

# **T**HE EFFECT OF CREDIT RISK ON THE PROFITABILITY OF COMMERCIAL BANKS IN NIGERIA

**FALOLA, CLEMENT OLUMIDE<sup>1</sup>, MOMOH, OMOWUMI AYONI<sup>2</sup>**

*<sup>1</sup>Department of Insurance, School of Financial Management Studies, the Oke-Ogun Polytechnic Saki, Oyo State, Nigeria <sup>2</sup>Department of Insurance, Faculty of Financial Management Studies, the Polytechnic, Ibadan, Oyo State, Nigeria.*

## **ABSTRACT**

**A** continuous poor management of credit risk may lead to a collapse of a financial system. This may eventually affect the lending capacity of the lending commercial Bank and subsequent profitability. Banks mobilize funds from certain sources of business community such as households, businesses, and stated government. Therefore the importance of banks as a financial service sector cannot be over emphasised. Risks are closely related to uncertainty and probability of losses. Banking sector of developed and developing economies are germane to economic development through the financial services they provide. Quantitative and descriptive research design was adopted while secondary data was sourced from the Nigeria Stock Exchange, Central Bank of Nigeria Analysis of variance (ANOVA) and *t* test was

## **Introduction:**

Banks mobilize funds from certain sources of business community such as households, businesses, and stated government. Therefore the importance of banks as a financial service sector cannot be over emphasised. Risks are closely related to uncertainty and probability of losses. Banking sector of developed and developing economies are germane to economic development through the financial services they provide. Their intermediation role can be said to be a catalyst for economic growth. The efficient and effective

*employed to compare the variables among the five Banks and between International and National Banks respectively. The credit risk of the commercial Banks studied did not significantly affect their profitability per fiscal year except for Zenith Bank. The International Banks performed better in terms of credit risk management and profitability between the fiscal years of 2009-2018. The result showed that credit risk of the commercial Banks studied did not significantly affect their profitability except for Zenith Bank. The International Banks performed better in terms of credit risk management and profitability between the fiscal years of 2009-2018. Based on the major findings of this study, better credit risk management, credit insurance and enabling business climate were recommended.*

**Keywords:** *Banks, Credit risk, Non-performing, Profitability, Economic development*

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Performance of the banking industry over time is an index of financial stability in any nation. The extent to which a bank extends credit to the public for productive activities accelerates the pace of a nation's economic growth and its long-term sustainability (kolapo,Ayeni and Oke, 2012). Meanwhile, credit risks are losses for the bank, because entrepreneurs have not retained the amount invested to the bank in predetermined time period. Therefore, higher credit risk provide lower quality of financing, and higher nonperforming assets (Parastoo and Housang, 2011).

The challenge of credit risk which leads to nonperforming loans (NPLs) in bank systems in many countries cannot be overemphasized. It is also a succinct that banks or financial institutions that need to manage and maintain acceptable levels of NPLs must invest in a robust and reliable credit risk management system. The implementation of robust and effective credit risk management has become a critical aspect that determines the performance of commercial banks on a global scale. Provision of credit facilities is one of the biggest sources of revenue for any

commercial bank in any corner of the globe. Nevertheless, the likelihood of borrowers being unable to meet their loans obligations or commitments has lately been on increase and this is a major concern for banks especially those involved in unsecured lending.

Berger, Bonime, Covitz & Hancock (2000) observed that bank performance is broad and carries different meaning to the different stakeholders involved in the business. In broad sense, performance means the contribution financial institutions or banks make to the common wealth on behalf of their consumers, shareholders and other key stakeholders. In another study, Aremu et al., (2010) observed that bank performance can be defined as the actual financial outcomes that can be assessed or measured against the set targets. These results could be efficiency, profitability, cost minimization, levels of liquidity, leverage and the thresholds of the total shareholder's wealth amongst others. Generally, financial performance is the threshold or measures used to determine or gauge the efficiency or effectiveness of a financial institution uses the committed resources and invested to increase value of the shareholders.

The banking industry, Nigeria is in the business of providing financial capital to the business community as well as individual customers. Banks do this with the expectation of achieving targeted rates of returns on the extensions of credit over a period of time, and eventually reclaiming their principal with interest. Any extension of credit carries with it the risk of non-repayment, under the terms of the financial relationship between the financier and an individual or corporate organization. Based on this fact, banks have a strong vested interest in performing extensive due diligence, prior to committing funds, and on a regular basis to minimize credit risk and achieve an enhanced value for their organization.

Credit risk arises when an obligor fails to perform its obligations under a trading or loan contract or when its ability to perform such obligations is impaired resulting in an economic loss to the bank (CBN, 2019). It does not only arise when a borrower defaults on re-payment of a loan or settlement of principal and interest, but also when its repayment capability declines.

Kithingi (2010) defined credit risk as the probability that a payment will not be fully settled because the debtor becomes insolvent.

