RISK COMPONENTS AND THE FINANCIAL PERFORMANCE OF DEPOSIT MONEY BANKS IN NIGERIA

Dr. Suleiman A. S. Aruwa

Department of Accounting, Nasarawa State University Keffi, Nasarawa State, Nigeria

Abdullahi O. Musa

Department of Accounting, Nasarawa State University Keffi, Nasarawa State, Nigeria

CITATION: Aruwa, S. A. S. & Musa, A. O. (2014). Risk components and the financial performance of deposit money banks in Nigeria. *International Journal of Social Sciences and Entrepreneurship, 1* (11), 514-522.

ABSTRACT

This study examines the effects of the various risk components like credit risk, interest rate risk and operational risk on the financial performance of Deposit Money Banks in Nigeria. The study is spurred by the persistent cases of bank failure and lack of exhaustive research in this area in Nigeria. The study uses the whole number of banks that have existed in Nigeria from the year 1997 to 2011. The data were collected from the Nigeria Deposit Insurance commission and were analyse using descriptive statistic and ordinary least square regression. It was established that a strong relationship exist between risk components and the financial performance of the banks in Nigeria as indicates by the r-squared value of 91%. However, variables that represent credit risk and the rate of capital to total weighted risk asset have positive relationship while operational and interest rate risk affects the profitability of the banks negatively. Based on the findings it is recommended in this study that both the Deposit Money Banks diversify the management of the other components of risk like minimising frauds instead of over concentrating on credit risk, which by so doing exposes other risk. This can achieve when the Central Bank and the Deposit Money Banks intensify the implementation of existing measure to combat bank frauds.

Key Words: *Credit risk, interest rate risk, operational risk and bank performance*

Introduction

Banks play a very important role as a primary lender to both big and small businesses. By its nature, banks face a number of challenges within internal and the external business environment. The nucleus of banks is intertwined with risks which include among others credit risk that arises as a result of lending to customers; market risk, which is due to changes in the economic environment that it operates; interest rate risk, being a risk due to changes in prime lending rate and banks lending rate; and operational risk, which arises as a result of poor management that causes failure or allow loopholes for fraud penetration.

The risks faced by banks if not properly managed have the potentials to affect the financial performance of the banks and at extreme cases leads to their failure. According to Khan &

Ahmed (2001) the survival and success of financial organisations depend critically on the efficiency of managing these risks. Good risk management is highly relevant in providing better returns to shareholders (Akkizidis & Khandelwa, 2008 and Al-Tamimi & Al-Mazrooei, 2007). Among the various components of risk, credit risk has received more attention from the banks; they mostly have credit risk management unit and regulators setting standards for minimising credit loss. In Nigeria such rules issued by the central bank of Nigeria are contained in Banks and other Financial Institution Act (BOFIA). Again, the guides provide by Basel I II & III Accords are also used by Nigerian banks to mitigate effects of risks on their financial performance.

The spate with which banks are failing in Nigeria has become a major source of concern for the stakeholders in the banking industry in Nigeria. From the year 1994 to 2006, forty eight (48) Deposit Money Banks (DMBs) were liquidated (NDIC, 2011). A number of reasons have been attributed to the causes of banks failure among which is poor risk management by the banks (Hamisu, 2011). In a collaborative study by the CBN and the Nigeria Deposit Insurance Corporation in 1995, operators of financial institutions confirmed that bad loans and advances contributed most to the distress. In their assessment of factors responsible for the distress, the operators ranked bad loans and advances first, with a contribution of 19.5%.

The crises in the banking sector led to the establishment of Nigeria Asset Management Corporation of Nigeria (AMCON) which commenced operation in the year 2010 to take over the management of the toxic assets in the books of the banks and also the management of intervened banks. While credit risk receive more attention from the regulators and the banks adequate attention is not given to other risk factors in both operation and in terms of empirical studies, especially their effects on the financial performance of banks in Nigeria.

The available studies use few samples of the banks coupled with few years span. Again, most of the studies carried out in Nigeria are on credit risk while not giving attention to other components of risk as shown in the literature part of this study. It is on these bases that this study examines whether risk components have significant effects on the performance of all the listed banks in Nigeria for the period of fourteen (15) years from the year 1997 to 2011. This gives a wider coverage of time as well as covering the whole population of the study.

Literature Review

Banks in both the developed and especially the developing world serves as the major provider of fund to both the big and small businesses. It is in the interest of the banks, government, depositors and lenders that banks continue to operate smoothly without much problems, however, the banking business by it nature is characterised by risk. If a bank does not take risk or take a too little risk it might hinder economic growth, on the other hand too much bank risk threatens economic stability making it very important for government and financial institutions to regulate banks with the aim of maintaining stability in their performance (Romulo, Maria & Josep, 2008). A good bank should be able to manage these risks to her advantage. Studies have established a link between good risk management practices with improved financial performances (Onaolapo, 2012; Schroeck, 2002 and Smith, 1995). These studies found that a good risk management system enhances the profitability of banks. Also, Drzik (2005) shows that bank investment in risk management during 1990s helped to reduce earnings and loss volatility.

