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BANK RISK AND PROFITABILITY OF LISTED DEPOSIT MONEY BANKS IN NIGERIA

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Abstract

A sound conceived lending policies and careful credit practices are essential for a bank if it is to perform its credit creating functions effectively and efficiently and at the same time minimize or eliminate the risk inherent in any extension of credit. This study examines credit risk, liquidity risk and profitability of listed deposit Money Banks in Nigeria. Profitability was used to represent return on assets while credit risk and liquidity risk were used as proxy for bank risk for the period 2011-2015. A Panel of 125 observations was used of secondary data extracted audited financial statements of the sampled banks. GLS was adopted using multiple regression as a technique of data analysis after controlling for

fixed/random effects. The result shows a significant negative relationship between credit risk and profitability. On the other hand, liquidity risk is found to be positive and insignificant in predicting profitability. The hausman specification test shows a significant value of 1% which means that the panel result after controlling for fixed best suits the population as the random effect hypothesis was rejected. What left to be done is for regulators, managers and other stake holders to checkmate and control credit risk as it has a negative significant impact on profitability of listed deposit money banks in Nigeria.

Keywords: *Credit risk, Liquidity risk, profitability Nigeria Deposit Money Banks*

1. Introduction

Banks as financial intermediaries are very significant in the economy of every nation. The relevance of banks to the economy lies primarily in their ability to mobilize deposits and grant credit to various economic actors. Lending operations are core banking activities and the most profitable asset of credit institutions. In many markets, banks have to operate in the economic environment that is characterized by the existence of obstacles to good credit management. Where credit is not properly channeled, controlled and administered, it leads to a devastating effect on the banks, reducing its performance, profitability and further into bank distress and failure (Berger & Christa, 2009) According to Cai and Anjan (2008), credit administration is the most important function of the banking industry. It is the most risky and difficult, and at the same time most profitable function performed by banks. The key strategic value a bank adds has always depended upon its ability to manage credit risk. This cannot be properly done without an effective risk assessment, control and follow up strategy. Risk increase when credit principles are violated .Sound banking practices require that bank management put in place standards for appraising and approving individual credit application to ensure that loans granted are repaid.

More so, due to poor credit administration caused by loopholes and violation in risk assessment and control techniques, bad and doubted debts still claim a bulk charge on bank performance causing many banks to witness institutionalized distress and some, total unexpected collapse. Since lending carries a reasonable portion of resource exposure of deposit Money Banks in Nigeria, the ability of a bank to generate much profit is largely a function of effective and efficient management of its lending portfolio. The impact of liquidity position in management of banks have remained fascinating and intriguing, though very

elusive in the process of investment analysis vis-à-vis bank portfolio management. There appears to be an interminable argument in the literature over the years on the meaning, role and determinants of liquidity and credit management. Acharya and Naqvi (2012) refer to liquidity as the speed and certainty with which an asset can be converted back into cash whenever the asset holder desires. A liquid bank stores enough liquid assets and cash together with the ability to raise funds quickly from other sources to enable it meet its payment obligations and financial commitment in a timely manner. Ngwu (2006) views liquidity management as the act of storing enough funds and raising funds quickly from the market to satisfy depositors, loan customers and other parties with a view to maintaining public confidence.

In spite of the measures put in place and aimed at protecting depositors and other public interest, the incidence of bank distress and failure has been on the increase in deposit money banks in Nigeria. This is as a result of increased probability of bank default, reduced performance and bulk charge against profits emanating from ineffective credit and liquidity risk management. Hence, for a bank to be viable and profitable; there must be strategic credit and liquidity risk management policies formulated and implemented in full. The tools for effective implementation of these policies will be anchored on the philosophy and mission of the bank, the overall credit risk strategy, and the credit policies adopted in the realization of strategic goals and objectives of the banks as well as the expansion prospects of such bank. The effective management of credit and liquidity risks is inextricably linked to the development of banking technology, which will enable the bank to increase its speed of decision making and at the same time reduce the cost of controlling banking risk. The development of these banking technologies that reduce operating costs and cost of risk control will inevitably yield greater earnings and returns for the bank in terms of contribution and profitability.