The Asset Management Corporation of Nigeria (AMCON) was established by the Federal Government in July, 2010 to buy off trillions of toxic assets to stave off a major collapse of the Nigeria banks. Having succeeded in buying off about 95% of the non-performing loans, the corporation has achieved the primary purpose for which its act was made, with a caveat not to buy new non-performing loans. Before AMCON was created, the country witnessed a consolidation and clean-up of the banks under former Central Bank of Nigeria CBN governors: Charles Soludo and Sanusi Lamido, because most of the banks were substantially under-capitalized, arising mainly from non-performing loans. As at January, 2006 when the banking licenses of 14 banks were revoked, due to their failure to meet the minimum re-capitalization directive of the CBN, some of the banks had ratios of non-performing credits that were up to 80% of loan portfolios. In 2000 for instance, the ratio of non-performing loans to total loans of the industry was 21.5% and as at the end of 2001, the ratio had improved to 16.9%. In 2002, 2003 and 2004, the ratio deteriorated to 21.3%, 21.6% and 23.8% respectively. However, in 2005, 2006, 2007 and 2008 there were consistent improvement of; 18.1%, 8.8%, 8.4% and 6.3% respectively. (NDIC and CBN Annual Reports; various years). Unfortunately, non-performing loans is becoming cyclical in Nigeria. The Deposit Money Banks recorded a N56.31 billion increase in non-performing loans from August 2013 to August 2014. The increase in non-performing loans from N344.26 billion as at August, 2013, to N400.57 billion, as at August 2014, represents a 16.36% increase. Also, total credit recorded a growth rate of 23.8% in 2004, 30.4% in 2005, 40.9% in 2006, 82.7% in 2007 and 62.3% in 2008. (CBN, 2017).

However, in spite of the alarming credit risk exposures, the profitability of the Nigeria banks seems not adversely affected. Some banks with high level of NPLs, occasioned by poor credit risk policies, declared positive performances, reflected by good profit margin on the profit and loss account and balance sheet (Mete, 2006). In the light of the seemingly

contradiction, the study is guided by the following research questions: What is the impact of loans on banks' profitability in Nigeria? What is the effect of Non-performing Loans on the profitability of the Nigerian banks? The main objective of this study is to examine the effect of credit risk on banks profitability in Nigeria. The specific objectives are to: examine the impact of loans on profitability of the Nigerian banks; determine the effect of non-performing loans on banks profitability in Nigeria. To address the research questions, and achieve the objectives of this study, it is postulated that there is no significant relationship between non-performing loans and banks profitability. Also, there is no relationship between loans and banks profitability in Nigeria.

## LITERATURE REVIEW

### Conceptual Review

Banking system is a combination of financial institutions responsible for safekeeping and lending of money and the provision of other financial services to the populace (CBN, 2016). Technically, deposit takers whose liabilities are included in the national definition of broad money are very significant component of the banking system. In most emerging economies where the non-bank financial institutions are still nascent, the deposit takers component of the banking system is usually huge. Hence, shock on asset side of a group of banks, through rising amount of NPLs in the credit portfolio could spillover and affect the stability of the system. A good measure of banking stability is essential for addressing issues of instability in the system.

In most academic literature, stability of banks has been measured under CAMELS framework by using individual indicator like Return on Assets (ROA) and Return On Equity (ROE) (Kolapo et al., 2012). Return on assets measures efficiency of deposit takers in the use of assets in generating earnings. ROA reveals how debt drives returns, the same way ROE shows the extent of equity investment effectiveness. Banking system stability may not be adequately captured with a single indicator because bank's capital adequacy ratio, for instance may not guarantee stability.

### Return on Equity (ROE)

It is a measure, which is of great interest to the shareholders. It is a measure of the company's efficiency at generating profit from every single unit of shareholders equity. The ratio ROE allows investors to understand how their money is being put to productive use. The ROE, which is also referred to as net worth, is an essential measure of the bank's earnings performance (Ali, 2015)

$$\text{ROE} = \frac{\text{Profit after Tax (Net income)}}{\text{Total Equity Capital (Total Share holders fund)}}$$

The numerator of this measure is profit after tax whereas the denominator, which is total equity capital, comprises of all contributions made by equity shareholders (i.e. Paid up capital + reserves and surpluses)

### Capital Adequacy (C)

This component of the CAMELS model is a measurement that determines the solvency of a bank.

Adequate capital reserve helps banks to expand, and increase the confidence of depositors and regulators. The measure also provides a cushion for potential loan losses and other unanticipated problems. In effect, capital adequacy enhances the stability and efficiency of the bank (Parvesh and Sanjeev, 2016). For the purpose of this study, the capital to risk-weighted assets ratio will be used as a measure of capital adequacy.

$$\text{Capital Adequacy} = \frac{\text{Tier 1 + Tier 2 Capital}}{\text{Risk - weighted Assets}}$$

Where: Tier 1 capital includes; shareholders equity, perpetual non-cumulative preference shares, disclosed reserves and innovative capital instruments.

Tier 2 Capital includes undisclosed reserves, revaluation reserves of fixed assets, and long-term holdings of equity securities, general provisions/loan loss reserves, hybrid-debt capital instruments, and subordinated debt.