The risks faced by banks are many, they include: credit risk, liquidity risk, market risk and operational risk. While the others are under the control of a bank's management, the market risk is outside her control. According to Stuart (2005) there is poor risk management by the Nigerian banks. He found that the rate of non performing loan (which is a measure of credit risk) is high at a rate of 35%. Earlier study by Umoh (2002) has also shown that there is increasing level of non performing loan rate, poor loan processing, undue interference in the loan granting process, inadequate or absence of loan collaterals are indicators of poor risk management by banks in Nigeria. Among the risk category, credit risk which is a risk as a result of customer credit default is most important and requires more attention by banks. According to Hamisu (2011), the major cause of serious banking problems continues to be directly related to low credit standards for borrowers and counterparties, poor portfolio management, and lack of attention to changes in economic or other circumstances that can lead to deterioration in the credit standing of bank's counter parties.

Few studies in Nigeria have examined the relationship between risk management and financial performance. Onaolapo (2012) examines the relationship between credit risk management and the financial performance of deposit money banks in Nigeria for the period of year 2004 to 2009 using selected six banks. The result indicate that a relationship exist between efficiency in credit management and the performance of the banks. Kolapo, Ayeni & Oke (2012) study the relationship between credit risk and bank's financial performance for the year 2000 to 2010 sampling five banks. The study finds that increase provision for non-performing loans reduces profitability. Also, Hamisu (2011) examines the relationship between credit risk management and bank performance for the year 2004 to 2008. The study also sampled six banks and the analysis done using regression and correlation analysis and finds a significant positive relationship between credit risk management and the financial performance of the banks.

Another risk that seriously undermines the financial of banks is operational risk. It usually causes loss as a result of inadequate or failed internal processes system and external threats (Owojori, Akintoye & Adidu, 2011). Operational risk include frauds and forgeries by bank staff and outsiders, inability to use information and communication technology well that allow outsiders access to system such as ATM frauds. Within the period of this study, the total number of frauds stand at 16969 with corresponding value of N22.77b lost by Nigerian banks to frauds. Also, market risk which comprises of exchange rate risk, inflation and interest rate risk also affects the financial performance of banks. Usually, this risk is outside the control of the banks, as they are determine by factors that affect the overall economy.

Methodology

The population of this study consists of Deposit Money Banks listed on the Nigerian Stock Exchange and insured by the Nigeria Deposit Insurance Commission (NDIC). The whole population above is use in this study. For each of the various years, a pool aggregated value of the variables is collected from each of the firms thus capturing each bank in the data pool. The data used in this study were collected from the annual financial report of the Nigeria Deposit Insurance Commission for the respective years from 1997 to 2011. The tool of data analysis used in this study is Mean, Maximum/Minimal for descriptive statistic while Ordinary Least Square (OLS) multiple regression is modelled to test the relationship between risk components and financial performance.

Variables in the Model

The financial performance of the banks is measured by Return on Asset (ROA) which is the dependent variable.

The independent variable- risk, is proxied by credit risk which is the ratio of Non Performing Loan to Loan and Advances and ratio of loan and advances to total deposit as used by Hamisu (2012) and Kolapo, Ayeni & Oke (2012). Another risk factor include in this study to capture operational risk is the number of frauds committed in a year. Banks are exposed to different kinds of fraud which could be internal, for example, fraud committed by bank staff and those between bank staff and outsiders. These frauds have the effects of impacting negatively on the performance of banks thus are also included. The study also capture the effect of interest rate as a measure of market risk since a change in interest rate could lead to a mismatch between interest paid on deposit and the interest received on loans. The interest rate risk is proxied by Net Interest Margin (NIM), and it is adjusted for change in interest rate. The regression model is stated bellow:

$$ROA = \alpha + \beta_1 lg\frac{NPL}{LA} + lg\frac{LA}{TD}\beta_2 + \beta_3 lgNFr + \beta_4 lgNIM + \varepsilon$$

Where:

ROA is the Return On Asset

$\frac{NPL}{LA}$ is the ratio of Non Performing Laon to Loan and Advances

$\frac{LA}{TD}$ is the ratio of Loan and Advances to Total Deposit

NFr is the Number of Frauds committed in the banks

NIM is the Net Interest Margin; and

ε is the error of estimate

The test above is carried out at 5% test statistics.

Results and Discussion

In this section the result of the data analysis using descriptive statistic and OLS are presented. The data (see appendix) uses in this analysis were first subjected to stationarity test for the presence of unit root and are confirmed to be stationary. Also, the data are tested for the presence of multi-colinearity which is confirmed not to be presence. The results of the above were not reported in this part.

