EFFECT OF CREDIT RISK MANAGEMENT ON THE PROFITABILITY OF NIGERIAN BANKS

Chikwem Blessing Ebere[1*], Nathaniel Chinedum Nwezeaku (Prof) And Chris-Ejiogu[2], Uzoamaka Gloria[3]

[1*,2,3]Department of Financial Management Technology, Federal University of Technology Owerri, Imo State, Nigeria

Corrsponding Author:

Abstract

This study investigated the effect of credit risk management on the profitability of Nigerian banks from 2006-2020. Three banks were sampled (First Bank Nig Plc (FBN), Zenith Bank Plc (ZBN) and First City Monument Bank Plc (FCMB)). The study specifically determined the effect of non-performing loan to total loan ratio (NPR), non-performing loan to total deposit ratio (NDR), capital adequacy ratio (CAR), leverage ratio (LEV) and firm size (FSZ) on profitability of banks measured by Return On Assets (ROA) and Return On Equity (ROE). The study utilized secondary data sourced from annual reports and accounts of the selected banks for the period of the research work. The study employed multiple regression of OLS (Ordinary Least Square) and estimation obtained from E-views version 9 to determine the statistical relationship between credit risk management and profitability of banks in Nigeria. The finding revealed a positive insignificant relationship between NLR and profitability of banks, CAR and FSZ showed a negative insignificant relationship with profitability, LEV revealed a positive significant relationship in only ROE of Zenith Bank and First City Monument Bank while NDR revealed a negative insignificant relationship in First Bank and Zenith Bank only. Based on the above findings, this study recommended that the Central Bank of Nigeria, for policy purposes should frequently assess the lending habit of banks in Nigeria.

Keywords: *Credit Risks, Risk management, Nonperforming loan, Leverage ratio, Capital Adequacy Ratio, Nonperforming loan to deposit ratio, Commercial Banks.*

IINTRODUCTION

In every economy world over, bank is one of the financial institutions that aids in regulating the financial behaviour of individuals, private and public sectors of the economy. Banks play major roles in receiving money in the form of deposit from the customers (surplus unit) and channeling it to the borrowers (scarce unit) thereby helping in stabilization between the surplus unit and the scarce unit of the economy. Apart from receiving deposits and channeling it appropriately, banks also issue loans and advances to their customers in order to in-turn, generate more profit through the interest payable by the customers that received the loans, which leads to maximization of shareholders wealth through the income generated thereafter (Campbell, 2007). That is where a lot of banks in Nigeria face risks, risks ranging from customers failing to repay borrowed money at the agreed time and other risk factors that has led to so many banks going on distress and sometimes closure in the Nigerian banking history.

Credit risk in Nigerian banking system can occur from two major sources, the bank management (that is, lack of thorough investigation of customers requesting for loan) and the customer (that is, when customers have hidden agenda that is unknown to the bank, on the credit facility that he/she sought for). These combined activities of banks' management and customers lead to non-payment of both the principal sum and interest as and when due (Kajola, Adedeji, Olabisi, and Babatolu, 2018). According to Appa, (1996), risk management is the human activity which involves recognition of risk, assessment of risk, developing strategies to manage the risk and mitigation of the risk using managerial resources. Therefore, credit risk is the risk of loss to debtor's non–payment of a loan or other line of credit (Campbell, 2007). Since one of the major revenue bases of banks is the interests generated through loan servicing, it is therefore worthy to note that banks cannot run away from credit risks. However, management of the credit risk by Nigerian banks is very important. Apart from the importance, it also forms integral part of loan process. Therefore, this research work x-rays the effect which proper management of credit risk would have on the overall profitability of Nigerian banks. The profitability of banks, which is measured by Return On Equity (ROE) and Return On Asset (ROA) was compared with the non–performing loan ratio, non-performing loan to deposit ratio, capital adequacy ratio, leverage ratio and firm size of banks in Nigeria, this was to ascertain if there was any relationship that exists.

Risk management is considered by researchers as a yardstick for determining failure or success of any financial institution (Onyefulu, Okoye and Orjinta, 2019). According to Hou and Dickinson (2007), many researches on the causes of bank failures found that asset quality is a statistically significant predictor of insolvency, and that failing banking institutions always have high level of Non-performing loans as a result of improper management of risks associated with loan issuance prior to the failure. It is obvious that the aim of every business is to maximize shareholders wealth and acquire substantial profit either for expansion or to undertake new product development. However, this study tries to solve the problem associated with bank managers' inability to manage risks associated with issuance of loan to their customers and the effects the risks have on the profitability of commercial banks in Nigeria. The main objective of this project research work is to have clearer picture of the effect credit risk management has on the profitability of commercial banks in Nigeria. However, this study empirically explored the following objectives: the relationship that exist between non-performing loan ratio and profitability of banks in Nigeria, the relationship between non-performing loan to deposit ratio and profitability of banks in Nigeria, the relationship between capital adequacy ratio and profitability of Nigerian banks, the relationship between leverage ratio and profitability of Nigerian banks and the relationship between Firm Size and profitability of Nigerian banks. The hypotheses of the study are in line with the specific objectives of the study.

II LITERATURE REVIEW
2.1 Conceptual Framework
Credit risk
Credit risk is one of the current and prospective risks to earnings or capital arising from the failure of the borrower to meet the terms and conditions of any contract reached with the bank during the processing and advancement of loan facilities to the borrower (Kargi, 2011). Risk to banks means the perceived uncertainty connected with some events. The intermediation function of banks naturally exposes them to credit risk: credit risk is by far the most significant risk faced by banks and the success of their business depends on accurate measurement and efficient management of credit risk more than any other risks (Gieseche, 2004). Credit risk arises any time bank funds are extended, committed, invested, or otherwise exposed to a borrower (customer) through actual or implied contractual agreements. Therefore, risks are determined by factors that not directly related to the bank such as general unemployment levels, change in socio-economic conditions, debtors' attitudes and political issues. In this study, the variables of credit risk are non-performing loan, loan to deposit ratio, capital adequacy ratio, leverage ratio and firm size.

Profitability of Nigerian
In view of the importance of profitability on firm growth and survival, a substantial theoretical and empirical body of knowledge examines the issue. . The major theoretical developments in profitability analysis include the establishment of a link between market structure and profitability. In this earlier stage, inter-industry differences in profitability was explained in terms of a single element of market structure i.e. concentration. However, over the years, the literature has identified several other factors as determinants of profitability. These factors include firm growth, capital intensity, advertisement intensity, age of firm, business cycle trends among others. Analysis of the profit profile of Nigerian firms is important because it provides the basis for judging whether business firms run efficiently or otherwise. The literature

asserts that profit is the primary measure of a firm's efficiency and success (Barthwal, 2000). Secondly, a deeper understanding of the trends and patterns of firm's profitability assist managers in evolving policies to enhance the profit level of their organisations. In addition, knowledge of the relationship between leverage and profitability helps to show how effectively firms are able to debt finance.