**Asset Quality (A)**

This ratio is a measure of the degree of the financial strength of a bank. Measurement of asset quality is very significant since it depicts the profitability of the bank. Assessment of asset quality involves rating investment risk factors that the bank may face and compare them to the company's capital earnings (Partnoy and Skeel, 2006). Asset quality is a reflection of the efficiency of a bank's credit decisions and investment policies and practices. Since loans and advances make up the large portion of bank assets, the study will use the ratio of Loan Impairment charges to Total Loans as a measure for assets quality.

$$\text{Asset Quality} = \frac{\text{Loan Impairment Charges}}{\text{Total Loans}}$$

**Management Efficiency (M)**

It is another critical measure as it guarantees the growth and survival of a bank. The management efficiency ratio indicates the adherence to the laid down norms and regulations, leadership and administrative capability, and the capability to counter any changing operational environment. Return on advances will be used as a measure for management efficiency. This ratio reveals the relationship between net profit after tax and total advances issued by the bank. The higher ratio of return on advances implies higher performance and the profitability of the funds. This ratio was chosen over others because it indicates the efficiency of management in the utilisation of deposits mobilised from the public into advances with maximum returns

$$\text{Management Efficiency} = \frac{\text{Net Profit}}{\text{Total Advances}}$$

**Earning Capacity (E)**

This measure indicates the bank's ability to create appropriate returns in order to be able to expand, retain competitiveness, and add to capital through retained earnings. High earnings quality reflects the firm's current operating performance and an indicator of future operating performance. Primarily, earning quality reflects the profitability of banks and throw light

on the consistency of future earnings. Return on assets will be used as the measure of earnings quality.

$$\text{Earning} = \frac{\text{Net profit}}{\text{Total assets}}$$

### Liquidity (L)

A liquid bank is the one that can meet its obligations towards depositor. Liquidity also means the available fund with a bank to meet its credit demands and cash flow requirements. Banks with a larger volume of liquid assets are perceived safe since these banks can live up to the call of unexpected withdrawals. However, the adverse effect of keeping a larger volume of liquidity is that it reduces management's ability to commit credibly to an investment strategy that protects investors' interest. Banks can maintain an adequate liquidity position by either increasing current liability or quickly converting their assets into cash (Psillaki, 2010). The measure for liquidity for this study will be loans and advances to deposit ratio. The higher the ratio, the more credit the bank generates from its deposit received from customers.

$$\text{Liquidity} = \frac{\text{Loans and Advances}}{\text{Total deposit}}$$

The numerator of this measure is profit after tax whereas the denominator, which is total equity capital, comprises of all contributions made by equity shareholders (i.e. Paid up capital + reserves and surpluses)

### Sensitivity (S)

This measure explains how particular risk exposure can cause havoc to the bank's profitability. It is the new addition to the rating's parameters which reflects the degree to which changes in interest rates, exchange rates, commodity prices and equity price can affect earnings and hence, the bank's capital ( Suresh and Paul, 2018 p.89). GAP analysis is a tool used to evaluate a bank's earnings exposure to interest rate movements. A bank's GAP over a given period is the difference between the value of its assets that mature during that period and the value of its liabilities that mature



during the same period. If the difference is significant, then interest rate changes will have a tremendous impact on net interest income. A balanced position will occur if the amounts of maturing (repricing) assets exactly offset by the repricing liabilities; the ratio will be equal to 1.0. If the GAP ratio is less than 1.0, then it is an indication that the bank is liability sensitive (i.e. Liability matures earlier than assets). On the other hand, if the GAP ratio is greater than 1.0, then the bank is asset sensitive, (i.e. assets mature earlier than liability). GAP is the difference between risk-sensitive assets and risk-sensitive liabilities.

$$GAP = \text{Rate Sensitive Assets (RSA)} - \text{Rate Sensitive Liabilities (RSL)}$$

The GAP ratio, on the other hand, is the ratio of RSA to RSL

$$GAP \text{ ratio} = \frac{\text{Rate Sensitive Assets (RSA)}}{\text{Rate Sensitive Liabilities (RSL)}}$$

Where: Rate-sensitive assets are the sum of net advances, net investment and money at call.

Rate-sensitive liabilities are the sum of deposits and borrowings of the bank. Financial stability index has been found useful due to its capabilities; it mirrors the country's financial structure (Kithinji, 2010). Sulaimon (2001) argues that the main advantage of Z-score is computational simplicity for financial institutions or corporations. Extant theories have established a connection between NPLs and banking stability, thus, it is also imperative to understand the fundamentals of NPLs.

The concept of NPLs has been expressed by different authors in the literature. One common feature of NPL is the period over which the principal and interest remain unpaid and un-serviced before a loan is classified as non-performing. Caprio and Klingebiel (1990) described NPLs as loans that do not generate income over a sustained period of at least three months. In the same vein, Ojo (2010) expressed NPLs as loans that are 90 days or more past due or no longer accruing interest. The IMF Financial Soundness Indicators Compilation Guide of 2006 recommends that loans are classified as non-performing when payment of principal and interest are past due by three months or more or when interest payments

equaling three months interest or more have been capitalized, refinanced or rolled over. One interesting argument put forward by the IMF Guide is that a loan can also be classified as non-performing when the debtor files for bankruptcy. In Nigeria, NPLs is classified into substandard, doubtful, very doubtful and lost.

## **Theoretical Review**

### **Commercial-Loan Theory**

The commercial-loan theory, also known as real bills doctrine, argues that banks have a problem described as liquidity-earnings dilemma. It states that if a bank wants to be a safe haven for all its depositors' funds, it would simply hold all those funds in its safe as perfectly liquid assets; then whenever a depositor requested cash from the commercial bank, the banker would simply open the safe and give the money back to the client. This would ensure that there is no credit risk.

According to the theory, the bankers can take a position at the other extreme in order to earn some profit other than being only cash keepers for its clients. Credit risk managers can employ all the funds deposited to the commercial bank to make a loan to finance a high-risk venture.