With the increase of credit transactions and loan customers in the nation's economy, credit expansion has been witnessed in the Nigerian financial sector. The trend of events in this sector shows that bank deposit-loan ratio increases daily as the economy grows daily. But credit risk has been on the increase with an increase in loan demands. Traditionally, credit was made available in association with one's financial status, business sustainability, reputation and liquidity, but the unstable situation of the Nigerian financial market makes it difficult for banks to rely on the aforementioned determinants. Business conditions are often unpredictable and can lead to changes in the borrowers' financial position and affects their ability to repay the loans at the date of maturity. With the above

scenario, the bank faces a credit risk of losing part or the entire loan including the interest receivable on such loans. This negatively affects the bank and reduces its' financial strength to meet its' financial obligations as they fall due. As these conditions remain unchecked, the liquidity of the bank is also threatened. Liquidity is considered as the success of a bank, whose inefficient management constitutes a huge problem to both banks and the economy at large. The far reacting consequences of poor credit and liquidity management apart from decline in profit include loss of confidence in the banking industry which will have a negative effect on the capital market and the Nation's economy at large. The study choose this risk because these two risk are sensitive to banking operation and the economy at large and their improper management can lead to disaster not only in the banking sector but the nation as a whole.

Despite the importance of credit and liquidity risk management to bank survival, only few studies empirically analyzed the relationship between credit risk and liquidity risk on financial performance on a broad range and its different dimensions in the Nigerian banking industry. As a consequence, many important questions regarding this topic remain unanswered. What is the general relationship between credit and liquidity risk in banks? Do they jointly influence bank probability of default? What impact do these consolidated risks have on bank profitability? And if so, what measures should be adopted to manage both risks together? In view of the above, this study is centered on the profitable, efficient and viable remaking of deposit money banks in Nigeria within the matrix of the implementation of strategic and effective credit and liquidity management policies. To the best of our knowledge we have not come across any study that empirically study credit risk and liquidity risk on performance of deposit Money Banks in Nigeria in isolation, this study choose these two risks because they are the most crucial risk that Deposit Money Banks must monitor carefully in order to remain in business.

The study period is 2011-2015 because most previous studies did not cover the IFRS regime. In addition, the findings of previous studies were mix probably due to differences in methodology, data and techniques of analysis. For example, Dahiru and Muhammed (2015), Adebayo et al (2011) and Ajong et al (2014) found positive relationship between liquidity and performance whereas Ibe (2013), Soyemi et al (2014) found negative relationship between liquidity and performance. On other hand, Kargi (2011), Aforo and Joseph (2015), Haneet et al (2012), Nawaz et al (2012), Njanike (2009) and Funsho et al (2012) found negative relationship between credit risk and performance while Soyemi et al

(2014) found positive and significant relationship between credit risk and performance and these mix findings necessitated a study of this nature.

The main objective of this study is to examine the impact of credit and liquidity risks on profitability of listed Deposit Money Banks in Nigeria. The specific objectives are to:

- i. determine the effect of credit risk on profitability of listed Deposit Money Banks in Nigeria.
- ii. examine the effect of liquidity risk on the profitability of listed Deposit money Banks in Nigeria.
- iii. identify the effect of non-performing loans on the profitability of Listed Deposit Money Banks in Nigeria.

In line with the objectives of the study, the following hypotheses have been formulated:

- H0₁ Credit risk has no significant impact on the profitability of listed DMBs in Nigeria
- H0₂ Liquidity risk has no significant impact on the profitability of listed DMBs in Nigeria
- H0₃ Non-performing loans has no significant impact on the profitability of listed DMBs in Nigeria

2. Review of Related Literature

Credit risk is a serious threat to the performance of banks which when unchecked would lead to the total collapse of banks. Liquidity risk also act as a snare to banks with an unsound risk assessment and control policy. In the face of current events in the banking sector, these two risks cannot be ignored as they have considerable bearing on the performance and survival of banks (Coyle, 2000). In order to reduce the combined effect of these risks on the overall default risk of banks, there is need for efficient credit and liquidity management policies to be formulated and fully implemented in banks. Credit management policy is a comprehensive process that deals with identifying the target markets, credit extension; credit monitoring and identifying the proceeds. Credit management policy entails the mechanisms, standards and parameters that guide the bank officers in granting loans and managing the loan portfolio under the banking discipline. It is a set of guidelines designed to maximize cost associated with credit while maximizing benefits from it (McNaughton, 1996). Marsh (2008) further added that credit management policy assist financial institutions' credit

department in the extension of credit privileges governed by rules and guidelines established by top management.