Credit Risk Management Strategies in Nigerian Banks
The credit risk management strategies in Nigerian banks are measures employed by banks in Nigeria to avoid or minimize the adverse effect of credit risks. A sound credit risk management framework is crucial for banks. This is to enhance profitability and guarantee survival. According to Lindergren (1987), the key principles in credit risk management process are sequenced as follows; establishment of a clear structure, allocation of responsibility, processes have to be prioritized and disciplined, responsibilities should be clearly communicated and accountability assigned.

Theoretical Framework
Liquidity Theory of Credit
This theory, first suggested by Emery (1984), proposes that credit rationed firms use more trade credit than those with normal access to financial institutions. The central point of this idea is that when a firm is financially constrained the offer of trade credit can make up for the reduction of the credit offer from financial institutions. In accordance with this view, those firms presenting good liquidity or better access to capital markets can finance those that are credit rationed. Several approaches have tried to obtain empirical evidence in order to support this assumption. For example, Nielsen (2002), using small firms as a proxy for credit rationed firms, finds that when there is a monetary contraction, small firms react by increasing the amount of trade credit accepted. As financially unconstrained firms are less likely to demand trade credit and more prone to offer it, a negative relation between a buyer's access to other sources of financing and trade credit use is expected. Petersen and Rajan (1997) obtained evidence supporting this negative relation (Lillian, 2013).

Asymmetric Information Theory
Information asymmetry in a financial market arises when a borrower who obtains loan facility from a bank has better information about the expected risks and returns associated with the investment project for which the fund was sought (Edwards & Turnbull, 1994). The lender may not have sufficient information about the borrower. This theory submits that banks face twin problems of moral hazard (monitoring borrower's behaviour) and adverse selection (making errors in the lending decision) whenever customers' loan requests are being processed.

The Credit Risk Theory
Credit risk according to Anderson and Salas, & 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 the interest rate will be, that the debtors will be asked to pay on the debt (Owojori, Akintoye & Adidu, (2011).

Empirical Review
Previous empirical findings on the effect of credit risk management on banks profitability in the Nigerian banking sector provides varying evidence of effects credit risk management tools have on the profitability of banks.

Festus and Samson (2020), investigated the effect of Credit Risk Management on the Profitability of Selected Deposit Money Banks in Nigeria from 2008 to 2017. Specifically, the study analyzed the impact of non-performance loans on return on assets as well as the impact of provision for doubtful debts on return on assets of the selected deposit money banks in Nigeria. The study focused on 10 deposit money banks randomly selected from 21deposit money banks listed on the Nigeria stock exchange. From the findings, it was discovered that risk management measured in terms of non-performing loans exert insignificant negative impact on profitability of deposit money banks, while, provision for doubtful debts had positive and significant effect on the profitability of deposit money banks in Nigeria.

Hudu, Abdu, Ja'afaru, Murtala and Sulaiman (2019) analyzed the effect of credit risk management on the financial performance of quoted deposit money banks in Nigeria for a 9-year period (2010-2018). Based on their analysis on the variables (Credit risk management was proxied by Loan to deposit ratio, credit risk, capital adequacy risk, and solvency risk while financial performance was proxied by return on assets). The study revealed that credit risk management has little effect on the financial performance of deposit money banks in Nigeria as regards return on assets (ROA).

Okere, Isiaka and Ogunlowore (2018) studied the impact risk management has on the financial performance of 10 Nigerian deposit money banks. Results from the panel regression showed a positive and significant relationship between risk management and financial performance of the sampled banks.

Harcourt (2017) analyzed the impact of credit risk management on the performance of deposit money banks in Nigeria using over parameterized and parsimonious error correction model and Granger causality for the period 1989 to 2014. Findings suggested a significant relationship between credit management parameters and the performance of deposit money banks.

III METHODOLOGY

Research Design
This research study which is empirical in nature, adopted an ex-post facto research design where past data that are in the form of secondary data were used. This research seeks to establish factors associated with certain occurrences, outcomes, conditions or types of behaviour.

Source of Data
Data for the period of this study (2006-2020), were mainly obtained from a secondary source, published annual reports and accounts of the selected commercial banks as sampled for this study.

Population of the Study
Burns and Grove (2003) stated that population includes all elements that meet certain criteria for inclusion in a study. Therefore, the target population for this study is all the 22 commercial banks in Nigeria as listed by the Central Bank of Nigeria published on October 31st, 2020.

Sample Design
The sample size is three (3) out of the twenty two (22) commercial banks in Nigeria. They were selected as a sample through judgmental sampling technique guided by the availability of relevant data used for the study. The three banks are:
1. First Bank Nig Plc
2. Zenith Bank Plc. and
3. First City Monument Bank Plc

Technique of Data Analysis
Data analysis aims at fulfilling the research objectives and provide answers to the research questions. For the collected data to be understood by the common man easily, it needs to be analyzed. This research work used qualitative and quantitative techniques in analyzing the data. After collecting financial statements of the 3 sampled banks, the data assembled therein is classified and tabulated to analyze quantitative data using OLS (Ordinary Least Square) method. Tables were used for further representation for easy understanding and analysis. The collected data were thoroughly examined and checked for completeness and comprehensibility. The data was then summarized and tabulated. The findings from the analyzed data were used to compare them with the financial information found from annual financial reports from each of the three commercial banks. Finally, after the comparison from all findings the conclusion was made by depicting the effect of Credit Risk Management on the Profitability of Commercial Banks in Nigeria.

Analytical Tool
The multiple regression of OLS (Ordinary Least Square) estimation obtained from E-views 9 was used for the purpose of the analysis. The data were obtained from annual reports and audited financial accounts of the selected commercial banks in Nigeria from 2006 to 2020. The stationary of the time series is tested using the Augmented Dickey Fuller (ADF) Unit Root Test.