Such a loan might have a high earnings potential for the bank, but the loan probably will not be liquid. It would be difficult to liquidate to obtain cash when depositors want to make with drawals. To resolve the liquidity-earnings problems, bankers must recognize the advantage of making self-liquidating loans (real bills). A loan is considered self-liquidating if it is secured by assets which can be resold to repay the loan which helps to mitigate credit risks. Loans of this type could ensure the banks continues liquidity and earn profits. Thus, liquidity and earnings are simultaneously gained by the bank (Niogo, 2012).

## **Empirical Review**

Risk is inherent in every business organisation or activity. The risk in the banking sector is more threatening and as such risk management is of grave importance to the sector. In Nigeria like some developing economies

where consumer confidence index is low, banking business is riskier than normal (Akindele, 2012). Banks have to battle with credit defaults, liquidity problems, balancing bank policy guidelines, regulatory issues and bank operations, as well as keeping pace with capital adequacy.

Extant empirical studies have largely posited that risks have effects on bank performance but grossly disagreed on the direction of such effects. Meaningful policies as well as managerial decisions may suitably emerge from these divergent findings. Akindele, (2012) who adopted all the risks in one study found a positive relationship between risk management and bank performance.

Researchers use a panel regression model to measure the performance of these private banks. Their findings indicated that capital adequacy was positive and significantly related to the performance of Ethiopian private commercial banks. Assets quality was found to be insignificant in explaining ROE (performance). Management quality also affected performance significantly. Earnings quality also affected performance negatively and significant whereas liquidity was found to affect the performance of Ethiopian private commercial banks positively and significant (Ali, 2015).

Adeusi et al. (2014) investigated the Pakistani banking sector performance using the CAMELS ratio framework. Fixed effect panel data analysis conducted indicated that capital adequacy ratio, management quality, and sensitivity were all found to be positive and insignificantly related to performance. Assets quality however found to affect performance negatively and was significant. Liquidity was also negative and significant with respect to performance. Earning was found to be the most highly significant parameter, which negatively impacts on the performance of Pakistani banks. Out of the CAMELS ratios, three variables (Assets quality, Earnings ability and Liquidity) were found to significantly predict bank performance in Pakistan

Samuel (2018) evaluated the performance of selected commercial banks in India using the CAMELS rating model, using data for five years. The non-parametric analysis of the banks indicated that all the selected banks

conform to the capital adequacy requirement as per the Basel norms. Besides, all banks had sound asset quality and management efficiency. However, earnings capacities, as well as the liquidity of the banks were not satisfactory.

Adeusi et al., (2014) carried out a study to examine the effect of association of the risk management practices on bank financial performance in Nigeria. The study employed a panel of ten commercial banks for a period of four years covering 2006 to 2009. Using two variables of financial performance, return on assets and return on equity to develop two models with liquidity, credit and capital risks, the regression result showed that there is a significant relationship between bank performance and risk management. Soyemi, (2014) investigated the effect of risk management practices on financial performance of banks in Nigeria. A cross-sectional model of eight quoted commercial banks was collected in 2012 for the study. The variables of risk management employed are Non-Performing Loan Ratio, Liquidity Ratio, Cost to Income Ratio, Capital Adequacy Ratio while two dependent variables used to form two models for the study were Return on Assets (ROA) and Return on Equity (ROE). The OLS regression result showed that financial performance is greatly determined by risk management practices.

Olusanmi, et al., (2015) examined the impact of effective risk management on banks' financial performance in Nigeria. The data set covered a sample of 14 banks listed on the floor of the Nigerian Stock Exchange over a period of 6 years (2006-2012). The dependent variable was Return on Equity (ROE) while the explanatory variables included Non-performing loan ratio, Capital Ratio, Loan to Total Deposit and Risk Disclosure. The results from Ordinary least square regression showed that there is a negative insignificant relationship between risk management proxies and bank's performance

Oforu-Hene and Amoh (2016) investigated the relationship between risk management and bank performance among the listed banks on Ghana Stock Exchange over the period 2007–2014. The performance of banks was measured using ROA and ROE while the explanatory variables included

risk index, size of bank, bank solvency, bank liquidity, non-performing loans, inflation, and exchange rate. The regression result showed that risk management is positively related to performance.

## METHODOLOGY

Secondary data was used in order to empirically collect decade long information about the NPL and ROA of the selected Banks. This involved the use of already processes information and documentary source of data for this research were collected from the financial statements from the websites of all the five banks under study. Those that were not available on the bank' website was gotten from the Nigeria Stock Exchange Library.

Data collected from these sources covered a 10 – year financial period between 2009 and 2018 for the five banks under study and these data were used in the analysis to test the hypotheses of the study. The financial statements of these banks were taken based on their separate financial reporting dates.

The targeted population for the study involved the Twenty-seven (27) commercial banks that are registered by Central Bank of Nigeria and operational as a September, 2018.

Out of the 27 registered banks in Nigeria, 21 are commercial banks; 5 are merchant banks while only one is non-interest bank. The sample size for this research work shall be selected 5 banks among the 21 listed commercial banks only.