According to Jhingan (2010), a bank needs a high degree of liquidity in its assets portfolio the liquidity of assets refers to the ease and certainty with which it can be turned into cash. The bank must hold a sufficient large proportion of its assets in the form of cash and liquid assets for the purpose of profitability. If the bank keeps liquidity the uppermost, its profit will be low. In the other hand, if it ignores liquidity and aims at earning more, it will be disastrous for it. This in managing is investment portfolio a bank must strike a balance between the objectives of liquidity and profitability. This balance must be achieved with a relatively high degree of safety.

Graham (1990) stated that profitability is always associated with performance and productivity, therefore true pure profit is the increase in wealth that an investor gets out making an investment taking into consideration all costs associated with it including the opportunity cost of capital. In the banking industry, every credit granted attracts an interest to the bank. Hence bank lending operations are risky but very profitable. In order to minimize these risks inherent in banking activities, there is need for efficient, effective and strategic credit and liquidity management, which will in turn accelerate the tempo of profits. Until the recently, lending has been the essence of deposit money banks and in fact, now, a colossal part of banks assets are in credit grants. As a result, the formulation and execution of a sound lending policy constitute part of the most vital responsibility of bank management.

Kargi (2011) opined that well-conceived lending policies and careful credit practices are essential for a bank if it is to perform its credit creating functions effectively and efficiently and at the same time minimize or eliminate the risk inherent in any extension of credit. It is important to note that the type and number of loans a bank will make as well as to whom it will grant credit and at what conditions and circumstances, requires a sound policy decision; adequate care must be taken in the process of arriving at such decisions. Thus, a meaningful periodic appraisal of lending and credit administration of a bank in the light of ever changing environmental conditions is necessary. He examined the impact of credit risk on profitability of Nigeria Deposit Money Banks for the period 5 years (2004 to 2008) data were analyzed using descriptive, correlation and regression techniques. The finding reveals that credit risk has a significant impact on the profitability of Nigeria Deposit Money Banks; he concludes that banks

Bank Risk and Profitability of Listed Deposit Money Banks in Nigeria

profitability is inversely influenced by the levels of loans and advances, non-performing loans and deposit thereby exposing them to great risk of illiquidity and distress. The study period stop at 2008 that is before the 2010 bank failure of oceanic bank, intercontinental bank and afri-bank in Nigeria, there is need to investigate similar study that would cover this period.

Similarly, Aforo and Joseph (2015) examined the impact of credit risk on the profitability of selected Deposit Money Bank in Nigeria for the period of 10 years (2003 to 2012), the study employs descriptive research design and proxy profitability with Return on Asset (ROA) while credit risk was proxy with loan loss provision to total loans and advances. The study adopted ordinary least square method of regression as a tool of analysis using SPSS 15 and finds that there is a negative and significant relationship between credit risk and profitability of banks in Nigeria. The study select only two banks (GTB and UBA) as such the findings of the study may not be applicable in other deposit money banks in Nigeria. Conversely, Ojong, Bassey and Awo (2014) examine the impact of credit risk and liquidity risk on financial performance of banks in Nigeria, the study use descriptive research design with a sample of 80 questionnaire distributed across 1st bank Nigeria plc, random sampling techniques was adopted and Pearson correlation was use, the study finds that credit risk has a relationship with performance at 88% while liquidity risk has a relationship with performance at 91%. The study findings may not be admissible in other banks because the questionnaire was administered within First Bank only.