Specification of Models
The data of this research work were analyzed using the multivariate multiple regression analysis which could be termed to be the statistical technique used to find relationship that exists between variables using the formula of Kajola, S. O. et al (2018).
The formula is:

$$Y_1 = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e \qquad 3.1$$
$$Y_2 = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e \qquad 3.2$$

Where: Dependent Variables are:

ROA (Y_1) = Return on Assets, measured as $\dfrac{\text{Profit after tax}}{\text{Total assets}}$

ROE (Y_2) = Return on Equity, measured as $\dfrac{\text{Profit after tax}}{\text{Number of shares in issue}}$

Independent Variables are:

NLR (X_1) = Non-Performing Loan to Total Loan Ratio, measured as $\dfrac{\text{Non−performing loans}}{\text{The total amount of loans and advances}}$

NDR (X_2) = Non-Performing Loan to Total Deposit Ratio, measured as $\dfrac{\text{Non−performing loans}}{\text{Total deposits}}$

CAR (X_3) = Capital Adequacy Ratio, measured as $\dfrac{\text{Total Capital}}{\text{Risk Weighted Asset}}$

Control Measures are:

LEV (X_4) = Leverage Ratio, measured as $\frac{Long-term\ debts}{Total\ assets}$

FSZ (X_5) Firm Size, measured as the Log of total assets

β_0 = Constant or Intercept

β_{1-5} =   The Coefficients of parameters

e =   Error Term

A Priori **Expectation:**

The a priori expectation is such that mathematically, β_1, β_2 and $\beta_4 < 0$ while β_3 and $\beta_5 > 0$. That is, the assumption here is that a negative relationship is expected between the explanatory variables $\beta_1 NLR$, $\beta_2 NDR$ and $\beta_4 LEV$ while a positive relationship is expected between the explanatory variables $\beta_3 CAR$, and $\beta_5 FSZ$ and the two-dependent variable (ROA, ROE).

IV RESULTS AND DISCUSSION

This part of the work contains the data collected from the Nigerian Stock Exchange Factbook and various published annual reports and statements of accounts of the three (3) sampled banks.

Unit Root Test

Table 4.1: Summary of Unit Root Test Results for First Bank Nigeria Plc.

Variables	ADF value	Critical value	Order of Integration
ROA	-4.712248	1% = -4.420595 5% = -3.259808 10% = -2.771129	Stationary at second difference I (2)
ROE	-3.343791	1% = -2.792154 5% = -1.977738 10% = -1.602074	Stationary at first difference I (1)
NLR	-4.903088	1% = -4.886426 5% = -3.828975 10% = -3.362984	Stationary at level I (0)
NDR	-3.706268	1% = -2.754993 5% = -1.970978 10% = -1.603693	Stationary at first difference I (1)
CAR	-4.553029	1% = -4.297073 5% = -3.212696 10% = -2.747676	Stationary at first difference I (1)
LEV	-10.27488	1% = -5.124875 5% = -3.933364 10% = -3.420030	Stationary at level I (0)
FSZ	-3.483537	1% = -2.816740 5% = -1.982344 10% = -1.601144	Stationary at second difference I (2)

Source: Extracts from Result of Stationarity Test

The unit root test was carried out using the Augmented Dickey Fuller test in order to determine whether the data sets of First Bank Nigeria Plc are stationary and the order of integration. From table 4.1 above, the result of stationarity test using Augmented Dickey-Fuller Unit Root test showed that NLR and LEV were stationary at level, ROE, NDR and CAR were stationary at first difference while ROA and FSZ were stationary at second difference. This is so because the Augmented Dickey-Fuller test statistic is greater than the Mackinnon critical value at 5% level of significance.

Table 4.2: Summary of Unit Root Test Results for Zenith Bank Nigeria Plc.

Variables	ADF value	Critical value	Order of Integration
ROA	-4.859040	1% = -4.057910 5% = -3.119910 10% = -2.701103	Stationary at first difference I (1)
ROE	-4.583434	1% = -2.754993 5% = -1.970978 10% = -1.603693	Stationary at first difference I (1)
NLR	-7.834532	1% = -5.521860 5% = -4.107833 10% = -3.515047	Stationary at second difference I (2)
NDR	-3.173662	1% = -2.754993 5% = -1.970978 10% = -1.603693	Stationary at first difference I (1)
CAR	-3.433973	1% = -2.754993 5% = -1.970978 10% = -1.603693	Stationary at first difference I (1)
LEV	-3.193213	1% = -2.771926 5% = -1.974028 10% = -1.602922	Stationary at first difference I (1)
FSZ	-4.111272	1% = -4.057910 5% = -3.119910 10% = -2.701103	Stationary at first difference I (1)

Source: Extracts from Result of Stationarity Test (Appendix)

The unit root test was carried out using the Augmented Dickey Fuller test in order to determine whether the data sets of Zenith Bank Nigeria Plc are stationary and the order of integration. From table 4.2 above, the result of stationarity test using Augmented Dickey-Fuller Unit Root test showed that none of the variables were stationary at level, ROA, ROE,

NDR, CAR, LEV and FSZ were stationary at first difference while only NLR was stationary at second difference. This is so because the Augmented Dickey-Fuller test statistic is greater than the Mackinnon critical value at 5% level of significance. (See Appendix).

Table 4.3: Summary of Unit Root Test Results for FCMB Plc.
Source: Extracts from Result of Stationarity Test
The unit root test was carried out using the Augmented

Variables	ADF value	Critical value	Order of Integration
ROA	-4.143363	1% = -4.057910 5% = -3.119910 10% = -2.701103	Stationary at first difference I(1)
ROE	-4.850630	1% = -4.200056 5% = -3.175352 10% = -2.728985	Stationary at level I(0)
NLR	-2.748366	1% = -2.740613 5% = -1.968430 10% = -1.604392	Stationary at level I(0)
NDR	-17.78511	1% = -4.057910 5% = -3.119910 10% =-2.701103	Stationary at level I(0)
CAR	-8.360758	1% = -5.124875 5% = -3.933364 10% = -3.420030	Stationary at level I(0)
LEV	-10.58944	1% = -5.124875 5% = -3.933364 10% = -3.420030	Stationary at level I(0)
FSZ	-6.419634	1% = -5.521860 5% =-4.107833 10% = -3.515047	Stationary at second difference I(2)

Dickey Fuller test in order to determine whether the data sets of FCMB Plc are stationary and the order of integration. From table 4.3 above, the result of stationarity test using Augmented Dickey-Fuller Unit Root test showed that ROE, NLR, NDR, CAR and LEV were stationary at level, ROA was stationary at first difference while only FSZ was stationary at second difference. This is so because the Augmented Dickey-Fuller test statistic is greater than the Mackinnon critical value at 5% level of significance. (See Appendix).

Presentation and Interpretation of Regression Result
In this study, mathematical relationships between the variables are established. Available data on the selected Commercial Banks' Credit Risk Management, Return on Assets (ROA) and Return on Equities (ROE) were collected and used for the purpose of this analysis. Six (6) multiple regression models were formed to capture the assumed relationship between these variables.