In the determination of sample size, stratified random sampling method (equal allocation in such stratum) was adopted using the CBN classification to select three banks from each stratum (A and B) as follows

**Table 1: Classification of Banks**

Strata	Status of Banks	Population	No of banks listed on NSE	Sample size	%
<b>A</b>	International Banking Authorization	09	09	3	30.0
<b>B</b>	National Banking Authorization	10	5	2	40

Source: The Nigerian Stock Exchange 2019

This research did not select any bank not listed which include stratum C (banks with regional banking licenses).

Convenience sampling method (also known as availability sampling) was adopted to select the five banks from strata A and B.

The banks selected at random are Eco Bank Plc, Zenith Bank Plc and United Bank of Africa for International Licensed banks while Unity Bank and Wema Bank Plc were selected under the National Banking License Authorization.

### Data Analysis

The data collected were analyzed with the help of statistical tools such as Ration analysis, trend analysis and Statistical Package for Social Science (SPSS). Using descriptive and inferential statistical models such as correlation and regression, the objectives were realized empirically. The NPL was specified as the independent variable while ROA was the specified dependent variable. Correlation model was employed to test for association while regression was employed to test the effect of NPL on ROA. Analysis of variance (ANOVA) and T test was employed to compare the variables among the five Banks and between International and National Banks respectively. Tables were used to represent the consolidated data. Graphical presentations were also used for better comprehension and presentation.

## RESULTS AND DISCUSSION

Non-performing Loan ratio as an indicator of credit risk management of commercial Banks

**Table 2: Non-performing Loan (NPL)**

	ECO BANK	UBA	ZENITH BANK	UNITY	WEMA BANK
<b>2009</b>	6.20	7.60	6.50	8.20	16.00
<b>2010</b>	6.20	7.80	5.90	5.60	12.00
<b>2011</b>	5.50	3.00	3.51	6.00	15.00
<b>2012</b>	5.60	1.90	3.15	5.00	14.20
<b>2013</b>	6.20	1.20	3.00	26.00	3.87
<b>2014</b>	4.40	1.60	2.80	48.56	2.49
<b>2015</b>	8.20	1.70	2.20	77.73	2.67
<b>2016</b>	8.50	3.90	3.02	97.00	5.07



<b>2017</b>	10.70	6.70	4.70	0.00	3.52
<b>2018</b>	9.60	6.50	4.98	0.00	4.98
<b>Range</b>	(4.40-10.70)	(1.20-7.80)	(2.20-6.50)	(0.00-97.00)	(2.49-16.00)
<b>Decade Mean</b>	7.11	4.19	3.98	27.41	7.98

Source: The Nigerian Stock Exchange 2019

The NPL of the International Banks under the studied decade ranged from 1.20% through 10.70%. Between the two sampled National Banks Unity Bank had a Non performing loan ratio that was about five times above the CBN prescribed threshold (5%). It was also observed that unity bank extensively had a critical level of NPL for four consecutive years (2013-2016). UBA had the least consistent NPL, hence could be described as the most effective credit risk management among the five sampled commercial Banks in Nigeria. Based on the average NPL per fiscal year, the order of credit risk challenges is as follows Unity Bank, Bank, ECOBANK, UBA, ZENITH.

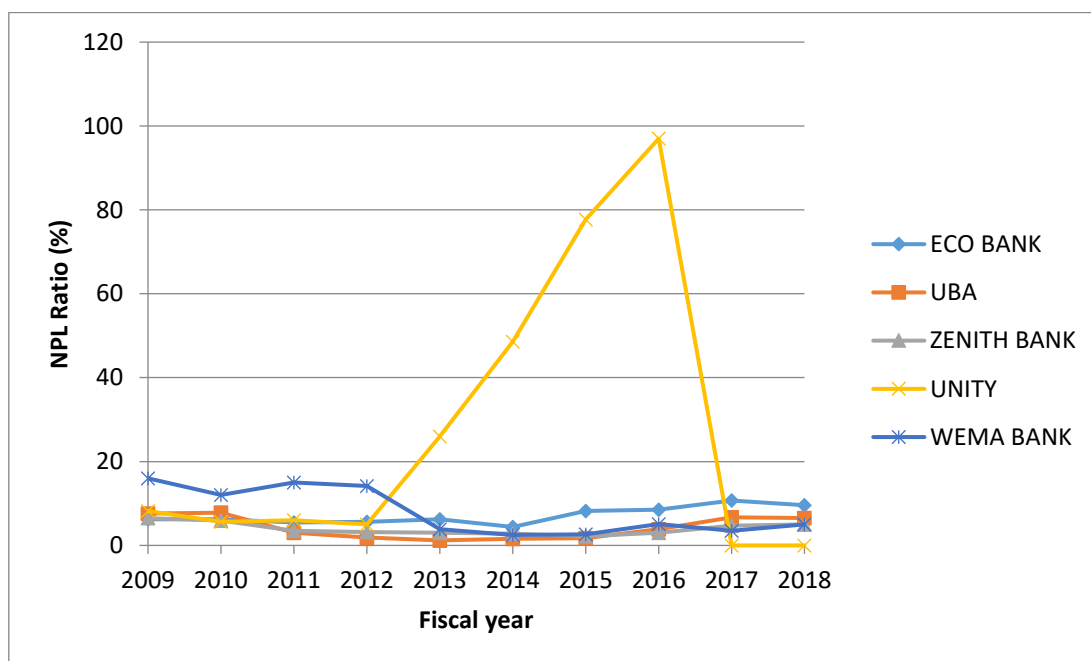


Figure 1: Trend analysis of the Non-performing Loan (NPL): Source: Authors' Computation 2020

The trend analysis above revealed the credit risk burden under which UNITY Bank is consistently operating. This does not suggest that the other Banks are not exposed to credit risk, the major challenge with a long term credit risk may be the investors' panic to invest less or withdraw intending and currently running stakes in such Banks. The Equity on the shares may also yield less dividend for the shareholders. ECOBANK, ZENITH and UBA (International Banks) had the least Burden of Non-Performing Loans. This may have led to the surge in the interest in their shares in the capital market. Despite the shock of the economic meltdown in 2008, these International Banks probably was strict with their recovery of credits. They may have also practiced selective lending by a proper choice of who to offer which level of credit.