Dahiru and Muhammad (2015) examined the impact of liquidity risk on the financial performance of Deposit Money Banks in Nigeria for the period of 9years (2005-2013); the study sample 11 banks out of 25 banks, the study employ correlation and ex post factor research design, the study adopt multiple regression technique using stata as a tool of analysis and the finding reveals that there is a negative relationship between four liquidity risk bucket and financial performance but only total liquid assets to liability is significant at 1% level while on the other hand a significant positive relationship exist between total loan to total deposit as measure of liquidity risk and financial performance (NIM) the study was conducted before the Deposit Money banks in Nigeria adopted the international financial reporting standards, thus the findings of the study would not be applicable in the IFRS regime.

Soyemi Ogunleye and Ashogbon (2014) further studied risk management practice and financial performance of Nigeria Deposit Money Bank. The study measure

risk management by credit risk, liquidity risk, operation risk and capital adequacy risk and performance with ROA for the period of 2012 using 11 banks, the study used OLS regression to estimate the coefficient of the independent variable on the dependent variable and the finding reveal a positive significant impact of credit risk and capital adequacy risk on financial performance while on the other hand it reveal a negative but significant impact of liquidity risk and operational risk. A study period of just one year may not be adequate enough to guide policy makers, regulator, managers and other stakeholders.

Ibe (2013) looked at the impact of liquidity management on the profitability of banks in Nigeria .The study select three banks using random sampling technique, the proxies for liquidity management include cash and short term fund, bank balances and treasury bills and certificates, while profit after tax was the proxy for profitability. Elliot Rothenberg Stock (ERS) stationary test model was used to test the run association of the variables under study while regression analysis was used to test the hypothesis. The result reveal that cash and short term funds and bank balance have a negative impact on profitability in one bank while cash and short term funds has negative impact on profitability of another bank, whereas other liquidity proxy in other banks have positive impact on profitability. The study therefore recommends that banks should engage competent and qualified personnel in order to ensure that right decisions are adopted especially with the optimal level of liquidity and still maximize profit. The findings of the study may be applicable only in those three banks, as three banks cannot adequately represent all the deposit money banks in Nigeria.

Haneef et al (2012) studied the impact of Risk Management on Non-performing Loans and profitability of Banking Sector in Pakistan .The study sample five Banks and the result of this study reveals that there is no proper mechanism for risk management in banking sector of Pakistan. Study also concluded that non-performing loans are increasing due to lack of risk management which threatens the profitability of banks. This study provides suggestion that banking sector can avoid their non- performing loans by adopting methods suggested by state bank of Pakistan. The study may lack external validity as there exist differences in economy, operational environment and banking regulations across the globe in addition is a qualitative study which may lead to bias conclusion.

Nawaz et al (2012) examined credit risk and performance of Nigeria Banks for the period of 2004-2008. The study sample 6 Banks out of the quoted 24banks, the study proxy credit risk with non-performing Loans to total loans and loans to

total deposit ratio while performance was proxy with ROA. The data were collected from secondary sources and Ordinary Least Square (OLS) was adopted as a tool of analysis. The findings revealed that credit risk management has a significant negative impact on the profitability of Nigeria banks. Therefore, from 2008 to date a lot have taken place within the banking sector in Nigeria which makes it needful for similar empirical investigation.

Njanike (2009) linked effective credit risk management on bank survival (Bank crises of Zimbabwe 2003/2004) for the period of six month to June 2009. The study chose survey research design; data were collected using questionnaire and interview. The study sample 10 commercial Banks using random sampling technique. Twenty questionnaires were used to gather data with two for each commercial bank chosen. A total of 10 interviews were held with the heads of credit or senior managers from these banks. The study found that the failure to effectively manage credit risk contributed to a greater extent to the banking crisis. The study also identified poor corporate governance, inadequate risk management systems, ill planned expansion drives, chronic liquidity challenges, foreign currency shortages and diversion from core business to speculative non-banking activities as other factors that caused the crisis. The study also indicate that there is need for banks to develop and implement credit scoring and assessment methodologies, review and update the insider lending policies and adopt prudential corporate governance practices. The study may lack external validity as the study is a special case of bank crises in Zimbabwe.

