

Risk Management Practices and Financial Performance: Evidence from the Nigerian Deposit Money Banks (DMBS)

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Abstract: *This paper examined the risk management practices among deposit money banks in Nigeria with a view to relating these practices to their financial performance in the 2012 financial year. The study used secondary data gathered through content analysis of the sampled banks' annual reports and accounts on variables such as non-performing loans, liquidity, operating cost and capital adequacy to measure risk management practices. The cross sectional data obtained was analysed using descriptive statistics to depict patterns. Thereafter a robust standard error, OLS regression was used to estimate any significant influence between the banks' risk management practices and their financial performance. The findings appear to be largely consistent with previous works as the explanatory variables significantly accounted for variations in the financial performance [ROA-92% (71.78); ROE-84% (46.55)] in both models.*

Keywords: *Risk Management Practices, Commercial Banks, Financial Performance, Nigeria*

1. INTRODUCTION

In the aftermath of the global financial crisis the risk management practices among financial institutions became a major area of focus for stakeholders in the financial sector. Risk Management is the identification, assessment and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor, and control the probability and/or impact of unfortunate events (Njogo, 2012). It is neither a concept for complete risk avoidance nor its elimination. The essential function of risk management is to identify, measure and more importantly monitor the profile of an organization. While new avenues for Deposit Money Banks otherwise called commercial banks have opened up, especially in product development and market penetration strategy, they have brought with them new risks as well and banks are expected to handle and overcome these risks. Excessive and poorly managed risk can no doubt lead to losses and thus endanger the safety of a bank's depositor's funds as well as shareholders investments. Extant finance literature has concluded that risk is a significant and inevitable aspect of any business activity in a market economy. Business grows mainly by taking risk; the greater the risk, the higher the potential return and so the business unit must strike an appropriate trade-off between the two.

There is a consensus on the delicate but predominant position occupied by financial institutions, especially banks, both in the developed and emerging economies. Financial institutions usually account for a major share of market capitalization. For instance in Nigeria, the banking sector accounts for over 40% of the total market capitalization of the Nigeria Stock Exchange (NSE). Commercial banking businesses are risky ventures because risk-taking is an inherent element of

banking operations and indeed, profits are in part the reward for successful risk taking in business. The major services provided by banks are responsible for this. Essentially, banks perform three (3) main functions – financial intermediation, asset transformation, and money creation and each of these roles are fraught with obvious risks. Financial intermediation, the process in which money deposited in banks for safe keeping by individuals or organisations is loaned out to borrowers may be affected by the risk that depositors demand their money at a rate faster and larger than the reserves the bank has kept from deposited funds. Asset transformation, the process of creating new assets (loans) from liabilities (deposits) is subject to the risk that a change in market interest rates may dilute the profit a bank makes in its loans since a bank must charge interest on its loans that is higher than the interest it pays on its deposits. Money creation, the process in which additional money is generated in the financial system by the repeated lending of an initial deposit in a bank through the principle of the fractional reserve, can create inflationary or other macroeconomic risks as the amount of money created in a fractional reserve banking system depends on the level of reserves banks are required to maintain from deposits. Thus, risk taking is an integral part of and constitutes a major characteristic of banking business.

Risk has a very long history as it can be said to have been in existence as long as human existence. It has defied a universal definition as every author's attempt displays a different orientation. Gallati (2003) defined risk as a condition in which there exists an exposure to adversity, or a condition in which there exists a possibility of deviation from a desired outcome that is expected or hoped for. Kannan and Thangavel (2008) posit that risk implies exposure to uncertainty or threat. One consensus from the different definitions is that risks can have an adverse impact on profitability. While the types and degree of risks that an organization may be exposed to depends upon a number of factors such as its size, complexity, nature of business and activity volume, it is believed that generally banks face credit, market, liquidity, operational, compliance / legal /regulatory and reputation risks.

There have been several presentations, on the risk management practices in banks but they are largely theoretical and not empirical. This paper therefore sought to fill this gap by examining risk management practices among commercial banks in Nigeria with a view to relating these practices to their financial performance. In addition to contributing to the limited literature on risk management practices of banks in emerging economies, this paper is also peculiar as it examines the risk management practices of banks in the year 2012 which is a significant year because it is the year in which banks in Nigeria for the first time adopted the International Financial Reporting Standards (IFRS) in annual reports presentation. The rest of this study is organized as follows: the next section reviews literature on risk management and studies carried out by previous researchers while the section that follows explains the methodology adopted. The following section presents the analysis and the discussion of results obtained while the last section is on conclusions and policy recommendations.