Return on Assets (indicator of Profitability) among Commercial Banks in Nigeria

**Table 3: Return on Assets (ROA)**

	ECOBAN K	UBA	ZENITH BANK	UNITY BANK	WEMA BANK
<b>2009</b>	0.17	4.43	0.72	6.00	3.12
<b>2010</b>	0.15	-0.11	1.24	4.00	-2.66
<b>2011</b>	-0.99	-0.48	2.25	1.00	-2.00
<b>2012</b>	1.55	2.45	4.13	2.00	-2.00
<b>2013</b>	0.73	2.10	3.31	6.00	0.00
<b>2014</b>	1.70	1.71	2.90	3.00	1.00
<b>2015</b>	0.40	2.15	2.82	1.00	1.00
<b>2016</b>	0.00	2.06	2.31	0.44	0.61
<b>2017</b>	1.10	1.63	2.17	-0.01	0.39
<b>2018</b>	1.50	1.40	2.45	0.54	0.69
<b>Range</b>	(-0.99- 1.70)	(-0.48- 4.43)	(-0.72- 4.13)	(-2.66- 3.12)	(-2.66- 6.00)
<b>Decade Mean</b>	0.63	1.73	2.43	2.40	-0.33

Source: The Nigerian Stock Exchange 2019

ROA of the International Banks under the studied decade (2009-2018) ranged from -0.99% to 4.43%. However, between the two sampled National Banks WEMA Bank had lagging and loss prone ROA. This may eventually scare investors, or lead to the decision of CBN to step in for a bailout. One of the identified causes of a loss in banking operation in a given year may be the debt burden and bad loans that were already incurred before the given year been considered. This was reported as a continuum fiscal chain by Ojo (2010). The ROA has no limit, however, in a financial system that can be trusted, transparency is important. Hence, the Banks may be better off by reporting their sincere financial status rather than practicing a more detrimental false earnings reporting. It was also observed that UBA had highest overall average of profitability between (2009-2018). WEMA bank had the least ROA, hence could be described as the least profitable among the Banks sampled in this research.

Based on the average ROA per fiscal year, the order of profitability was found to be as follows: WEMA Bank, ECOBANK, UBA, UNITY BANK, ZENITH. It is important to stress the fact that the empirical implication of ROA may not be the ultimate judge of profitability. In operations, many factors play their role in determining profitability of a given Bank. Capital adequacy, Management efficiency and the Quality of assets may have had impact on the Net accrued assets of a given Bank especially around Human Capital and enabling business environment may really come to play their role in previous and subsequent profitability. Therefore, a fiscal year is not the only or most effective way to determine a certainty of Banks's financial capacity.

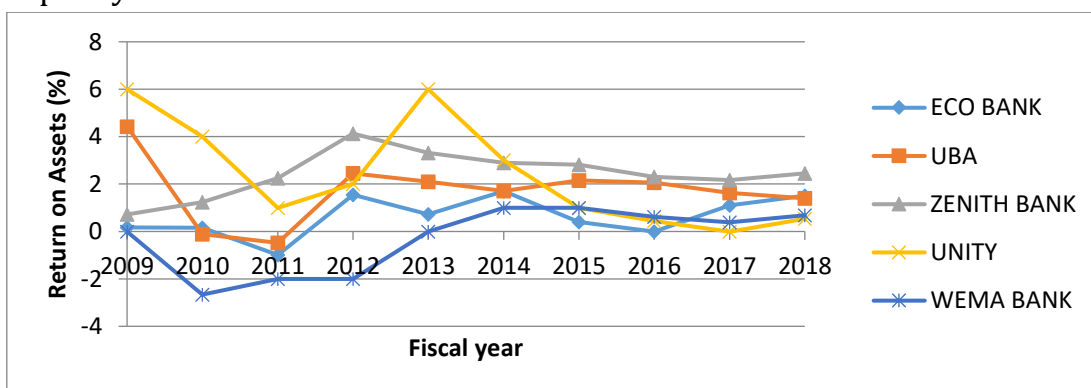


Figure 2: Return on Assets (ROA)

Source: Authors' Computation 2020

Zenith Bank was the most profitable Bank in a steady trend and pattern using ROA as an indicator from 2012 -2018 while WEMA Bank was the overall least profitable since the financial institution had less than 1.5% ROA from 2009-2018. Trend of profit was not steady and this may be indicative of the challenges the Banks encounter annually and how they strategize to rise above such challenges. The market forces also affect Banks (Njogo, 2012). The Economy of the country may also be a factor in the low customer deposit and free flow of cash while Inflation and Interest rate charged by the Banks may have also discourage credit advances of many would be creditors. The tenor and conditions of accessing such credit on the part of borrowers were difficult (Kolapo, et al., 2012) while the Banks consider the performance tendencies of such credit facilities. Infact (Hassan, 2003) stated that the operational review of many commercial Banks indicated that collaterals may depreciate and may not be liquid enough to offset debt in case of default. The profitability do not always have to be regular or steady as many Banks may have committed funds to huge long-term investments that may not yield immediately, hence the benefits may surge the profits cumulatively during the fiscal years ahead.