Adebayo, David and Samuel (2011) studied liquidity management and profitability of Banks in Nigeria, the study used primary source of data (questionnaire) and survey research design was adopted. The study used simple percentage and Pearson correlation to arrive at the findings of the study which reveals that liquidity has significant influence on performance of Banks in Nigeria. The study fails to indicate the sample population and the period of covered by the study.

Fadare (2011) examined Liquidity and financial crises in Nigeria for the period of 1980-2009. The study employed linear least square model and time series data. The finding reveals that only liquidity ratio, monetary policy rate and lagged loan-to-deposit ratio are significant for predicting Banking Sector liquidity. Secondly, the study reveal a decrease in monetary policy rates, liquidity ratios, volatility of output in relation to trend output, and the demand for cash, leads to an increase in current loan-to-deposit ratios; while a decrease in currency in circulation in

proportion to Banking Sector deposits; and lagged loan-to-deposit ratios leads to a decline in current loan-to-deposit ratios. The result suggests that during periods of economic or financial crises, deposit money banks are significantly illiquid relative to benchmarks, and getting liquidity monetary policies right during these periods is crucial in ensuring the survival of the Banking Sector.

Almumani (2011) studied the impact of Management Factors on Commercial Bank Profitability: Empirical Evidence from Jordan for the period of 2005-2011, the study sample 13 commercial Banks and employ regression tool of analysis. The finding of the study reveals that cost efficiency ratio is a strong negative and significant factor under control of management that determine profitability of commercial bank in Jordan while other variables (liquidity risk, credit exposure ,credit risk and capital adequacy) do not show any statistical effect on profitability. The study may lack external validity as the findings may not be applicable in other countries.

Funso, Kolade and Ojo (2012) examined credit risk and commercial banks' performance in Nigeria: A panel Model Approach for the period of 11 years (2000-2010). Five commercial banking firms were selected on a cross sectional basis out of twenty commercial banks. Return on Asset (ROA) was used to measure profitability and credit risk was proxy with ratio of Non-performing loan to loan & Advances (NPL/LA), ratio of Total loan & Advances to Total deposit (LA/TD) and the ratio of loan loss provision to classified loans (LLP/CL) .Regression tool of analysis was employ to estimate the regressor against the regressand and the results reveal that Non-performing Loans and Loan loss provision are significant and negatively influencing banks profitability while total loans and advances is significant but positively influencing profitability of banks in Nigeria. The sample size of the study did not depict a full representation of the total population of study; as such the findings may lack applicability in other banks.

Markowitz (1952) is the pioneer scholar that propounded the risk return theory .The theory that underpins this study is Risk-Return Theory; this is because banking is both a risk-taking and profit making business, and bank activities should return profits commensurate with their risk. Although this theory is intellectually sound and almost universally accepted by bankers and regulators, but banks have had difficulty implementing it in Nigeria. Traditional theory of risk return can be applied under condition of risk. The theory posits that the higher the risk the higher the return and vice versa .This suggest that banks

virtually in all circumstance are expected to behave rationally. Therefore, conventional economic wisdom suggests that risk-return is positive (Brealey & Myers, 1981) Existing research studies have largely supported a positive risk return relationship. Given that performance will depend on level of risk (high or low). The higher the risk, the higher will be the financial performance and vice versa. This postulation is true when the banks risk appetite is lower than the risk tolerance.

3. Methodology and Measurement

For this study correlational research design is used. A correlational research design is used to describe the statistical association between two or more variables. It is therefore most appropriate for this study because it allows for testing of expected relationship between and among variables and the making of predictions regarding these relationships. The population of the study comprises of all 15 quoted Deposit Money Banks in the Nigeria Stock Exchange as at 31st December 2015, the study sample out 5 Banks which is 33% of the total population of the study using systematic sample technique, the period of the study is 2011 to 2015 this period is chosen because the banks adopt IFRS in 2012 and previous studies did not cover these periods. The study used balanced panel data from secondary sources only because it is a quantitative study with positivism paradigm and the core of the data needed for analysis can be adequately and conveniently extracted from the audited financial reports of the selected firms within the period of the study. GLS regression is adopted to examine the model of the study because the robustness tests carried out suggest that is most appropriate for the study.