2. RISK MANAGEMENT PRACTICES AND PROCESSES IN THE BANKING INDUSTRY

The banking industry is no doubt a regulated sector as a result of the riskiness of its operation. Consequently, risk management in banks is fast becoming a discipline that participants and players in the industry need to align with. Risk management is a process which involves risk identification, risk measurement, risk monitoring and risk control. In order to properly manage risks, an institution must recognize and understand risks that may arise from both existing and new business initiatives; for example, risks inherent in lending activity include credit, liquidity, interest rate and operational risks; this is risk identification. Risk identification should be a continuing process and should be understood at both the transaction and portfolio levels. Once risks have been identified, they should be measured in order to determine their impact on the banking institution's profitability and capital. This can be done using techniques which range from simple to sophisticated models. Accurate and timely measurement of risk is essential to effective risk management systems. An institution that does not have a risk measurement system has limited ability to control or monitor risk levels. Banking institutions should periodically test their risk measurement tools to make sure they are accurate. Good risk measurement systems assess the risks of both individual transactions and portfolios.

Institutions are also expected to put in place an effective management information system (MIS) to monitor risk levels and facilitate timely review of risk positions and exceptions. Monitoring reports should be frequent, timely, accurate, and informative and should be distributed to appropriate individuals to ensure action, when needed. After measuring risk, an institution should control it by establishing and communicating risk limits through policies, standards, and procedures that define responsibility and authority. These limits should serve as a means to control exposure to various risks associated with the banking institution's activities. Institutions may also apply various mitigating tools in minimizing exposure to various risks. Institutions should have a process to authorize and document exceptions or changes to risk limits when warranted.

Basel II is the second of the Basel Accord's recommendations on banking laws and regulations issued by the Basel Committee on Banking Supervision. In accordance with Basel II, the following types of risks are usually found in banking organizations. Credit risks also known as default risk is one of the oldest and most vital form of risk faced by banks as financial intermediaries (Broll, et. al., 2002). It is the potential loss arising from the failure of a borrower to meet its obligations in accordance with agreed terms. Market risks, which is the risk of volatility in the market is also a risk that affects bank's return. It is the risk of loss from adverse movement in financial market rates (interest and exchange rate) and bond, equity or commodity prices. A bank's market risk exposure is determined by both the volatility of underlying risk factors and the sensitivity of the bank's portfolio to movements in those risk factors (Hendricks & Hirtle, 1997 as cited in Zahangiralam & Masukujjaman, 2011).

Other risks that is consequent upon the second pillar of the Basel II and which provides a framework for dealing with all the other risks includes operational risk and liquidity risk: operational risk is the potential financial loss that can result from the breakdown in day to day operational processes. It can arise from failure to comply with policies, laws and regulations, from fraud or forgery (Njogo, 2012). These include direct and indirect laws resulting from inadequate or failed internal processes, people and systems or from external events. Njogo (2012) also describes liquidity risk as the ability of a bank to fund increases in assets and to meet obligation as they come due without incurring unacceptable losses. The fundamental role of banks in the maturity and transformation of short-term deposit into long-term loans makes banks inherently vulnerable to liquidity risk. Effective liquidity risk management helps ensure cash flow obligations which are uncertain because they affected by external events and other agents behavior. Other risk include interest rate risk (risk borne by an interest – bearing asset, such as a loan or a bond which is subject to variability in interest rates), legal risk (arises from the potential enforceable contract or lawsuits with adverse judgments which can disrupt or otherwise negatively affect the operations or condition of a banking organization) and reputational risk (any risk that is likely to destroy shareholder value due to negative publicity from loss of revenue, litigation, loss of clients and partners, exit of key employees, share price decline or difficulty in recruiting talent).

3. RISK MANAGEMENT PRACTICES- THE NIGERIAN BANKING EXPERIENCE

Until recently when a remarkable improvement was noticed, the banking landscape in Nigeria left more to be desired. There were several intervention measures by the Central Bank of Nigeria (CBN), the apex bank that regulates commercial banks and other banks following the massive bank failures in 2009. These measures include the institutionalizing of the corporate governance code with a section is dedicated to risk management and the implementation of various reforms in the industry. The CBN acknowledged the elementary stage of the country's risk management efforts among commercial banks and its bedevilment by a number of challenges. According to the CBN these challenges among others include acute dearth of knowledgeable and skilled risk professionals and poor knowledge of risk management by members of the board of many banks. Senior management members and directors have been noted to be unable to match the nexus between their banks' business strategies and risk appetite and the implications for risk management within the organization.

