

The Impact of Credit Risk Management on Deposit Money Banks Performance in Nigeria

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Abstract

This paper investigated the impact of credit risk management on the performance of commercial banks in Nigeria. Financial reports of seven commercial banking firms were used to analyze for seven years (2005 – 2011). The panel regression model was employed for the estimation of the model. In the model, Return on Equity (ROE) and Return on Asset (ROA) were used as the performance indicators while Non-Performing Loans (NPL) and Capital Adequacy Ratio (CAR) as credit risk management indicators. The findings revealed that credit risk management has a significant impact on the profitability of commercial banks' in Nigeria.

Key Words: Commercial Bank, Risk, Management, Resources, Assessment

Introduction

The health of financial system has important role in the country (Das and Ghosh, 2007) as its failure can disrupt economic development of the country. Company's financial performance is ability to generate new resources, from day to day operation over a given period of time and being gauged by net income and cash from operation. The bank performance measure can be divided into traditional measures and market based measures (Aktan and Bulut, 2008). New banking risk management techniques emerged in early 1990's. To be able to manage the different types of risk one has to define them before one can manage them. Credit risk, interest rate risk, liquidity risk, market risk, foreign exchange risk and solvency risk are the most applicable risk to the banks. According to Appa (1996), Risk management is the human activity which integrates recognition of risk, risk assessment, developing strategies to manage it, and mitigation of risk using managerial resources, but credit risk is the risk of loss due to debtor's non-payment of a loan or other line of credit (either the principal or interest or both) (Campbell, 2007). A commercial bank is an institution that provides financial services, including issuing money in various forms, receiving deposits of money, lending money and processing transactions and the creating of credit (Campbell, 2007).

The importance of credit risk management to banks cannot be overemphasis and it also forms an integral part of the loan process. Credit risk management maximizes bank risk, adjusted risk rate of return by maintaining credit risk exposure with view to shielding the bank from the adverse effects of credit risk. It is expedient to then ask; what is the relationship between performance (ROE, ROA) and the non-performing loans of banks in Nigeria? Is there any relationship between performance (ROE, ROA) and the capital adequately ratio of banks in Nigeria.

Therefore this study seeks to investigate whether investment in credit risk management is viable to the banks, and to investigate the impact of credit risk management on commercial banks' performance in Nigeria.

Objectives of the Study

- (i) To examine the relationship between performance (ROE, ROA) and the non-performing loans of banks in Nigeria.
- (ii) To establish the relationship between performance (ROE, ROA) and capital adequacy ratio of banks in Nigeria.

Hypotheses

H₀₁: There is no significant relationship between performance and the non-performing loans of banks in

Nigeria.

Ho2: There is no significant relationship between performance and the credit adequacy ratio of banks in Nigeria.

Brief review of related Literature

Credit risk is found in all activities in which success depends on counterparty, issues or borrower performance. Credit risk management arises any time bank funds are extended, committed, invested, or otherwise exposed through actual or implied contractual agreements, whether reflected on or off the balance sheet. Thus risk is determined by factor extraneous to the bank such as general unemployment levels, changing socio-economic conditions, debtors' attitudes and political issues. Credit risk according to Basel Committee of Banking Supervision (2001) and Gostineau (1992) is the possibility of losing the outstanding loan partially or totally, due to credit events (default risk), failure to pay a due obligation, repudiation/moratorium or credit rating change and restructure. Basel Committee on Banking Supervision (1999) defined credit risk as the potential that a bank borrower or counterparty will fail to meet its obligation in accordance with agreed terms. Heffernan (1996), observed that credit risk as the risk that an asset or a loan becomes irrecoverable in the case of outright default, or the risk of delay in the servicing of the loan. Bessis (2002) opined that Credit risk is critical since the

default of a small number of important customers can generate large losses, which can lead to insolvency.

Basel Committee on Banking

Supervision (1999) observed that banks are increasingly facing credit risk (or counterparty risk) in various financial instruments other than loans, including acceptances, interbank transactions, trade financing foreign exchange transactions, financial futures, swaps, bonds, equities, options, and in the extension of commitments and guarantees, and the settlement of transaction. Anthony (1997) asserts that credit risk arises from non-performance by a borrower, and this may arise from either an inability or an unwillingness to perform in the pre-committed contracted manner. Brownbrigde (1998) claimed that the single biggest contributor to the bad loans of many of the failed local banks was insider lending. He further observed that the second major factor contributing to bank failure were the high interest rates charged to borrowers operating in the high-risk. The most profound impact of high non-performing loans in banks portfolio is reduction in the bank profitability especially when it comes to disposals.