The effect of Credit Risk Variables on Return on Asset of First Bank Nigeria Plc.
Table 4.4: Results of the Model Statistics on the effect Credit Risk Variables on ROA of First Bank Nigeria Plc.
Dependent Variable: ROA
Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.656927	19.35802	0.447201	0.6653
NLR	1.311228	2.973061	0.441036	0.6696
NDR	-5.057818	5.126157	-0.986669	0.3496
CAR	0.006296	0.059111	0.106512	0.9175
LEV	5.082813	13.83321	0.367436	0.7218
FSZ	-1.782285	1.225497	-1.454337	0.1798
R-squared	0.666624	Mean dependent var		1.758000
Adjusted R-squared	0.481415	S.D. dependent var		1.241596
F-statistic	3.599310	Durbin-Watson stat		2.009564
Prob(F-statistic)	0.045849			

The estimated regression result is presented thus;
ROA = 8.657+1.311*NLR-5.058*NDR+0.006*CAR+5.083*LEV-1.782*FSZ 4.1

As the result shows that NDR and FSZ had negative relationship with the dependent variable, Return on Asset (ROA) of First Bank Nigeria Plc. Their coefficients of -5.058 and -1.782 respectively indicate that Return on Asset (ROA) of First Bank Nigeria Plc will decrease by 5.058 and 1.782 units respectively if NDR and FSZ increase by 1 unit, ceteris

paribus, However, NLR, CAR and LEV had positive relationship with the dependent variable, Return on Asset (ROA) of First Bank Nigeria Plc. The coefficients of 1.311,0.006 and 5.083 respectively indicate that Return on Asset (ROA) of First Bank Nigeria Plc will increase by 1.311,0.006 and 5.083 units respectively if NLR, CAR and LEV increase by 1 unit, ceteris paribus. The coefficients of these variables (NDR and CAR) were correctly signed in support of the *a priori* expectation while the coefficients of both (NLR, LEV and FSZ) were wrongly signed in contrary to the a priori expectation.

The effect of Credit Risk Variables on Return on Equity of First Bank Nigeria Plc.
Table 4.5: Results of the Model Statistics on the effect Credit Risk Variables on ROE of First Bank Nigeria Plc.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.012856	98.06283	0.081711	0.9367
NLR	-8.619582	15.06077	-0.572320	0.5811
NDR	-42.16563	25.96781	-1.623765	0.1389
CAR	-0.411879	0.299443	-1.375486	0.2022
LEV	-6.299545	70.07553	-0.089897	0.9303
FSZ	2.923412	6.208056	0.470906	0.6489
R-squared	0.554614	Mean dependent var		6.757333
Adjusted R-squared	0.307177	S.D. dependent var		5.441546
F-statistic	2.241434	Durbin-Watson stat		2.066566
Prob(F-statistic)	0.138267			

The estimated regression result is presented thus;
ROE = 8.013-8.620*NLR-42.166*NDR-0.412*CAR-6.300*LEV+2.923*FSZ 4.2

As the result shows that NLR, NDR, CAR and LEV had negative relationship with the dependent variable, Return on Equity (ROE) of First Bank Nigeria Plc. Their coefficients of -8.620, -42.166, -0.412 and -6.300 respectively indicate that Return on Equity (ROE) of First Bank Nigeria Plc will decrease by 8.620, 42.166, 0.412 and -6.300 units respectively if NLR, NDR, CAR and LEV increase by 1 unit, ceteris paribus, However, FSZ had a positive relationship with the dependent variable, Return on Equity (ROE) of First Bank Nigeria Plc. The coefficients of 2.923 indicates that Return on Equity (ROE) of First Bank Nigeria Plc will increase by 2.923 unit if FSZ increase by 1 unit, ceteris paribus. The coefficients of these variables (NLR, NDR, LEV and FSZ) were correctly signed in support of the a priori expectation while the coefficient of CAR was wrongly signed in contrary to the a priori expectation.

The effect of Credit Risk Variables on Return on Asset of Zenith Bank Nigeria Plc.
Table 4.6: Results of the Model Statistics on the effect Credit Risk Variables on ROA of Zenith Bank Nigeria Plc.
Dependent Variable: ROA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.370638	8.105824	-0.045725	0.9645
NLR	42.94244	20.95379	2.049387	0.0707
NDR	-87.32369	44.05081	-1.982340	0.0788
CAR	-0.007265	0.056752	-0.128020	0.9009
LEV	5.891867	7.844014	0.751129	0.4718
FSZ	-0.240762	0.283314	-0.849808	0.4175
R-squared	0.376039	Mean dependent var		2.562000
Adjusted R-squared	0.029394	S.D. dependent var		0.621739
F-statistic	1.084797	Durbin-Watson stat		1.904871
Prob(F-statistic)	0.430034			

The estimated regression result is presented thus;
ROA = -0.371+42.942*NLR-87.324*NDR-0.007*CAR+5.892*LEV-0.241*FSZ 4.3

As the result shows that NDR, CAR and FSZ had negative relationship with the dependent variable, Return on Asset (ROA) of Zenith Bank Nigeria Plc. Their coefficients of -87.324, -0.007 and -0.241 respectively indicate that Return on Asset (ROA) of Zenith Bank Nigeria Plc will decrease by 87.324, 0.007 and 0.241 units respectively if NDR, CAR and FSZ increase by 1 unit, ceteris paribus, However, NLR and LEV had positive relationship with the dependent variable, Return on Asset (ROA) of Zenith Bank Nigeria Plc. The coefficients of 42.942 and 5.892 respectively indicate that Return on Asset (ROA) of Zenith Bank Nigeria Plc will increase by 42.942 and 5.892 units respectively if NLR and

LEV increase by 1 unit, ceteris paribus. The coefficient of NDR was correctly signed in support of the a priori expectation while the coefficients NLR, CAR, LEV and FSZ were wrongly signed in contrary to the a priori expectation.