The CBN detailed several factors that are responsible for this state of affairs. They are absence of formal training institutions offering risk management curricula, absence of an industry-recognized risk management qualification and certification program or system to foster the development of professional talent in the different areas of risk management such as credit, operational, liquidity and market risks. Also noted was the absence of a holistic, well-structured and well-coordinated approach to talent development tailored to meet the contemporary challenges in the industry, including the area of risk management and corporate governance. Others are lack of strategic partnerships and alliances with tertiary institutions local and global, and with associations of professionals on risk management, training and education, absence of a competent framework to support the development of skilled and capable workers in the industry including in the area of risk management and low priority accorded to the development of capacity by some banks particularly in the area of risk management and corporate governance for members of the board and management.

However, with the implementation of the Basel II/III capital accords which is anchored on risk-based supervision as against compliance-based supervision of banks; the professionalism approach to risk management education through the development of qualification and certification programs by registered professional bodies and training providers such as the Credit Risk Management Association of Nigeria (CRIMAN); and the adoption of the IFRS effective from the year 2012 among other regulatory initiatives, it is envisaged that risk management practices of Nigerian banks will greatly improve.

4. REVIEW OF PREVIOUS STUDIES

Studies on the influence of risk management practices on financial performance have been largely conceptual drawing on the theoretical frameworks provided by institutional regulators (Njogo, 2012; Tandelilin, Kaaro, Mahadwartha & Supriyatna, 2007). These scholars opine that a major objective of bank management is to increase shareholders' return indicating bank performance. They maintained that this objective is often achieved at the cost of increased risk and they detailed bank risks to include interest risk, market risk, credit risk, off-balance risk, technology and operational risk, foreign exchange risk, country risk, liquidity risk, and insolvency risk.

Schroeck (2002) and Nocco and Stulz (2006) as cited in Ariffin and Kassim (2009) stress the importance of good risks management practices to maximize firms' value. While the former propose ensuring best practices by instituting effective and prudent risk management practices in order to increase earnings, the latter posits that effective Enterprise Risk Management (ERM) will provide long-run competitive advantage to the firm (or banks) compared to those that manage and monitor risks individually. In the light of this a holistic approach is suggested in managing risk.

Hakim and Neamie (2001) as cited in Ariffin and Kassim (2009) also examined credit risk and bank's performance in Egypt and Lebanon banks in the 1990s by using data for banks from the two countries over the period 1993-1999. Their study estimates a fixed effects model of bank return with varying intercepts and coefficients with findings that show that the credit variable is positively related to profitability while the relationship of the liquidity variable is insignificant across all banks and has no impact on profitability. The study also finds a strong link between capital adequacy and commercial banks' return, with a high capitalization ratio noted as being a hindrance to returns.

Another dimension is offered by Bruner (2010) on taking excessive risk to boost performance. Burner (2010) observed that a reduction in real risk-free rates of interest to historically low levels led to credit expansion in a ferocious search for yield among investors. Hence, major financial crisis around the world can also be attributed to the ambition to achieve maximum returns on shareholder's funds thereby leading to a situation where the board and management take excessive risk to boost stock prices. The economic crisis of 2007 and the 2009 financial crisis in the Nigerian banking industry are examples of such instances.

Adeusi, Akeke, Adebisi and Oladunjoye (2013) in their study which focused on the association of risk management practices and bank financial performance in Nigeria used data obtained from the annual reports of 10 banks for four years and reported an inverse relationship between the financial

performance of the banks and doubtful loans. The relationship between financial performance and capital asset ratio was found to be positive and significant. Their study suggests that the higher the managed funds by banks, the higher the performance. The study concludes that there is a significant relationship between banks performance and risk management practices hence, the need for banks to practice prudent risks management in order to protect the interests of investors.

5. METHODOLOGY

Data for this study was secondary in nature and was obtained from the annual reports and accounts of the selected quoted commercial banks (see appendix I). Each of the risk management indices (credit risk, liquidity risk, operational risk and capital risk) as practiced by the selected banks was computed using figures contained in the financial statements. Each category of the risk management practices represent areas suggested in Basel II of the Basel Accord. This served as the guide to obtaining data through content analysis as opposed to studies that used the questionnaire to obtain data from respondents on the risk management practices of their firm (Ariffin & Kassim, 2009). The researchers consider this method as adequate and appropriate especially in light of the fact that IFRS was adopted by Nigerian banks and other quoted companies in the year 2012. This has led to a situation where the annual reports and accounts of banks in Nigeria now disclose more information inclusive of risk management practices. Financial performance in the banks were measured by the widely accepted indices of Return on Asset (ROA) and Return on Equity (ROE)..