Table 4: International Banks and National Banks Compared

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
NPL	INTERNATIONAL BANKS	30	5.0920	2.50530	.45740
	NATIONAL BANKS	20	17.6945	26.45807	5.91620
ROA	INTERNATIONAL BANKS	30	1.5983	1.28741	.23505
	NATIONAL BANKS	20	1.2060	2.31933	.51862

Source: Authors' Computation 2020

The international Banks had a mean NPL of 5.1% while the National Banks in this study had mean NPL of 17% which was 12% higher than CBN's financial advice of 5%. However, the average ROA reported by The

International Banks were only 0.4% apart. This is relative because the net assets of the International Banks have hit trillions of naira which means 1.6% return from such denominator is far larger than 10% of assets in billions of naira.

Table 5: Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper
<b>NPL</b>	Equal variances assumed	20.509	.000	-2.605	48	.012	-12.60250	4.83810	-22.33016	-2.87484	
	Equal variances not assumed			-2.124	19.227	.047	-12.60250	5.93386	-25.01228	-1.9272	
<b>ROA</b>	Equal variances assumed	4.317	.043	.768	48	.446	.39233	.51077	-.63464	1.41931	
	Equal variances not assumed			.689	26.864	.497	.39233	.56940	-.77625	1.56092	

Source: Authors' Computation 2020

The NPL of the International Banks were significantly different ( $p < 0.05$ ) from that of the National Banks. This implies that the level and strategies of credit risk management adopted by the two groups of Banks were not similar to a significant extent. The ROA of the two groups of Banks was found to be relatively similar i.e not significant different ( $p > 0.05$ ).

## ANOVA AMONG BANKS

		Sum of Squares	Df	Mean Square	F	Sig.
<b>NPL</b>	Between Groups	3854.620	4	963.655	3.760	.010
	Within Groups	11533.837	45	256.307		
	Total	15388.457	49			
	Between Groups	46.675	4	11.669	4.980	.002

ROA	Within Groups	105.444	45	2.343		
	Total	152.119	49			

Source: Authors' Computation 2020

The independent (NPL) and dependent variables (ROA) were compared across the five sampled Banks, the two variables were significantly different ( $p < 0.05$ ) from one Bank to another. This goes further to show that the difference noticed in the descriptive outcome were not just due to other related variables. The implication of this is that the credit risk level or status of the Banks were not similar.

### Test of Hypotheses

#### Test of Association between NPL and ROA

Ho (1): There is no significant association between credit risk level and profitability of commercial banks in Nigeria.

Table 7: ECOBANK

		ROA
NPL	Pearson Correlation	.117
	Sig. (2-tailed)	.748

Source: Authors' Computation 2020

The association between NPL and ROA of ECOBANK was not significant ( $p > 0.05$ ). This implies that the NPL may not be sufficient to be a correlate of ROA. Hence the null hypothesis was not rejected and it could be reliably concluded at 5% error probability that the level of credit risk status of the commercial Banks was not associated significantly with the level of profitability. In fact the trend analysis in the charts presented earlier had shown where NPL was high and yet the ROA was substantively not affected.

Table 8: UBA

		ROA
NPL	Pearson Correlation	.010
	Sig. (2-tailed)	.978
	N	10

The association between NPL and ROA of UBA was not significant ( $p > 0.05$ ). This implies that the NPL may not be sufficient to be a significant



correlate of ROA. Hence the null hypothesis was not rejected and it could be reliably concluded at 5% error probability that the level of credit risk status of UBA was not associated significantly with the level of profitability. In fact the trend analysis in the charts presented earlier had shown where NPL was high and yet the ROA was substantively not affected.

**Table 9: ZENITH BANK**

		ROA
NPL	Pearson Correlation	-.796**
	Sig. (2-tailed)	.003
	N	10

Source: Authors' Computation 2020

The association between NPL and ROA of ZENITH BANK was significant ( $p < 0.05$ ). This implies that the NPL was sufficient enough to be a significant correlate of ROA. Hence the null hypothesis was rejected and it could be reliably concluded at 99% confidence level that the level of credit risk status of UBA was associated significantly with the level of profitability recorded in ZENITH BANK. However, the coefficient of correlation/correlation was strong ( $c = \text{absolute } 0.80$ ) which implies that this significant association may be reflective of 80% of the fiscal years studied from the Bank. The association was also found to be inverse which means that in ZENITH BANK, a substantial increase in NPL had been significantly associated with a reduction in ROA. The higher the NPL, the lower the ROA.

**Table 10: UNITY BANK**

		ROA
NPL	Pearson Correlation	-.206
	Sig. (2-tailed)	.284
	N	10

Source: Authors' Computation 2020

The association between NPL and ROA of UNITY BANK was not significant ( $p > 0.05$ ). This implies that the NPL may not be sufficient to be a significant correlate of ROA. Hence the null hypothesis was not rejected and it could be reliably concluded at 5% error probability that the level of credit risk status of UNITY BANK was not associated significantly with the level of

profitability. In fact the trend analysis in the charts presented earlier had shown where NPL was high and yet the ROA was substantively not affected.