The effect of Credit Risk Variables on Return on Equity of Zenith Bank Nigeria Plc.
Table 4.7: Results of the Model Statistics on the effect Credit Risk Variables on ROE of Zenith Bank Nigeria Plc.
Dependent Variable: ROE
Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-100.2431	62.60345	-1.601238	0.1438
NLR	243.0476	161.8318	1.501854	0.1674
NDR	-457.4342	340.2162	-1.344540	0.2117
CAR	-0.149819	0.438314	-0.341807	0.7403
LEV	159.3878	60.58142	2.630968	0.0273
FSZ	-1.898183	2.188107	-0.867500	0.4082
R-squared	0.640307	Mean dependent var		17.50467
Adjusted R-squared	0.440477	S.D. dependent var		6.324440
F-statistic	3.204265	Durbin-Watson stat		2.194162
Prob(F-statistic)	0.061720			

The estimated regression result is presented thus;
ROE=-100.243+243.048*NLR-457.434*NDR-0.150*CAR+158.388*LEV-1.898*FSZ .. 4.4

As the result shows that NDR, CAR and FSZ had negative relationship with the dependent variable, Return on Equity (ROE) of Zenith Bank Nigeria Plc. Their coefficients of -457.434, -0.150 and -1.898 respectively indicate that Return on Equity (ROE) of Zenith Bank Nigeria Plc will decrease by 457.434, 0.150 and 1.898 units respectively if NDR, CAR and FSZ increase by 1 unit, ceteris paribus, However, NLR and LEV had positive relationship with the dependent variable, Return on Equity (ROE) of Zenith Bank Nigeria Plc. The coefficients of 243.048 and 158.388 indicate that Return on Equity (ROE) of Zenith Bank Nigeria Plc will increase by 243.048 and 158.388 units respectively if NLR and LEV increase by 1 unit, ceteris paribus. The coefficient NDR was correctly signed in support of the a priori expectation while the coefficients NLR, CAR, LEV and FSZ were wrongly signed in contrary to the a priori expectation.

The effect of Credit Risk Variables on Return on Asset of First City Monument Bank (FCMB) Plc.
Table 4.8: Results of the Model Statistics on the effect Credit Risk Variables on ROA of First City Monument Bank (FCMB) Plc.
Dependent Variable: ROA
Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.14421	13.57182	1.115857	0.2934
NLR	3.194597	2.992608	1.067496	0.3135
NDR	-10.62635	2.865592	-3.708255	0.0049
CAR	-0.030114	0.043659	-0.689767	0.5077
LEV	4.018007	5.576302	0.720550	0.4895
FSZ	-1.835456	1.046082	-1.754600	0.1132
R-squared	0.653114	Mean dependent var		1.328000
Adjusted R-squared	0.460399	S.D. dependent var		0.670098
F-statistic	3.389022	Durbin-Watson stat		2.925469
Prob(F-statistic)	0.053590			

The estimated regression result is presented thus;
ROA = 15.144 + 3.195*NLR-10.626*NDR-0.030*CAR+4.018*LEV-1.835*FSZ 4.5

As the result shows that NDR, CAR and FSZ had negative relationship with the dependent variable, Return on Asset (ROA) of FCMB Plc. Their coefficients of -10.626, -0.030 and -1.835 respectively indicate that Return on Asset (ROA) of FCMB will decrease by 10.626, 0.030 and 1.835 units respectively if NDR, CAR and FSZ increase by 1 unit, ceteris paribus, However, NLR and LEV had positive relationship with the dependent variable, Return on Asset (ROA) of FCMB Plc. The coefficients of 3.195 and 4.018 respectively indicate that Return on Asset (ROA) of FCMB Plc will increase by 3.195 and 4.018 units respectively if NLR and LEV increase by 1 unit, ceteris paribus. The coefficient NDR was correctly signed in support of the a priori expectation while the coefficients NLR, CAR, LEV and FSZ were wrongly signed in contrary to the a priori expectation.

The effect of Credit Risk Variables on Return on Equity of First City Monument Bank (FCMB) Plc.
Table 4.9: Results of the Model Statistics on the effect Credit Risk Variables on ROE of First City Monument Bank (FCMB) Plc.
Dependent Variable: ROE
Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.549233	87.56899	0.109048	0.9156
NLR	17.28176	19.30911	0.895005	0.3941
NDR	-46.91487	18.48956	-2.537370	0.0318
CAR	0.114294	0.281699	0.405730	0.6944
LEV	94.46893	35.97979	2.625611	0.0276
FSZ	-9.180969	6.749600	-1.360224	0.2069
R-squared	0.723543	Mean dependent var		8.577333
Adjusted R-squared	0.569956	S.D. dependent var		4.843181
F-statistic	4.710969	Durbin-Watson stat		2.993093
Prob(F-statistic)	0.021656			

The estimated regression result is presented thus;
ROE = 9.549+17.282*NLR-46.915*NDR+0.114*CAR+94.469*LEV-9.181*FSZ 4.6

As the result shows that NDR and FSZ had negative relationship with the dependent variable, Return on Equity (ROE) of FCMB Plc. Their coefficients of
-46.915 and -9.181 respectively indicate that Return on Equity (ROE) of FCMB Plc will decrease by 46.915 and 9.181 units respectively if NDR and FSZ increase by 1 unit, ceteris paribus, However, NLR, CAR and LEV had positive relationship with the dependent variable, Return on Equity (ROE) of FCMB Plc. The coefficients of 17.282, 0.114 and 94.469 indicate that Return on Equity (ROE) of FCMB Plc will increase by 17.282, 0.114 and 94.469   increase by 1 unit, ceteris paribus. The coefficient NDR and CAR were correctly signed in support of the a priori expectation while the coefficients NLR, LEV and FSZ were wrongly signed in contrary to the a priori expectation.

Presentation and Interpretation of Statistical Criteria
The statistical tests to evaluate are the student t-test, F-test and R^2 (the coefficient of determination).

Table 4.10: Result of t-test, F-test and R^2

Global Statistics	Dependent Variables					
	Models of First Bank Nigeria Plc		Models of Zenith Bank Nigeria Plc		Models of FCMB Plc	
	ROA	ROE	ROA	ROE	ROA	ROE
R-square	0.666624	0.554614	0.376039	0.640307	0.653114	0.723543
Adjusted R-square	0.481415	0.307177	0.029394	0.440477	0.460399	0.569956
F-statistics	3.599310	2.241434	1.084797	3.204265	3.389022	4.710969
Prob(F-statistic)	0.045849	0.138267	0.430034	0.061720	0.053590	0.021656

Source: Regression Results (tables 4.4, 4.5, 4.6, 4.7, 4.8 and 4.9)

F-test
This test is used to determine the overall significance of the model. It follows the f-distribution with degree of freedoms k (v_1) and n-k-1 (v_2).
Where k = Number of independent variables, and n = Number of Observations.
Hypothesis to be tested is
H_0: $\beta_1 = 0$ (the model is statistically insignificant)
H_A: $\beta_1 \neq 0$ (the model is statistically significant)
At α = 5%
Decision Rule:
Reject H_0 if $F_{cal} > F_{0.05 (v1, v2)}$, otherwise do not reject.
The overall model is measured by the F-statistic test. Considering the result of the six models (ROA of FBN, ROE of FBN, ROA of ZBN, ROE of ZBN, ROA of FCMB and ROE of FCMB) in table 4.10, the F-Statistic values of 3.60,2.24, 1.08, 3.20, 3.39 and 4.71 at ρ-values of 0.046, 0.138, 0.430,0.062,0.054 and 0.022 respectively indicate that only two models (ROA of FBN and ROE of FCMB) are statistically significant because the ρ-values are less than the 5% (0.05) level of significance. Hence, H_0 is rejected and it can be concluded that the overall models (ROA of FBN and ROE of FCMB) of the included explanatory variables are statistically significant and therefore can be used in explaining variations in their dependent variables.

