The central aim of credit management is to mitigate the rate of default and control facilities to prevent solvency.

Capital adequacy refers to money required by an institution to hold or have in order to facilitate sound and smooth business operations over a period of time (Yenni et al, 2021). According to Nugroho et al (2021), “Capital adequacy in banking business provide protection against sudden financial losses. Capital adequacy refersto the amount of capital (funds) a financial institution, like a bank, must hold in relation to its risk-weighted assets. It is a crucial measure of a bank's financial stability and ability to absorb losses.

The primary purpose of maintaining adequate capital is to ensure that a bank can continue its operations even in adverse economic conditions. “CAR is the capital ratio that shows the bank's ability to provide backup funds if the bank experiences difficulties and the bank management's ability to identify, measure, supervise and control risks that arise which can affect the amount of capital. Banks that have high capital will achieve high profits because they are more careful in choosing sources of financing so that CAR has a positive effect on ROA (Swandewi & Purnawati, 2021).

The assessment of financial performance of banks has been extensively studied over several years. Banks play a crucial role in the financial sector, serving as intermediaries between savers and borrowers. Their financial performance is crucial for stakeholders like regulators, shareholders, and depositors, as it provides insights into their stability, profitability, and ability to meet obligations (Jan et al, 2021). Banking performance involves measuring the results of a bank's policies and operations in both monetary and non-monetary terms. Performance in the financial sector is defined as the ability to operate efficiently, profitably, survive, grow, and react to environmental opportunities and threats.

Various financial ratios indicate a firm's performance and resource management effectively. Profitability ratios assess a business's ability to generate earnings relative to revenue, operating costs, balance sheet assets, or shareholders' equity over time. Accounting-based (Return-on-Assets (ROA) and Return-on-Equity (ROE)) ratios are the most frequently used financial ratios to determine the overall effectiveness of a firm's management. Stakeholders are interested in a bank's profitability, monitoring management efficiency to ensure adequate return for resources (Boachie, 2023).

Credit Risk Theory (Merton model)

This research is based on the theory of credit risk. The Merton model, created by Robert C. Merton in 1974, is a frequently used "structural" credit risk model. The default event is claimed to originate from the development of a firm's assets, which is modelled by a diffusion process with constant parameters. These models are often referred to as "structural models" and are based on factors that are associated with a certain issuer. Analysts and investors use the Merton model to assess a company's ability to fulfil financial commitments, manage its debt, and evaluate the likelihood of credit default.

Merton's Model is a commonly used quantitative method for evaluating credit risk. It utilises principles from option pricing theory to calculate the probability of a borrower's default. This model assesses the likelihood of a company failing to meet its debt commitments by comparing the value of its assets to its liabilities. The concept is predicated on the notion that the value of a company is generated from the value of its assets. The assumption is that the value of a company's assets follows a continuous stochastic trend. It presupposes that the business's assets have a consistent level of volatility and that the firm maintains a constant risk-free rate. Typically, when there is a greater risk involved, the interest rate that borrowers are required to pay on their loan would be higher (Owojori, Akintoye, & Adidu, 2011).

2.2 Empirical Review of Literature

Ogunmakinju (2022) study focuses on credit management effects and the performance of Deposit Money Banks in Nigeria, specifically examining non-performing loans (NPL), profit after tax (PAT), Capital Adequacy ratio (CAR), and loan to deposit ratio (LDR). The results show that NPLs have a significant positive impact on profit after tax, while loan loss provision has a negative effect.

Muhammad (2021) found that credit risk index by loan loss ratio negatively affects financial performance of the sampled banks, while capital employed efficiency, loan loss provision moderated by intellectual capital, capital adequacy ratio, income, and diversification have positive relationships with banks' financial performance. Alhassan and Islam (2021) found that credit risk assessment, debt recovery strategy, and credit risk collection sub-variables have a positive and statistically significant impact on liquidity sub-variables, such as ability to pay, level of bad debt, and cash inflow. Liquidity had a positive and statistically significant effect on profitability.

Osakwe, Ananwude, and Nduka (2019) found that credit risk management has a significant effect on the efficiency of the Nigerian banking industry. Islam (2018) found that profitability is significantly influenced by independent variables, with Non-Performing Loss and loan loss provisions maintaining by commercial banks negatively related to business profitability.

Okonkwo and Nwokeji (2018) found that credit default risk, credit concentration risk, loans to deposit ratio, nonperforming loans, and return on assets have significant effects on the return on assets of Deposit Money Banks in Nigeria. Taiwo et al (2017) found that sound credit management strategies could boost investors and savers' confidence in banks and lead to increased bank profitability.