Data obtained was analyzed using descriptive statistics and cross-sectional OLS regression analysis for estimating the coefficients of the independent variables. Pearson's Correlation analysis was also used to test for multi-collinearity relationship among the independent variables that measure risk management practices.

The linear model in a functional form is stated as follows:

$$ROA = f (NPLR, LIQR, CIR, CAR) \quad (1a)$$

$$ROE = f (NPLR, LIQR, CIR, CAR) \quad (1b)$$

Where:

ROA = Return on Assets

ROE = Return on Equity

NPLR= Non-Performing Loan Ratio (computed as NPL/TLA)

LIQR = Liquidity Ratio (Liquefiable Assets / Qualifying Liabilities)

CIR = Cost to Income Ratio (Operating Expenses / Gross Earnings)

CAR = Capital Adequacy Ratio [Capital Base (Tier I + Tier II) / Risk-weighted Assets]

The econometric form for the model is specified as:

$$ROA_i = \beta_0 + \beta_1 NPLR_i + \beta_2 LIQR_i + \beta_3 CIR_i + \beta_4 CAR_i + \mu \quad (2a)$$

$$ROE_i = \beta_0 + \beta_0 + \beta_1 NPLR_i + \beta_2 LIQR_i + \beta_3 CIR_i + \beta_4 CAR_i + \mu \quad (2b)$$

6. RESULTS AND DISCUSSIONS OF FINDINGS

Table 1 shows the descriptive statistics for the variables in this study. All the eleven banks are profitable. The average ROA for the selected banks is 2% with a standard deviation of 1.269 and the ROA ranges from 0.89% to 5.33%. The mean ROE is 17% with a standard deviation of 8.352, the minimum value 4.6% and the maximum is 31.9%. Risk management practice indices as shown for all the banks in table 1 also indicates a rather impressive performance. The non- performing loan ratio, a measure to capture banks' credit risk shows a mean value of 6% with a standard deviation of 8.844 implying that for every loan given, only 6% is non- performing. The liquidity risk, proxied through banks' liquidity ratio shows a mean value of 65% among the banks. This is far above the CBN

threshold of 30%, implying that all the selected banks are sufficiently liquid. Similarly, the efficiency ratio used to capture operational risk is also impressive with a reported average value of 50%, implying that about half of the banks' gross earnings is available to cover other non-operational expenses. In addition, all the banks used in the study is adequately capitalized having shown a mean value of 22%, which is far above the minimum benchmark set by the CBN of 10% and 15% for national and international banks respectively.

There is no multi-collinearity problem among the studied variables as shown in tables 2a and 2b, since none of the coefficient is greater than 0.80. This is further validated as depicted with the VIF in table 3.

Tables 4a and 4b show the estimates for the cross-sectional OLS regression for each of the financial performance indicators. The robust standard errors that are heteroscedasticity-consistent have been adopted. The models indicate a relatively high R^2 [ROA=92% (71.78); ROE=84% (46.55)] implying a significant influence of bank's risk management practices on performance. The F-statistics as indicated further reinstated this assertion. However, while the credit and capital risk display significant positive influence on ROA by accounting for 10% (8.31) and 20% (4.14), only the credit risk is positively significant on ROE having accounted for 45% (5.51) variations in ROE. Lastly, the result of the Breusch-Pagan/ Cook-Weisberg test shown in tables 5a and 5b for ROA and ROE respectively show the absence of heteroskedasticity for both models. This is not surprising as the Robust Standard Errors model is adopted in the running of the OLS regression results.

The findings from this study support the claim by other studies that risk management practices in the banking sector have a significant impact on financial performance (Schroeck, 2002; Nocco & Stulz, 2006; Noraini & Salina, 2010; Adeusi, et. al., 2013). Tandelilin, et. al., (2007) posits that risk management practices not only affects financial performance, but also affects overall economic growth in a nation. This assertion is consistent with the fundamental risk return theory.