Coefficient of Determination (R^2)

Considering the result in table 4.10 above, under ROA of FBN model, the R^2 value of 0.667 indicates that the power of our model in explaining variations in relation to dependent variable, ROA is moderately strong. It also shows that the level of correlation is strong. In the same vein, the R^2 value of 0.667 implies that the variables included in the model explained about 66.7% of the changes in the dependent variable, ROA while 33.3% is explained by other factors not included in the model. However, the adjusted coefficient of determination (Adjusted R^2), 0.481 indicates that the exogenous variables in the model explained about 48.1% of the total variation or changes in ROA of FBN while the remaining 51.9% is accounted for by other factors unexplained by the model after talking cognizance of the degrees of freedom.

In addition, under ROE of FBN model (table 4.10), the R^2 value of 0.555 indicates that the power of the model in explaining variations in relation to dependent variable, ROE is moderately strong. It also shows that the level of correlation is not very strong. In the same vein, the R^2 value of 0.555 implies that the variables included in the model explained about 55.5% of the changes in the dependent variable, ROE of FBN while 44.5% is explained by other factors not included in the model. However, the adjusted coefficient of determination (Adjusted R^2), 0.307 indicates that the exogenous variables in the model explained about 30.7% of the total variation or changes in ROE of FBN while the remaining 69.3% is accounted for by other factors unexplained by the model after talking cognizance of the degrees of freedom.

Also, the result in table 4.10, under ROA of ZBN model, the R^2 value of 0.376 indicates that the power of our model in explaining variations in relation to dependent variable, ROA is very weak. It also shows that the level of correlation is also very weak. In the same vein, the R^2 value of 0.376 implies that the variables included in the model explained about 37.6% of the changes in the dependent variable, ROA of ZBN while 62.4% is explained by other factors not included in the model. However, the adjusted coefficient of determination (Adjusted R^2), 0.029 indicates that the exogenous variables in the model explained about 2.9% of the total variation or changes in ROA of ZBN while the remaining 97.1% is accounted for by other factors unexplained by the model after talking cognizance of the degrees of freedom.

Moreover, under ROE of ZBN model (table 4.10), the R^2 value of 0.640 indicates that the power of our model in explaining variations in relation to dependent variable, ROE is moderately strong. It also shows that the level of correlation is moderately strong. In the same vein, the R^2 value of 0.640 implies that the variables included in the model explained about 64.0% of the changes in the dependent variable, ROE of ZBN while 36.0% is explained by other factors not included in the model. However, the adjusted coefficient of determination (Adjusted R^2), 0.440 indicates that the exogenous variables in the model explained about 44.0% of the total variation or changes in ROE of ZBN while the remaining 56.0% is accounted for by other factors unexplained by the model after talking of the degrees of freedom.

Also, the result in table 4.10, under ROA of FCMB model, the R^2 value of 0.653 indicates that the power of our model in explaining variations in relation to dependent variable, ROA is moderately strong. It also shows that the level of correlation is also strong. the R^2 value of 0.653 implies that the variables included in the model explained about 65.3% of the changes in the dependent variable, ROA of FCMB while 34.7% is explained by other factors not included in the model. However, the adjusted coefficient of determination (Adjusted R^2), 0.460 indicates that the exogenous variables in the model explained about 46.0% of the total variation or changes in ROA of FCMB while the remaining 54.0% is accounted for by other factors unexplained by the model after talking cognizance of the degrees of freedom.

Finally, under ROE of FCMB model, the R^2 value of 0.724 indicates that the power of our model in explaining variations in relation to dependent variable, ROE is strong. It also shows that the level of correlation is strong. In the same vein, the R^2 value of 0.724 implies that the variables included in the model explained about 72.4% of the changes in the dependent variable, ROE of FCMB while 27.6% is explained by other factors not included in the model. However, the adjusted coefficient of determination (Adjusted R^2), 0.570 indicates that the exogenous variables in the model explained about 57.0% of the total variation or changes in ROE of FCMB while the remaining 43.0% is accounted for by other factors unexplained by the model after talking.

The student t-test

Hypothesis to be tested are:

H_0: the parameters estimated are statistically insignificant.

H_A: the parameters estimated are statistically significant.

Decision Rule: Reject H_0 if $/t_{cal}/ > /t_{(tab)}/$ at 5% level of significance. Otherwise, do not reject. Alternatively, If the significant level (prob.) as shown in the regression result is less than 0.05, reject H_0. Otherwise, do not reject.

Hypotheses Testing

The hypotheses for the study in their null forms are:

Table 4.11: T-test Results for Model 1, Model 2, Model 3, Model 4, Model 5 and Model 6.

Variable	ROA of FBN Prob.	Status	ROE of FBN Prob.	Status	ROA of ZBN Prob.	Status	ROE of ZBN Prob.	Status	ROA of FCMB Prob.	Status	ROE of FCMB Prob.	Status
NLR	0.6696	Not sig.	0.5811	Not sig.	0.0707	Not sig.	0.1674	Not sig.	0.3135	Not sig.	0.3941	Not sig.
NDR	0.3496	Not sig.	0.1389	Not sig.	0.0788	Not sig.	0.2117	Not sig.	0.0049	Sig.	0.0318	Sig.
CAR	0.9175	Not sig.	0.2022	Not sig.	0.9009	Not sig.	0.7403	Not sig.	0.5077	Not sig.	0.6944	Not sig.
LEV	0.7218	Not sig.	0.9303	Not sig.	0.4718	Not sig.	0.0273	Sig.	0.4895	Not sig.	0.0276	Sig.
FSZ	0.1798	Not sig.	0.6489	Not sig.	0.4175	Not sig.	0.4082	Not sig.	0.1132	Not sig.	0.2069	Not sig.

Source: Extracts from Tables of various models

Test of Hypothesis I
There is no significant relationship between non-performing loan ratio and profitability of commercial banks in Nigeria
ROA of FBN: prob. value = $0.6696 > 0.05$.
ROE of FBN. value = $0.5811 > 0.05$.
ROA of ZBN: prob. value = $0.0707 > 0.05$.
ROE of ZBN: prob. value = $0.1674 > 0.05$.
ROA of FCMB: prob. value = $0.31352 > 0.05$.
ROE of FCMB: prob. value = $0.3941 > 0.05$.
From the analysis in table 4.11 above, we found that non-performing loan ratio has not significantly impacted on profitability of selected commercial banks in Nigeria (ROA of FBN, ROE of FBN, ROA of ZBN, ROE of ZBN, ROA of FCMB and ROE of FCMB). We conclude that non-performing loan ratio has not significantly enhanced profitability of selected commercial banks in Nigeria.