Nwanna and Oguezue (2017) found that loans and advances and loan loss provision have positive and insignificant effects on profitability. Ahmed and Malik (2015) examined the influence of credit risk management practices on loan performance (LP) using credit terms and policy (CTP), client appraisal, collection policy (CP), and credit risk control (CRC). Uwuigbe, Oyewo, and Uwalomwa (2015) found that while the ratio of non-performing loans and bad debt has a significant negative effect on bank performance, the relationship between secured and unsecured loan ratio and bank performance was not significant.

Alalade et al (2014) found that credit risk management has a significant effect on financial performance of commercial banks, and further recommends maintaining a minimum level of non-performing loans vis-à-vis provision for loans and advances to enhance financial performance through its positive effect on return on equity. Kolapo, Ayeni, and Oke (2012) found that the effect of credit risk on bank performance measured by the Return on Assets of banks is cross-sectional invariant.

3.0 Methodology

This study uses the ex-post facto research design to perform the investigation. The ex-post facto research approach entails analysing historical patterns to establish correlations between economic events. The data may be easily obtained from secondary sources and is devoid of biases that may arise from gathering original data. The research obtained the secondary data from the statistics bulletin of the central bank of Nigeria. The data gathered was analysed using panel least square regression and Granger causality tests

Model Specification

ROA = *f*(CAR, LLP) eq 1

The econometric model of the study which accounts for the constant term, the regression coefficients and the error term is stated as equation 2

$ROA = \alpha_0 + \alpha_1 CAR + \alpha_2 LLP + \mu_t$ eq 2

Where;

α_0 =the intercept or the constant term

α_1, α_2 = are the coefficients of the regression.

ROA = Return on Assets

CAR = Capital Adequacy Ratio

LLP = Loan Loss Provision

μ_t is the error term of the regression.

Analysis of Results and Discussion of Findings

Descriptive Statistics

	ROA	LLP	CAR
Mean	2.933250	19.29038	23.69313
Median	2.780000	11.01500	23.89000
Maximum	5.590000	91.71000	30.16000
Minimum	-0.400000	1.290000	16.76000
Std. Dev.	1.187914	20.69081	3.049142
Skewness	0.034794	1.793894	-0.319272
Kurtosis	3.104648	5.679749	2.691413
Jarque-Bera	0.052646	66.84427	1.676545
Probability	0.974020	0.000000	0.432457
Sum	234.6600	1543.230	1895.450
Sum Sq. Dev.	111.4800	33820.65	734.4843
Observations	80	80	80

Source: *Osakwe (2023)*

The table above reveals that the mean Return on Assets for the selected DMBs is 2.93% and this figure is quite volatile as the standard deviation is 1.18%. The highest ROA recorded by any of the selected Deposit Money Banks is 5.59% while the smallest figure is -0.4%. The average capital adequacy ratio is 23.69% and there is not much variability with a standard deviation of 3.05%. However, loan loss provisions exhibit a very high variability with a standard deviation of 20.69 billion naira, higher than the mean value of 19.29billion naira.

Panel Least Square Regression
Dependent Variable: ROA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LLP	-0.015218	0.004907	-3.101141	0.0027
CAR	-0.010419	0.033468	-0.311314	0.7564
C	3.396174	0.754457	4.501480	0.0000

Effects Specification	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	0.845337	1.0000

Weighted Statistics

R-squared	0.069465	Mean dependent var	2.933250
Adjusted R-squared	0.032734	S.D. dependent var	1.187914
S.E. of regression	1.168309	Sum squared resid	103.7360
F-statistic	1.891155	Durbin-Watson stat	0.865842
Prob(F-statistic)	0.138205		

Unweighted Statistics

R-squared	0.069465	Mean dependent var	2.933250
Sum squared resid	103.7360	Durbin-Watson stat	0.865842

Source: *Authors computation (2023)*

The result of the Panel Least Square Regression shows that the results of Loan loss provision is negative (B = -0.015218) and significantly ($p < 0.05$) related to ROA. This suggests that each unit increase in the provision for loan losses will result in a 0.02% decline in the return on assets of deposit money banks in Nigeria. Similarly, capital adequacy ratio was found to have a negative relationship with ROA and the relationship is insignificant. This indicates that in periods of higher CAR, the return on assets were quite low.

The R-squared value of 0.069465 indicates that only about 7% of the variations in ROA can be explained by the combined variations of non-performing loans ratio, capital adequacy ratio and loan loss provisions. The prob (F-statistics) value is 0.138 which is greater than 0.05,

indicating an overall insignificance of the relationship between credit risk and ROA of DMBs in Nigeria.