Table 1: Variable measurement

S/N	VARIABLE	MEASUREMENT
1	Profitability	Profit after tax by total asset (Nawaz et al, 2012)
2	Credit Risk	Total non-performing loan by total loan (Tahir & Mahmoud, 2015)
3	Liquidity Risk	Total loan to Total Deposit ratio (sanya et al 2012)
4	Non-performing Loan	Natural Log of total non-performing loan
5	Firm Size (control variable)	Natural Log of total Asset (Ola 2014; Tendeloo & Vanstraelen, 2015; Tobi et al 2016)

Source: Author

Regression model for testing the hypotheses of this study is presented as follows:

$$ROA_{it} = \alpha_{it} + \beta_1 CR_{it} + \beta_2 LR_{it} + \beta_3 NPL_{it} + \beta_4 FS_{it} + \mu$$

Where:

- ROA = Return on Assets
- CR = Credit Risk
- LR = Liquidity Risk
- NPL = Non-Performing Loans
- FS = Natural log of total assets
- α = constant term
- it = represents panel and time identification of a given firm “i” at time “t”

$\beta_1, \beta_2, \beta_3, \beta_4,$ = the parameters being estimated by the regression: while μ is the random error or residuals from the regression estimates.

Robustness checks such as multi-colinearity, serial correlation and heteroskedasticity as well as hausman specification test have been conducted to improve the reliability and validity of statistical inferences derivable from the regression result of the study. The robustness results are presented and discussed in the next section.

4. Result and Discussion

This section presents the regression result of the dependent variable (PAT) and the independent variable of the study (credit risk, liquidity risk and non-performing loans). It follows with analysis and discussion of policy implication from the findings of the study. The result begins with a range of descriptive statistics of dependent and independent variables with mean, standard deviation, minimum and maximum presented as follows:

Table 2: Summary of Descriptive Statistics

	Prof	CR	LR	NPL	FS
Mean	0.01468	0.57468	0.0317	0.4244	20.6734
Std.Dev	0.01734	0.12681	0.01495	0.1260	0.7427
Min	-0.0205	0.3954	0.01	0.1786	19.2144
Max	0.526	0.8213	0.0651	0.6045	21.5729

Table 1 shows the average profitability of listed Deposit Money Banks is 1%, liquidity ratio accounted for about 57%, Credit risk ratio accounted for 3% while total deposit less loans to deposit ratio accounted for 42% while control variable is average is 20.67 billion naira worth of asset by the banks .The standard deviation of most of the variables are not far away from their respective means

values .This indicate a favorable level of dispersion that the data is not skewed and good to produce a reliable result. The minimum values of profitability, liquidity risk, credit risk total deposit less loan to deposit ratio and control variable are; -2%, 39%, 1%, 17%, while the respective maximum values are; 52%, 82%, 6%,60%. The total asset of the banks range from 19.21 to 21.57 billion naira during the period of the study

Table 3: Correlation Matrix

	Prof	ltdratio	nplttl	tdlntd	log of asset
Prof	1				
Ltdratio	0.58	1			
Nplttl	-0.24	-0.10	1		
Tdlntd	-0.58	- 0.99	0.10	1	
logofasset	0.68	0.43	-0.31	-0.42	1

The correlation matrix reveals the relationship between the independent and dependent variable of the study. It reveals that liquidity risk, Credit risk and total deposit less loans to deposit ratio have an association with profitability at 58%, -24% and -58% respectively. While the control variable reveal a positive association at 68%. This implies that credit risk and total deposit less loans to deposit ratio have a negative association with profitability while liquidity risk and control variable have a positive association with profitability. High correlation among the independent variables point the possibility of multi-collinearity (excessive correlation), a situation which distorts the standard errors of estimates and the validity of the result became questionable. The correlation coefficients showed that multi-collinearity will not pose a threat to the model of the study

Table 4: Summary of the Regression Result

Statistics	Beta Coefficients	t-values	Sig.
Variables			
CR	0.157	4.28	0.006
LR	0.223	3.38	0.012
NPL	-0.563	-2.95	0.009
FS	0.011	0.65	0.523
R2			0.827
Adj. R2			0.741
F. Statistic			9.61
Sig			0.0001