Basel Committee on Banking Supervision (1982) stated that lending involves a number of risks such as funding risk, interest rate risk, clearing

risk and foreign exchange risk. Basel Committee on Banking Supervision (2006) observed that historical experience shows that concentration of credit risk in asset portfolios has been one of the major causes of bank distress. According to Robert and Gary (1994), the most obvious characteristics of failed banks is not poor operating efficiency, however, but an increased volume of non-performing loans and non-performing loans in failed banks have typically been associated with regional macroeconomic problems. DeYoung and Whalen (1994) observed that the US Office of the Comptroller of the Currency found the difference between the failed banks and those that remained healthy or recovered from problems was the caliber of management. Superior managers not only run their banks in a cost efficient fashion, and thus generate large profits relative to their peers, but also impose better loan underwriting and monitoring standards than peers which result to better credit quality.

Koehn and Santomero (1980), Kim and Santomero (1988) and Athanasoglou et al. (2005), suggested that bank risk taking has pervasive effects on bank profits and safety. Bobakovia (2003) asserts that the profitability of a bank depends on its ability to foresee, avoid and monitor risk, possible to cover losses brought about by risk arisen and it also has the net effect of increasing the ratio of

substandard credits in the bank's credit portfolio and decreasing the bank's profitability. The banks supervisors are well aware of this problem, it is however very difficult to persuade bank managers to follow more prudent credit policies during an economic upturn, especially in a highly competitive environment. The conservative managers might find market pressure for higher profits very difficult to overcome. Philip (1994) observed that the deregulation of the financial system in Nigeria embarked upon from 1986 allowed the influx of banks into the banking industry, as a result of alternative interest rate on deposits and loans, credits were given out indiscriminately without proper credit appraisal. These inappropriate credit appraisal systems make banks to have non-performing loans that exceed 50 per cent of the bank's loan portfolio. Sanusi (2002) observed that the increased number of banks overstretched their existing human resources capacity which resulted into many problems such as poor credit appraisal system, financial crimes, accumulation of poor asset quality among others and this led to increase in the number of distressed banks. Other factors identified are bad management, adverse ownership influences and other forms of insider abuses coupled with political considerations and prolonged court process especially as regards debts recovery.

According to Umoh (2002) few banks are able to withstand a persistent run, even in the presence of a good lender of last resort as depositors take out their funds, the bank hemorrhages and in the absence of liquidity support, the bank is forced eventually to close its doors. Thus, the risks faced by banks are endogenous, associated with the nature of banking business itself, whilst others are exogenous to the banking system.

Owojori et al. (2011) highlighted that available statistics from the liquidated banks clearly showed that inability to collect loans and advances extended to customers and directors or companies related to directors/managers was a major contributor to the distress of the liquidated banks. At the height of the distress in 1995, when 60 out of the 115 operating banks were distressed, the ratio of the distressed banks' non-performing loans and leases to their total loans and leases was 67% (Central Bank of Nigeria, 1995). The ratio deteriorated to 79% in 1996; to 82% in 1997; and by December 2002, the licenses of 35 of the distressed banks had been revoked. In 2003, only one bank (Peak Merchant Bank) was closed. Therefore, the number of banks revoked increased, following their failure to meet the minimum re-capitalization directive of the CBN. At the time, the banking licenses were revoked, some of the banks had ratios of performing credits that were less than

10% of loan portfolios. In 2000 for instance, the ratio of non-performing loans to total loans of the industry had improved to 21.5% and as at the end of 2001, the ratio stood at 16.9%. It deteriorated to 21.59% in 2003, and in 2004, the ratio was 23.08% (NDIC Annual Reports – various years).

In a collaborative study by the CBN and the Nigeria Deposit Insurance Corporation (NDIC) in 1995, operators of financial institutions confirmed that bad loans and advances contributed most of the distress (Central Bank of Nigeria, 1990). In their assessment of factor responsible for the distress, the operations ranked bad loans and advances first, with a contribution of 19.5%.

In 1990, the CBN issued the circular on capital which relate bank's capital requirement to risk-weighted assets directing the banks to maintain a minimum of 7.25 percent of risk-weighted assets as capital; to hold at least 50 percent of total components of capital and reserves; and to maintain the ratio of capital to total risk-weighted assets as a minimum of 8 percent from January, 1992. In spite these measures and reforms listed in legal documents such as CBN Act No. 24 of 1991 and banks and other financial institutions (BOFIA) Act No. 25 of 1991 as amended, the number of technically insolvent banks increased significantly during the 1990s.