**Table 11: WEMA BANK**

		ROA
NPL	Pearson Correlation	-.323
	Sig. (2-tailed)	.181
	N	10

Source: Authors' Computation 2020

The association between NPL and ROA of WEMA BANK was not significant ( $p > 0.05$ ). This implies that the NPL may not be sufficient to be a significant correlate of ROA. Hence the null hypothesis was not rejected and it could be reliably concluded at 5% error probability that the level of credit risk status of WEMA BANK was not associated significantly with the level of profitability. In fact the trend analysis in the charts presented earlier had shown where NPL was high and yet the ROA was substantively not affected.

**The effect of NPL (a measure of credit risk level) on ROA (a measure of profitability) among Nigeria commercial Banks**

Ho (2): credit risks do not have significant effect on profitability of commercial banks in Nigeria.

**Table 12: ECO BANK**

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					
					R Square Change	F Change	df1	df2	Sig. Change	F
1	.117 <sup>a</sup>	.014	-.110	.89488	.014	.111	1	8	.748	

a. PrePredictors: (Constant), NPL

Source: Authors' Computation 2020

The NPL ratio did not significantly affect ( $p > 0.05$ ) the ROA. This implies that for ECOBANK, the level of NPL does not significantly determine or predict ROA. Hence the null hypothesis was not rejected and the statistical conclusion was drawn that the credit risk in ECOBANK does not significantly affect the annual profitability of the Bank.

**Table 13: UBA  
Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.010 <sup>a</sup>	.000	-.125	1.44125	.000	.001	1	8	.978

**a. Predictors: (Constant), NPL**

Source: Authors' Computation 2020

The NPL ratio did not significantly affect ( $p > 0.05$ ) the ROA. This implies that for UBA, the level of NPL does not significantly determine or predict ROA. Hence the null hypothesis was not rejected and the statistical conclusion was drawn that the credit risk in UBA does not significantly affect the annual profitability of the Bank.

**Table 14: ZENITH BANK  
Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.796 <sup>a</sup>	.633	.587	.62397	.633	13.812	1	8	.006

**a. Predictors: (Constant), NPL**

Source: Authors' Computation 2020

The NPL ratio significantly affected ( $p > 0.05$ ) the ROA. This implies that for ZENITH Bank, the level of NPL significantly determined or predicted the ROA. Hence the null hypothesis was rejected and the statistical conclusion was drawn that the credit risk in ZENITH Bank had significant effect on the annual profitability of the Bank. The coefficient of regression,  $R = 0.796$ , which implies that the effect of credit risk is strong on the ROA.

**Table 15: UNITY BANK  
Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.206 <sup>a</sup>	.042	-.077	2.34734	.042	.354	1	8	.568

**a. Predictors: (Constant), NPL**

Source: Authors' Computation 2020

The NPL ratio did not significantly affect ( $p > 0.05$ ) the ROA. This implies that for UNITY BANK the level of NPL does not significantly determine or predict ROA. Hence the null hypothesis was not rejected and the statistical conclusion was drawn that the credit risk in UNITY BANK does not significantly affect the annual profitability of the Bank.

**Table 16: WEMA BANK  
Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.323 <sup>a</sup>	.104	-.008	1.76461	.104	.930	1	8	.363

**a. Predictors: (Constant), NPL**

Source: Authors' Computation 2020

The NPL ratio did not significantly affect ( $p > 0.05$ ) the ROA. This implies that for WEMA BANK the level of NPL does not significantly determine or predict ROA. Hence the null hypothesis was not rejected and the statistical conclusion was drawn that the credit risk in WEMA BANK does not significantly affect the annual profitability of the Bank. Therefore other factors and indicators were likely to be the predictor of ROA.

## CONCLUSION AND RECOMMENDATION

### Conclusion

As already presented in the finding of this study, the credit risk of the commercial Banks studied did not significantly affect their profitability per fiscal year except for Zenith Bank. The International Banks performed better in terms of credit risk management and profitability between the fiscal years of 2009-2018. The three International Banks were significantly different in their credit risk and their level of profitability with the National Banks performing least. The independent (NPL) and dependent variables (ROA) were compared across the five sampled Banks, the two variables were significantly different from one another.

## Recommendation

Based on the findings of this study, the following were recommended;

1. The Commercial Banks should ensure that major risk assessment is carried out and not waived for any creditor.
2. Each Bank's management should endeavor to operate credits to borrowers with caution
3. Credit accessibility is important when used within optimum limit, hence the Interest rate should be reduced to single digit by the Central Bank of Nigeria so that the borrowers may find it easier to service their loans.
4. Other probable determinants of credit performance and profitability should be considered and modeled by the Banks in order to expose the major predictors of their ROA.
5. The major potential credit liabilities should be insured by both the borrower and lending commercial Banks.
6. To avoid a backlog of toxic loans, the lender should improve their post disbursement support in order to increase the chance of timely debt servicing by the borrowers.
7. The government should endeavor to create economic policies that can aid and support the profitability of businesses as this would encourage the citizenry and businesses to seek loans they are sure of being capable to repay.

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