7. CONCLUSIONS AND POLICY RECOMMENDATIONS

This paper examined the risk management practices among deposit money banks in Nigeria with a view to relating these practices to their financial performance in the 2012 financial year. The year 2012 is significant because it is the year of the adoption and implementation of IFRS in their annual report and financial reporting which is expected to improve the content of banks' reports. The annual accounts are now bulky containing relevant and timely information including management discussions on usage of estimates and risk management profiles. This practice is in compliance with the second pillar of the Basel II, which empowers banks to review, monitor, manage and report on their risk management systems in other to achieve the desired objectives.

Risk management in banking represents the entire set of risk management processes and models which allows banks to implement risk-based policies and practices. They cover all techniques and management tools required for measuring, monitoring and controlling risks. As indicated from our findings, for Nigerian Deposit Money Banks financial performance is heavily determined by risk management practices. Therefore, it our suggestion that the CBN and other regulators should endeavour to enforce risk identification, assessment, measurement and control mechanism in line with best global practices in other improve on commercial banks' performances and so as to avoid financial crisis.

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Appendices

Appendix I: List of Selected Deposit Money Banks (DMBs) used in this Study

1. Access Bank
2. Zenith Bank
3. United Bank for Africa
4. Guaranty Trust Bank
5. First Bank of Nigeria
6. Skye Bank
7. Diamond Bank
8. Fidelity Bank
9. FCMB
10. Union Bank
11. Stanbic IBTC

Appendix II: Schedules of Tables referred to in the Study

Table 1. Summary of Descriptive Statistics for the variables

Variables	Mean	Std. Dev.	Min.	Max
ROA	2.398	1.269	0.89	5.33
ROE	17.394	8.352	4.6	31.9
NPLR	6.306	8.844	1.9	32.63
LIQR	64.913	21.304	45.5	97.4
CIR	50.355	18.123	14.49	72.4
CAR	22.809	4.308	16.6	31

Source: Author's Computation

Table 2a. Pearson Correlation Matrix (ROA)

	ROA	NPLR	LIQR	CIR	CAR
ROA	1.000				
NPLR	0.739	1.000			
LIQR	-0.041	-0.197	1.000		
CIR	-0.312	-0.212	-0.133	1.000	
CAR	0.578	0.019	0.033	0.244	1.000

Source: Author's Computation

Table 2b. Pearson Correlation Matrix (ROE)

	ROE	NPLR	LIQR	CIR	CAR
ROE	1.000				
NPLR	0.717	1.000			
LIQR	-0.108	-0.197	1.000		
CIR	-0.468	-0.212	-0.133	1.000	
CAR	0.379	0.019	0.033	0.244	1.000

Source: Author's Computation

Table 3. VIF for the Independent Variables

Variable	VIF	1/VIF
CIR	1.16	0.858
NPLR	1.12	0.896
LIQR	1.08	0.922
CAR	1.08	0.928
Mean VIF	1.11	

Source: Author's Computation

Table 4a. Multivariate (OLS) Regression Estimates- Robust

ROA	Coef.	Robust Std. Errors	t-statistics
NPLR	0.098	0.012	8.31*
LIQR	0.002	0.011	0.18
CIR	-0.024	0.012	-1.99
CAR	0.199	0.048	4.14*
Const.	-2.007	1.154	-1.74

Source: Author's Computation

*@5% significance level

F (4, 3) = 71.78 R-Sqd. = 0.924 Prob> F = 0.0026

Root MSE = 0.634

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Table 4b. *Multivariate (OLS) Regression Estimates- Robust*

ROE	Coef.	Robust Std. Errors	t-statistics
NPLR	0.454	0.082	5.51*
LIQR	-0.025	0.091	-0.28
CIR	-0.184	0.101	-1.83
CAR	0.816	0.379	2.15
Const.	2.793	8.314	0.34

Source: *Author's Computation*

*@5% significance level

F (4, 3) = 46.55 R-Sqd. = 0.837 Prob> F = 0.0049

Root MSE = 4.818

Table 5a. *Breusch-Pagan/ Cook-Weisberg test for heteroskedasticity (ROA)*

H ₀ : Constant Variance	
Variables: fitted values of ROA	
Chi ² (1)	1.03
Prob > chi ²	0.3112

Source: *Author's Computation*

Table 5b. *Breusch-Pagan/ Cook-Weisberg test for heteroskedasticity (ROE)*

H ₀ : Constant Variance	
Variables: fitted values of ROA	
Chi ² (1)	0.45
Prob > chi ²	0.5045

Source: *Author's Computation*