Athanasoglou et al, 2005 observed that the role of bank remains central in financing economic activity and its effectiveness could exert positive impact on overall economy as a sound and profitable banking sector is better able to withstand negative shocks and contribute to the stability of the financial system. Bank performance determinants have attracted the interest of academic research as well as of bank management. Studies dealing with internal determinants employ variables such as size, capital, credit risk management and expenses management. The need for risk management in the banking sector is inherent in the nature of the banking business. Poor asset quality and low levels of liquidity are the two major causes of bank failures and represented as the key risk sources in terms of credit and liquidity risk and attracted great attention from researchers to examine the their impact on bank profitability.

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 this risk to a greater extent than any other risk (Gieseche, 2004). Increases in credit risk will raise the marginal cost of debt and equity, which in turn increases the cost of funds for the bank (Basel Committee on Banking Supervision, 1999). Researchers employed a number of ratios to measure credit risk. The ratio

of Loan Loss Reserves to Gross Loan (LOSRES) is a measure of bank's asset quality that indicates how much of the total portfolio has been provided for but not charged off. Indicator shows that the higher the ratio the poorer the quality and therefore the higher the risk of the loan portfolio will be. In addition, Loan loss provisioning as a share of net interest income (LOSRENI) is another measure of credit quality, which indicates high credit quality by showing low figures. In the studies of cross countries analysis, it also could reflect the difference in provisioning regulations.

Assessing the impact of loan activities on bank risk, Bourke (1989) uses the ratio of bank loans to assets (LTA). The reason to do so is because bank loans are relatively illiquid and subject to higher default risk than other bank asset, implying a positive relationship between LTA and the risk measures. In contrast, relative improvements in credit risk management strategies might suggest that LTA is negatively related to bank risk measures (Altunbas, 2005). Bourke (1989) reported the effects of credit risk on profitability appear clearly negative. This result may be explained by taking into account the fact that the more financial institutions are exposed to high risk loans, the higher is the accumulation of unpaid loans, implying that these loan losses have produced lower returns to

many commercial banks (Miller and Noulas, 1997; Kolapo et al., 2012). The finding of Felix and Claudine (2008) also shows that return on equity (ROE) and return on asset (ROA) all indicating profitability was negatively related to the ratio of non-performing loan to total loan NPL/TL of financial institutions therefore decreases profitability.

Basel Committee on Banking Supervision (1999) asserts that loans are the largest and most obvious source of credit risk, while others are found on the various activities that the bank involved itself with. However, every bank needs to identify measure, monitor and control credit risk and also determine how credit risks could be lowered. This means that a bank should hold adequate capital against these risks and that they are adequately compensated for risks incurred. This is stipulated in Basel II, which regulates banks about how much capital they need to put aside to guide against these types of financial and operational risks they face. In response to this, commercial banks have almost universally embarked upon an upgrading of their risk management and control systems. Also, it is in the realization of the consequence to deteriorating loan quality on profitability of the banking sector and the economy at larger that this research work is motivated.

Methodology

The study is both historical and descriptive as it seeks to describe the pattern of credit risk of Nigerian banks in the past, also to empirically examine the quantitative impact of credit risk management on the commercial banks performance in Nigeria over the period of years (2005 – 2011). A non-profitability method in the form of judgment sampling technique was employed. The sample size is based on the following criteria:

- (i) The availability of consistent financial reports and accounts.
- (ii) The seven banks relatively account for over sixty percent of the total deposit liability in the industry. As at December 2011, the total deposit in the industry was about N10.99 trillion, out of which the seven selected banks accounted for N7.06 trillion, representing 64.24% of the total deposit.
- (iii) The selected banks are listed and quoted on the Nigeria Stock Exchange (NSE).
- (iv) The banks have a large customer base.

Seven out of twenty banks in Nigeria were selected; this constitutes 35 percent of the total population. The banks are Access Bank PLC, EcoBank Nigeria PLC, First Bank Nigeria PLC, Guaranty Trust Bank PLC, Union Bank of Nigeria PLC, United Bank of Africa PLC and Zenith Bank PLC and data collected are for the

period of 2005–2011 from the financial reports and accounts of the chosen banks. Time-series and cross section of data on loans and advances, non-performing loan, total deposits, profit after tax and total assets of the sampled banks were used. In the study, the ratio of non-performing loan to loan and advances; ratio of total loan and advances to total deposits; the capital adequacy ratio is measured as shareholders fund to total assets while the ratio of profit after tax to total equity known as return on equity (ROE); and the ratio of profit before tax to total asset known as return on asset (ROA) indicates performance. With the seven years financial reports and accounts of the seven banks, we had a total of 49 (7 by 7) observation for the analysis. The pooled data was analyzed using panel regression model. The regression output

was obtained through the use of SPSS 15.