Test of Hypothesis II
There is no significant relationship between non-performing loan to deposit ratio and profitability of commercial banks in Nigeria.
ROA of FBN: prob. value = $0.3496 > 0.05$.
ROE of FBN. value = $0.1389 > 0.05$.
ROA of ZBN: prob. value = $0.0788 > 0.05$.
ROE of ZBN: prob. value = $0.2117 > 0.05$.
ROA of FCMB: prob. value = $0.0049 < 0.05$.
ROE of FCMB: prob. value = $0.0318 < 0.05$.
From the analysis in table 4.14 above, we found that non-performing loan to deposit ratio had significantly impacted on both ROA of FCMB and ROE of FCMB but insignificant to ROA of FBN, ROE of FBN, ROA of ZBN and ROE of ZBN.
We conclude that non-performing loan to deposit ratio significantly impacted on profitability (ROA and ROE) of FCMB only.

Test of Hypothesis III
There is no significant relationship between capital adequacy ratio and profitability of commercial banks in Nigeria.
ROA of FBN: prob. value = $0.9175 > 0.05$.
ROE of FBN. value = $0.2022 > 0.05$.
ROA of ZBN: prob. value = $0.9009 > 0.05$.
ROE of ZBN: prob. value = $0.7403 > 0.05$.
ROA of FCMB: prob. value = $0.5077 > 0.05$.
ROE of FCMB: prob. value = $0.6944 > 0.05$.
From the analysis in table 4.14 above, we found that capital adequacy ratio has not significantly impacted on profitability of selected commercial banks in Nigeria (ROA of FBN, ROE of FBN, ROA of ZBN, ROE of ZBN, ROA of FCMB and ROE of FCMB).
We conclude that capital adequacy ratio has not significantly enhanced profitability of selected commercial banks in Nigeria.

Test of Hypothesis IV
There is no significant relationship between the leverage ratio and profitability of commercial banks in Nigeria.
ROA of FBN: prob. value = $0.7218 > 0.05$.
ROE of FBN. value = $0.9303 > 0.05$.
ROA of ZBN: prob. value = $0.4718 > 0.05$.
ROE of ZBN: prob. value = $0.0273 < 0.05$.
ROA of FCMB: prob. value = $0.4895 > 0.05$.
ROE of FCMB: prob. value = $0.0276 < 0.05$.
From the analysis in table 4.14 above, we found that leverage ratio had significantly impacted on both ROE of ZBN and ROE of FCMB but insignificant to ROA of FBN, ROE of FBN, ROA of ZBN and ROA of FCMB. We conclude that leverage ratio significantly impacted on ROE of ZBN and ROE of FCMB only.

Test of Hypothesis V
There is no significant relationship between the firm size and the profitability of commercial banks in Nigeria.

ROA of FBN: prob. value = 0.1798>0.05.
ROE of FBN. value = 0.6489>0.05.
ROA of ZBN: prob. value = 0.4175>0.05.
ROE of ZBN: prob. value = 0.4082>0.05.
ROA of FCMB: prob. value = 0.1132>0.05.
ROE of FCMB: prob. value = 0.2069>0.05.
From the analysis in table 4.11 above, we found that firm size has not significantly impacted on profitability of selected commercial banks in Nigeria (ROA of FBN, ROE of FBN, ROA of ZBN, ROE of ZBN, ROA of FCMB and ROE of FCMB).
We conclude that firm size has not significantly enhanced profitability of selected commercial banks in Nigeria.

Discussion of Results
The statistical result in table 14.11 indicates that in model 1(ROA of FBN), model 2 (ROE of FBN), and model 3 (ROA of ZBN), none of the explanatory variables significantly impacted on profitability at 5% level of significance. The results also showed that that only leverage ratio significantly impacted on ROE of ZBN in model 4, non-performing loan to deposit ratio significantly impacted on ROA of FCMB in model 5 while two explanatory variables (leverage ratio and non-performing loan to deposit ratio) significantly impacted on ROE of FCMB. In addition, the coefficients of these variables, NDR and CAR in model 1(ROA of FBN), NLR, NDR, LEV and FSZ in model 2 (ROE of FBN), NDR only in model 3(ROA of ZBN), NDR only in model 4 (ROE of ZBN), NDR only in model 5 (ROA of FCMB) and finally NDR and CAR in model 6 (ROE of FCMB), were correctly signed in support of the a priori expectation.

Moreover, considering the result in table 4.10, the R^2 and adjusted R^2 values in the six models used in this study indicate the power of our independent variables in explaining the variations in relation to the dependent variables. For ROA of FBN model, the R^2 value of 0.667 indicates that the power of our model in explaining variations in relation to dependent variable, ROA is moderately strong. The adjusted coefficient of determination (Adjusted R^2), 0.481indicates that the exogenous variables in the model explained about 48.1% of the total variation or changes in ROA of FBN while the remaining 51.9% is accounted for by other factors unexplained by the model after talking cognizance of the degrees of freedom. In addition, under ROE of FBN model (table 4.10), the R^2 value of 0.555 indicates that the power of our model in explaining variations in relation to dependent variable, ROE is moderately strong. The adjusted coefficient of determination (Adjusted R^2), 0.307indicates that the exogenous variables in the model explained about 30.7% of the total variation or changes in ROE of FBN while the remaining 69.3% is accounted for by other factors unexplained by the model after talking cognizance of the degrees of freedom.

Also, for ROA of ZBN model, the R^2 value of 0.376 indicates that the power of our model in explaining variations in relation to dependent variable, ROA is very weak. The adjusted coefficient of determination (Adjusted R^2), 0.029indicates that the exogenous variables in the model explained about 2.9% of the total variation or changes in ROA of ZBN while the remaining 97.1% is accounted for by other factors unexplained by the model after talking cognizance of the degrees of freedom.