Granger Causality Test for LLP and ROA

Pairwise Granger Causality Tests
Date: 12/21/23 Time: 06:40
Sample: 2007 2022
Lags: 5

Null Hypothesis:	Obs	F-Statistic	Prob.
LLP does not Granger Cause ROA	55	2.81051	0.0275
ROA does not Granger Cause LLP		0.42835	0.8264

Source: *Author's computation (2023)*

As shown in table 3.3, with a p-value of 0.0275 which is less than 0.05, it is revealed that Loan Loss Provision does affect ROA. On the other hand, the p-value of 0.8264, which is greater than 0.05 indicate that ROA does not affect LLP. It therefore shows that there is a unidirectional causation flowing from LLP to ROA in DMBs in Nigeria.

Granger Causality Test for CAR and ROA

Pairwise Granger Causality Tests
Date: 12/21/23 Time: 06:43
Sample: 2007 2022
Lags: 5

Null Hypothesis:	Obs	F-Statistic	Prob.
CAR does not Granger Cause ROA	55	2.70432	0.0324
ROA does not Granger Cause CAR		2.26815	0.0641

Source: *Authors computation (2023)*

As shown in table 3.4, with a p-value of 0.0324 which is less than 0.05, it is revealed that capital adequacy ratio does affect ROA. On the other hand, the p-value of 0.0641, which is greater than 0.05 indicate that ROA does not affect capital adequacy ratio. It therefore shows that there is a unidirectional causation flowing from capital adequacy ratio to ROA in DMBs in Nigeria

Hypothesis One:
$H_{0\,1}$: Loan loss provision has no effect on return on assets of deposit money banks.

As shown in table 3.3, a p-value of 0.0275 is less than 0.05. Therefore, the null hypothesis is rejected in favor of the alternate hypothesis. This indicates that Loan loss provision has no effect on return on assets of deposit money banks in Nigeria.

Hypothesis Two:
$H_{0\,2}$: Capital adequacy ratio has no effect on return on assets of deposit money banks.

As shown in table 3.4, a p-value of 0.0324 is less than 0.05. Therefore, the null hypothesis is rejected and the alternate hypothesis is confirmed. This indicates that Capital adequacy ratio has no effect on return on assets of deposit money banks in Nigeria.

Discussion of the Findings
This study examined the effect of credit management on the financial performance of deposit money banks in Nigeria using data collected from selected DMBs. Credit management was decomposed into capital adequacy ratio and loan loss provision while financial performance of DMBs was measured in terms of return on assets (ROA). The researcher subjected the data to statistical examinations using the panel least square regression and the Granger causality test and the findings revealed that the profitability of DMBs tend to increase as capital adequacy ratio reduces, however this association is to an insignificant extent. Interestingly, based on the Granger Causality Test results, the ROA of deposit money banks is significantly affected by capital adequacy ratio. The concept of capital adequacy is a restrictive concept that limits the amount of loans a bank can issue or the amount of liabilities it can acquire. This restriction reduces restrains the banks from possessing risky assets that have high profitability. This finding supports the findings of Okonkwo and Nwokeji (2018) which indicates that capital reserves and buffers had effects on the profitability of the banks in Nigeria.

The findings further revealed that loan loss provision was negatively and significantly related to return on assets of deposit money banks in Nigeria. This indicates that, in periods when the bank increased its loan loss provision, the banks made less profit. This finding confirms our expectation. The result of the Granger Causality test further revealed that loan loss provision has effect on the return on assets of deposit money banks in Nigeria. Based on this result, it can be seen that provisions for lost loans directly depletes the banks' returns on assets. This finding is validated by the findings in the study of Ghaith and Tareq (2019) which revealed that credit risks negatively and significantly affected the return on assets of deposit money banks. Fakir Tajul Islam (2018) also found that loan loss provision maintained by banks has negative and significant impact on the profitability of banks in Nigeria.

Conclusion
Based on the findings of the study, the study concludes that credit management has effect on the financial performance of deposit money banks in Nigeria. This effect comes in the form of higher return on assets when the provisions for loan losses and capital adequacy ratios are reduced in deposit money banks in Nigeria. The implication of these findings is that the rising risk of credit default due to adverse macroeconomic conditions will see bank profits decline significantly.

Recommendations
1. Banks should try to keep capital adequacy ratio to the barest acceptable safe minimum. This will ensure optimal investment of available resources towards the acquisition of profitable assets
2. Banks should carry out its due diligence and adopt more measures to reduce credit defaults so as to avoid piling up funds for provisions for loan losses which directly depletes profitability.

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