Source Stata Output 2016

The cumulative correlation between dependent variable (profitability) and independent variable (credit risk, liquidity risk and non-performing loan) of the study is given by the R^2 of 0.82. This implies that for any change in risks of listed Deposit Money Banks in Nigeria; their profitability will be directly affected by 82%. The Adjusted R^2 (0.74) which is the multiple coefficient of determination gives the proportion or percentage of the total variation in dependent variable explained by the explanatory variable jointly. Hence it signifies that 82% of total variation in profitability of listed deposit Money Banks in Nigeria is caused by their credit risk and liquidity risk. This indicates that the model is fit and the explanatory variable are properly selected, combined and used. This can be confirmed by the value of F-statistics of 9.61 significant at 1% level. The multi-co-linearity test of variance inflation factor and tolerance values shows that, multicollinearity will not be harmful to the study as all the vifs are below ten and tolerance values below 1. The Breusch-pagan / cook-Weisberg test for heteroskedasticity shows that the null hypothesis of constant variance is true, as the p-value fail to reject it at 22%. As such we uphold that our disturbance term is purely random error since constant variation in the dispersion exists. The hausman specification test suggests fixed-effect within regression at p-value of 1% level

The regression result reveals that credit risk (non-performing loans to total loan ratio) has significant impact at 1% level of significant on profitability of listed Deposit Money Banks in Nigeria with a positive coefficient of 0.157. This implies that the higher the credit risk of listed Deposit Money Banks in Nigeria, the more the profitability of listed deposit money banks. However, more credit risk decrease profitability. This result forms the basis of rejecting the first null hypothesis of the study which states that, credit risk has no significance influence on the profitability of deposit money banks listed in Nigeria. However, results regarding credit risk and profitability have been divided into two categories through literatures. The first category of the studies that find significant negative relationship between credit risk and profitability include hand Kargi (2011), Aforo & Joseph(2015), Haneet et al (2012), Nawaz et al (2012), Njanike (2009), Funsho et al(2012) among others. However the second category that finds positive relationship between credit risk and profitability are Soyemi et al (2014). Our results are in line with the second category.

In addition, the regression result reveals that liquidity risk is positively and statistically related to profitability of listed deposit Money Banks in Nigeria with positive coefficient at 0.223 and a t – value of 3.38 which is statistically

significant at 5% significance level. This result implies that, more liquid banks in Nigeria are having greater tendencies of generating more profit. This finding is however, consistent with the study prior expectation that, more liquid Banks have better chance and advantages of extending loan facility to customers in order to earn interest which will improve their performance (profitability). This findings give us the basis for rejecting the second null hypothesis of the study which suggest that, liquidity risk is not significantly impacting profitability of deposit money banks listed in Nigeria. This finding is however, consistent with the studies of Dahiru and Muhammed (2015), Adebayo et al (2011), Ajong et al (2014), Xu (2011), Sanya (2012) among others. The finding is contraray to that of Ibe (2013), Soyemi et al (2014), Sanya (2012), Kuar et al (2012), Elsiefy (2013).

In order to test the last hypothesis of the study which states that, Non-performing loans has no significance effect on the profitability of deposit money banks listed in Nigeria. The result reveals a beta coefficient of -0.563 and a t-value of -2.95 which is statistically significant at 1% significant level. This implies that, non-performing loans is negatively impacting on the profitability of deposit money banks listed in Nigeria. In addition to that, the higher the non-performing loans in deposit money banks the lower the profitability which is in line with the study prior expectation. Hence, this result support the reality considering the happenings or the number of Nigerian deposit money banks that were declared distress by the Central Bank of Nigeria (Oceanic Bank plc, Intercontinental Bank plc) among others as a result of the large quantum of their non-performing loans. Therefore, the third hypothesis of this study is hereby rejected.

The study has several theoretical, practical and regulatory implications. These implications represent the contribution of the study which are expected to benefit the existing body of knowledge within the accounting and finance research, regulators, managers and policy makers. Our findings have important policy implication since they suggest the need for liquidity management in the deposit money banks listed in Nigeria. These deposit Money Banks perform an intermediary function between surplus unit and deficit unit.