Moreover, ROE of ZBN model (table 4.10), the R^2 value of 0.640 indicates that the power of our model in explaining variations in relation to dependent variable, ROE is moderately strong. However, the adjusted coefficient of determination (Adjusted R^2), 0.440 indicates that the exogenous variables in the model explained about 44.0% of the total variation or changes in ROE of ZBN while the remaining 56.0% is accounted for by other factors unexplained by the model after talking of the degrees of freedom. Also, the result in table 4.10, under ROA of FCMB model, the R^2 value of 0.653 indicates that the power of our model in explaining variations in relation to dependent variable, ROA is moderately strong. The adjusted coefficient of determination (Adjusted R^2), 0.460indicates that the exogenous variables in the model explained about 46.0% of the total variation or changes in ROA of FCMB while the remaining 54.0% is accounted for by other factors unexplained by the model after talking cognizance of the degrees of freedom. Finally, under ROE of FCMB model, the R^2 value of 0.724 indicates that the power of our model in explaining variations in relation to dependent variable, ROE is strong. However, the adjusted coefficient of determination (Adjusted R^2), 0.570indicates that the exogenous variables in the model explained about 57.0% of the total variation or changes in ROE of FCMB while the remaining 43.0% is accounted for by other factors unexplained by the model after talking

V CONCLUSION AND RECOMMENDATIONS
Conclusion
The essence of this research work is to investigate and ascertain the effect of credit risk management on profitability of banks in Nigeria. This was carried out through identification of the credit risk management and banks profitability indicators, and to find an empirical evidence of the degree to which credit risk management affects banks' profitability in the Nigerian Banking system. There has been a continuing debate about the nature and degree of impact the effective management of risks arising from issuance of loan and advances to bank customers has on the profitability of banks in Nigeria.

The results in this research work indicates that among all the credit risk management variables used for the purpose of this study, for the three sampled banks (First Bank Nig Plc, Zenith Bank Plc and First City Monument Bank), all but two

of the explanatory variables of credit risk management significantly impacted on profitability of some of the variables (ROA and ROE) of the sampled banks. For First Bank, none of the credit risk management variables impacted on it profitability. For Zenith Bank, none of the credit risk management variables significantly impacted on it Return On Asset Zenith, but leverage ratio significantly impacted on the Return On Equity of Zenith Bank Plc. For First City Monument Bank, only non-performing loan to deposit ratio significantly impacted on it ROA and ROE while leverage ratio significantly impacted on only the ROE.

Recommendations

Based on findings from the empirical analysis of this research work, the following recommendations, through which they can work to improve credit risk management and to have an effective role in achieving banks profitability in Nigerian Banking system are as follows:

The Central Bank of Nigeria (CBN) and the Nigeria Deposit Insurance Corporation (NDIC) should strengthen supervision to prevent a sharp build-up of Nonperforming loans in the future.

Nigerian Banks in order to design an effective credit risk management system need to establish a suitable credit risk environment which should operate under a sound credit issuance process, maintaining an appropriate credit administration that involves monitoring, processing as well as enough controls over credit risk. Banks need to place and devise strategies that will not only limit the banks exposition to credit risk but will develop performance and competitiveness of the bank. Banks should also establish a proper credit risk management strategies by conducting sound credit evaluation before granting loans to customers seeking for loan.

REFERENCES

[1]. Anderson, Salas, V. and Saurina, J. (2002). Credit Risk in Two Institutional Regimes: Spanish Commercial and Savings Banks. *Journal of Financial Services Research*, 22(3):203-224.

[2]. Appa, R. (1996). *The monetary and financial system* (3rd ed.). London: Bonkers Books Ltd.

[3]. Barthwal, R.R. (2000). *Industrial Economics: An Introductory Textbook.* New Age International Publishers, New Delhi.

[4]. Burns, N.al and Grovr S. K. (2003). *The practice of nursing research: Conduct, critique and utilization.* Toronto: WB Saunders.

[5]. Campbell, A. (2007). Bank insolvency and the problem of non-performing loans. *Journal of Banking Regulation,*

[6]. Edwards, P. and Turnbull, P. W (1994). Finance for Small and Medium Sized Enterprises: Information and the Income Gearing Challenge. *International Journal of Bank Marketing* 12(6):3–9.

[7]. Emery, G. W. (1984). A pure financial explanation for trade credit. *Journal of Financial and Quantitative Analysis,* 19(3):271–285.

[8]. Festus O. O. and Samson B. F. (2020). Effect of Credit Risk Management on the Profitability of Selected Deposit Money Banks in Nigeria. https://dj.univanubius.ro/index.php/JAM/article/view/725/1046

[9]. Giesecke, K. (2004). Credit risk modeling and valuation: an introduction. Credit Risk: Models and Management (Vol. 2). New York, NY: Risk Books

[10]. Harcourt, E. E. (2017). Credit risk management and performance of deposit money banks in Nigeria. *International Journal of Managerial Studies and Research,* 5(8):47-57.

[11]. Hou, Y., & Dickinson, D. (2007). The non-performing loans: some bank-level evidences. In 4th *International Conference on Applied Financial Economics*, Samos Island, Greece.

[12]. Hudu, G., Abdu, B., Jaafaru, A. I., Murtala, A. and Sulaiman, A. S. (2020). Credit Risk Management and Financial Performance of Quoted Deposit Money Banks in Nigeria. *Journal of Finance, Accounting and Management*, 10(1): 26-42.

[13]. Kajola, S. O., Adedeji S. B., Olabisi J. and Babatolu A. T. (2018). Effect of Credit Risk Management on Financial Performance of Nigerian Listed Deposit Money Banks. *Scholedge International Journal of Business Policy & Governance*.

[14]. Kargi, H. S. (2011). Credit risk and the performance of Nigerian banks (Department of accounting, Faculty of Administration, Ahmadu Bello University, Zaria).

[15]. Lillian, K. (2013). The effect of credit risk management on loans portfolio among Saccos in Kenya. Unpublished MBA Thesis at the University of Nairobi, Kenya, 1-51.

[16]. Lindergren, H. (1987). *Banks, Investment Company, Banking Firms, Stockholm Enskilda Bank (1924-1945).* Institute for Research in Economic History, Stockholm School of Economics, Stockholm.

[17]. Nielsen, J. H. (2002). Trade credit and the bank lending channel. *Journal of Money, Credit and Banking*, 34(1):226–253.

[18]. Okere, W., Isiaka, M. A. & Ogunlowore, A. J. (2018). Risk management and financial performance of deposit money banks in Nigeria. *European Journal of Business, Economics and Accountancy,* 6(2):30-42.

[19]. Onyefulu, D., Okoye, E. and Orjinta, I. (2019). Financial Risk and Performance of Deposit Money Bank: *Evidence From West African Countries.* Department of Accountancy, Chukwuemeka Odumegu Ojukwu University Igbariam campus, Anambra State, Nigeria.

[20]. Owojori, A. A., I. R. Akintoye & F.A. Adidu, (2011). The challenge of risk management in Nigerian banks in the post consolidation era. *Journal of Accounting and Taxation,* 3(2):23-31.

[21]. Petersen, M. A., & Rajan, R. G. (1997). Trade credit: Theories and evidence. *Review of Financial Studies,* 10(3):661–691.