The panel regression model used takes the form of:

$$P_{it}(\text{ROE, ROA}) = F(Y_{it}, Z_{it}) + e_{it}$$

Where P_{it} represent performance of bank i at time t . Y_{it} is the vector of variable characteristic of banks i at time t . Z_{it} represent features of the commercial bank. e_{it} is the error term.

The empirical framework for the investigation of the link between credit risk management practices and commercial banks' performance is given as follows:

$$P_{it} = \beta_0 + \beta_1 \text{NPL}_{it} + \beta_2 \text{CAR}_{it} + e_{it}$$

The meanings of the variable in the empirical model have been explained in the table below.

<u>Abbreviation</u>	<u>Variable</u>	<u>Meaning of Variables</u>
P _{it}	ROE (Return on Equity)	ROE is profit after tax divided by equity. It measures the performance of bank i at time t .
	ROA (Return on Asset)	ROA is profit before tax divided by total assets. It measures the performance of bank i at time t .
NLP _{it}	NPL (Non-performing Loan)	NPL is the total losses of commercial banks i at time t .
CAR _{it} measured as	CAR (Capital Adequacy Ratio)	CAR is regulatory capital requirement which is shareholders' fund divided by total assets

Sources: Authors Assumptions

Reliability of the Research Variables

Return on Equity (ROE) represents a dependent variable and it measures the return on shareholders' investment in

the bank. ROE was used as the indicator of the profitability in the regression analysis because ROE along with ROA has been widely used in earlier research (Altunbas, 2005). It shows the effectiveness of management in the

utilization of the funds contributed by shareholders of a rural bank.

Return on Asset (ROA) is a dependent variable and it measures the bank profit before interest and taxes (PBIT) against its total net assets.

Non-Performing Loans (NPL) is an independent variable and it is chosen because it is an indicator of credit risk management. NPL, in particular, indicates how banks manage their credit risk because it defines the proportion of loan losses amount in relation to Total Loan amount (Hosna et al., 2009). We expected non-performing loans to have an adverse relationship with RCBs performing.

Capital Adequacy Ratio (CAR) is also an independent variable and is chosen because it is the core measure of a bank's financial strength from a regulator's point of view. Capital adequacy ratio consists of the types of financial capital considered as the most reliable and liquid, primarily shareholders' equity. Bank with good Capital Adequacy Ratio have good profitability. With good capital requirement, commercial banks are able to absorb loans that have gone bad.

Data Presentation

The table below gives a descriptive summary of Net profit, Non-performing loans (NPL) and Capital Adequacy Ratio (CAR) of commercial banks from 49 observations covering 7 years period.

Table-2. Descriptive Statistics

Variables	Observatio n	Mean	Standard deviation	Minimum	Maximum
Net profit	49	301578	332550.5	- 147205.3	1740459
NPL	49	25669.99	28104.31	478.9081	130915.8
CAR	49	0.234835	0.2335449	- 0.2858362	0.160355

Source: Authors Computation through SPSS 15

From the table it is revealed that, over the 7 years period, NPL has a minimum value of 478.9081 and maximum of 130915.8 with average (Mean) of 25669.99 representing huge loan default by customers. NPL has a percentage change of 27236.31% (130915.8 -

478.9081/478.9081 x 100). The underlying of this huge loan loss by commercial banks is poor credit risk management which is a reflection of the increasing NPL over the years.

Capital Adequacy is very important for

the solvency and profitability of banks. This is because the business of banking is risky due to the possibility that loans may not be paid back leading to financial losses to the bank. Banks are therefore required to have adequate capital, not only to remain solvent, but to avoid the failure of the financial system. The CBN require commercial banks maintain a 15% capital adequacy ratio.

CAR has a negative minimum value of – 0.2858362 and maximum of 0.160355 with an average (mean) of 0.234853% equity. Although this is above the 15% statutory requirement it indicates that the commercial banks are highly geared. That is, they rely more on the funds from long term liabilities to finance their assets. Such a situation may lead to bankruptcy in the commercial banking industry.

The Panel Data Regression Results

Panel data analysis normally involved two main models, and these are: Fixed effect and Random effect.

Fixed effect model is used when you want to control omitted variables that differ between cases but are constant over time (Samy, 2003). This model helps to track changes in the variables over time to estimate the effect of independent

variables on dependents variables.