5. Conclusion and Recommendation

Risk return theory demands that the higher the risk the higher the return. However, in practice, the some high risk can lead to lower returns as the result of our study reveals that credit risk of listed deposit Money Bank in Nigeria will cause decline in profit of the Banks and one of the reason for this is due to non-performing loans given to customers by these Banks. Researchers have found out

that credit risk negatively affect performance in the banking industries. In this study it has been statistically revealed that credit risk has a significant negative impact on financial performance of listed Deposit Money Banks in Nigeria and on the other hand this study find a positive but not significant relationship between liquidity risk and profitability of listed deposit money banks in Nigeria .Base on the conclusion it is therefore recommend that that credit risk reduction and monitoring should be encourage and implemented by regulatory agency of government and all other stakeholders in the listed deposit money banks in Nigeria because the negative impact it has on performance. On the hand liquidity risk too should be monitored and encourage as it has a positive relationship with performance but not significant.

This study is not without limitations. Due to time consuming nature of the work, the study is restricted to only one sector of the economy. Using larger population may give a different result. Notwithstanding this limitation, the viability of the methodology used and the validity of the finding remain unaffected .The study therefore recommend that further studies should incorporate other sectors, other variables and larger population.

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Appendix

. summarize prof ltratio nplttl tdlntd logofasset di d2 d3 d4

Variable	Obs	Mean	Std. Dev.	Min	Max
prof	25	.01468	.0173498	-.0205	.0526
ltratio	25	.574684	.1268193	.3954	.8213
nplttl	25	.0317	.0149565	.01	.0651
tdlntd	25	.424416	.1260344	.1786	.6045
logofasset	25	20.67347	.7427564	19.2144	21.5729
di	25	.2	.4082483	0	1
d2	25	.2	.4082483	0	1
d3	25	.2	.4082483	0	1
d4	25	.2	.4082483	0	1

. correlate prof ltratio nplttl tdlntd logofasset di d2 d3 d4
(obs=25)

	prof	ltratio	nplttl	tdlntd	logofa-t	di	d2	d3	d4
prof	1.0000								
ltratio	0.5862	1.0000							
nplttl	-0.2497	-0.1021	1.0000						
tdlntd	-0.5861	-0.9995	0.1092	1.0000					
logofasset	0.6863	0.4326	-0.3144	-0.4259	1.0000				
di	0.0041	-0.4056	-0.4415	0.4114	0.5296	1.0000			
d2	-0.5659	-0.2716	-0.0143	0.2604	-0.7770	-0.2500	1.0000		
d3	-0.0735	-0.2283	0.1849	0.2329	-0.2394	-0.2500	-0.2500	1.0000	
d4	0.7289	0.7119	0.1105	-0.7131	0.4730	-0.2500	-0.2500	-0.2500	1.0000

. regress prof ltratio nplttl tdlntd logofasset di d2 d3 d4

Source	SS	df	MS	Number of obs =	25
Model	.005980379	8	.000747547	F(8, 16) =	9.61
Residual	.001243981	16	.000077749	Prob > F =	0.0001
				R-squared =	0.8278
				Adj R-squared =	0.7417
Total	.00722436	24	.000301015	Root MSE =	.00882

prof	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
ltratio	.1575602	.5709853	0.28	0.786	-1.052875 1.367995
nplttl	-.5639389	.1912907	-2.95	0.009	-.9694571 -.1584208
tdlntd	.2235109	.5945687	0.38	0.712	-1.036919 1.48394
logofasset	.0113523	.0173756	0.65	0.523	-.0254824 .048187
di	-.0249696	.0201669	-1.24	0.234	-.0677214 .0177822
d2	-.0126093	.0181869	-0.69	0.498	-.0511639 .0259452
d3	-.0016429	.0070834	-0.23	0.820	-.0166589 .0133732
d4	.0280462	.0098765	2.84	0.012	.0071089 .0489834
_cons	-.3853079	.7639562	-0.50	0.621	-2.004823 1.234207