The main technique used for analysis of panel data is fixed effect. Statistically, fixed effect is always a reasonable thing to do with panel data because they give consistent result but may not be the most efficient model to run.

The random effect is used where some omitted variables may be constant over time but vary between cases, others may be fixed between cases but vary over time. To compare between fixed effect and random effect the Hausman test is used. Hausman Test compares fixed effect with random effect in SPSS. Running a Hausman specification test at five (5) percent level enables the researcher to choose between fixed and random models.

The Hausman Test evaluates the Null hypothesis that the coefficient estimated by the random effect estimator is the same as the ones estimated by the constant fixed effect estimator. If the Hausman test is insignificant (Prob> Chi2 greater than .05), then the fixed model will be used (Torres-Reyna, 2007). In this study, both the fixed and random effects gave the same result and thus the fixed effect was used in the analysis.

Table-3.Panel Regression Results (Fixed Effect)

Net Profit	Coefficient	Standard Error	T	P>/t/	T	P>/t/
NPL	9521.82	.8011396	8.74	0.000	8.74	0.000
CAR	7.0048	90125.3	1.06	0.294	1.06	0.294
CONS	99239.06	34477.84	2.88	0.007	2.88	0.007
Prob>F=0.000 Within = 0.6733 Between = 0.3440 Overall = 0.4543						

Source: Authors computation through SPSS 15

Relationship between Non-Performing Loans (NPLs) and Commercial Bank Performance

Non-performing loans are used to measure the positive and fitness of a bank's credit risk management. Surprisingly, NPL is positive and statistically significant at 1 percent significance level. This finding is unusual because, theoretically NPL is expected to have an inverse relationship with a bank's profitability. Our result however, shows a strong positive association between non-performing loans and commercial banks performance.

The positive relationship between non-performing loans and profitability of banks indicates that, even though there is huge loan default, non-performing loans are increasing proportionately to profitability. This implies that, commercial banks do not have effective institutional measures to deal with credit risk management. The banks shift the cost on loan default in form of higher interest rate on loans to other customers.

Higher interest margin charged on loan by commercial banks due to weak credit risk management practices prevent microenterprises from accessing loans. Such a situation prevents business expansion and industrialization which underpins the economic growth and development.

The result in this study lends support to a similar study by Hosna *et al.* (2009). They indicated that since each bank has different characteristics and risk management policies, credit risk management affect performance on different levels in each bank. NPL fairly affect profitability of some banks and this is a result of shifting cost on loan default to other customers. Nair and Fissha (2010) also

discovered high levels of non-performing loans among commercial banks and indicated the danger that this poses to the industry.

Capital Adequacy Ratio (CAR) and Commercial Bank Performance

It is theoretically acceptable that banks with good capital adequacy ratio have a good profitability. A bank with a strong capital adequacy is also able to absorb possible loan losses and thus avoids bank 'run', insolvency and failure. Our result indicates that, although capital adequacy ratio is positive, it is not significant. The insignificant impact of the level of CAR on commercial banks' profitability seems to confirm the directive of the Central Bank of Nigeria (CBN) to commercial banks to increase their capital from N25 billion.

Conclusion and Recommendations

The general objective of the study was to establish the impact of credit risk management on the commercial banks performance and the specific objectives were to examine the relationship between performance and the non-performing loan of banks in Nigeria, to establish the relationship between performance and the capital adequacy of banks in Nigeria. The findings indicate that the sampled have poor credit risk management practices; hence the high levels of the non-performing loans in their loans portfolios. Despite the high levels of the NPLs, their profit levels keep rising as an indication of the transfer of the loan losses to other customers in the form of large interest margins.

The changing of higher rates is likely to discourage microenterprises from accessing loans from commercial banks. Those who are

able take up such loans may also find it very difficult to repay because of the exorbitant interest rates. This situation has the tendency of creating '*loan-losses high-interest cycle*' phenomenon. Commercial banks are thus recommended to establish sound and competent credit risk management units which are run by best practices in risk management such as the institution of a clear loan policy and the adherence to underwriting authority and limits. Staffs of commercial banks credit units such as project and advance managers, credit/loan officers and field officers perform a range of functions from project appraisals through credit disbursement, loan monitoring to loans collection. Thus issues pertaining to their selection, training, placement, job evaluation, discipline, and remuneration need to be tackled effectively.

The study also revealed that commercial banks with higher capital adequacy ratio can better advance more loans and absorb credit losses whenever they crop up and therefore record better profitability. The regulatory authority should pay more attention to banks' compliance to relevant provisions of the Bank and other Financial Institutions Act 1991 and prudential guidelines.

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