Table 1: Descriptive Statistics

	ROA	NRL/TL	NOFR	LA/DP	IRG
Mean	-1.524667	18.20067	1131.267	66.31800	1189.311
Median	3.160000	20.13000	1133.000	64.84000	1250.251
Maximum	4.820000	32.80000	2352.000	85.20000	2774.880
Minimum	-64.72000	5.820000	182.0000	52.45000	325.6290
Std. Dev.	17.53366	8.093523	622.7716	10.65319	587.8788
Skewness	-3.439810	-0.184306	0.337064	0.613067	1.034674
Kurtosis	12.92157	2.126927	2.258081	2.231740	4.695989
Jarque-Bera	91.10418	0.561332	0.628057	1.308516	4.474111
Probability	0.000000	0.755281	0.730498	0.519828	0.106772
Sum	-22.87000	273.0100	16969.00	994.7700	17839.67
Sum Sq. Dev.	4304.009	917.0715	5429823.	1588.868	4838420.
Observations	15	15	15	15	15

The above table shows the descriptive statistics of the variables use in the study. For the period of study the minimum financial performance is shown by the negative value of 64.72 which occur in the year 2009. This is the year that precedes the period of the global financial crisis; banks in Nigeria were severely affected as their share values collapse on the Nigerian Stock Exchange. The highest return of 4.82 by the deposit money banks is recorded in the year 2001. The standard deviation of 17.53 means a considerable disparity in the level of return since the average return is a loss of 1.52. As shown by the Skewness and Kurtosis value of -3 and 12 respectively, return on asset is not linear this has been observed by Samuel, Julius & Samuel (2012) and Hamisu (2011).

The average rate of Non performing loan and advances to total loan and advance is 18.20 and a maximum value of 32.8 in 2009. This rate is high; however, compared to a similar rate of 78.65 in Ghana Nigerian banks are still better off (Samuel, Julius & Samuel, 2012). The number of frauds committed in Nigerian banks is also a cause for concern; it has risen mostly within the year under study. The average fraud committed in a year is 1131.27 while the highest number of fraud is 2352 which was recorded in the year 2011. A high level of fraud as indicated above is capable of scaring away foreign and local investors in the sector. The ratio of loan and advances to total deposit shows that on the average the ratio is 66.31 the highest value is 85.20 this ratio is very high and is an indication that in the event of default the banks face a very high risk. The interest rate risk measures the effect of changes in interest rate on the gap between interest rate based incomes and interest based expenses. The average rate is 1189.311 and the maximum value of the rate is 2774.88, also the gap as shown is general large for Nigerian banks.

Table 2: OLS result

Dependent Variable: ROA
Method: Least Squares
Date: 10/20/13 Time: 13:17
Sample: 1997 2011
Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-30.19944	46.65685	-0.647267	0.5336
TRWAA	0.198329	0.159626	1.242460	0.2455
NRLTL	4.825599	2.500191	1.930092	0.0857
NOFR	-0.002093	0.007764	-0.269518	0.7936
LADP	0.641348	0.462865	1.385606	0.1992
NIM	-0.087200	0.031376	-2.779190	0.0214

R-squared	0.912084	Mean dependent var	-1.524667
Adjusted R-squared	0.863242	S.D. dependent var	17.53366
S.E. of regression	6.484086	Akaike info criterion	6.865753
Sum squared resid	378.3904	Schwarz criterion	7.148973
Log likelihood	-45.49315	Hannan-Quinn criter.	6.862736
F-statistic	18.67414	Durbin-Watson stat	1.575934
Prob(F-statistic)	0.000164		

The result of the regression is presented in the table above. The results in the table above show that there is a strong relationship between the variables and the performance of Nigerian Deposit Money Bank. This is indicated by the R-squared value of 91% the remaining value of 0.09 is due to other variables that were not included in the model. The result contrary to expectation indicates that in the absence of the variables, return of the banks is reduced by 30.19% as indicate by the value of the coefficient. Also, the result shows that the ratio of total capital to risk weighted asset, non performing loan to total loan and loan ad advances has positive relationships with return on assets of the banks, though without statistical significance as shown by their respective probability values. This implies that the risk of customer credit default increases the profitability of the banks also increases. This is possible if the banks included in their lending rate the proportion of credit default, thus transferring the burden back to the customers. Similar result is also found in Samuel, Julius & Samuel, (2012) in Ghana and contrary to Hamisu (2011); Felix & Claudine (2008) and Altunbas (2005). However, frauds and Net Interest Margin have a negative relationship with profitability this is expected to be so, again the variables that affect the profitability of the banks negatively are those that are outside her control.

The overall model is fit as indicate by F statistic of 18.67 and the corresponding probability value of 0.000 which is less than the 5% test criteria use in the study. This implies that risk has significant effects on the return on assets of Deposit Money Banks in Nigeria.

Conclusion and Recommendations

Risk is a major factor that determines the success and failure of banks. The risk faced by bank range from those it has control over like credit risk and operational risk while those it has no control over are market risk and interest rate risk. This study has examine the various risk components and their effects on the financial performance of deposit money banks in Nigeria. the result indicates that a positive relationship exist between non performing loan to total asset, loan and advances to total deposit and total capital to weighted risk assets. On the other hand there exist a significant negative relationship between interest rate risk and return on asset, also a negative relationship between frauds in Nigerian banks and performance. It is concluded that risk within the control of the banks do not distort her performance however, those outside her control have negative effects on the financial performance of the banks.

This study recommends that both the Deposit Money Banks diversify the management of the other components of risk like minimising frauds instead of over concentrating on credit risk which by so doing exposing other risk. This can achieve when the Central Bank and the Deposit Money Banks intensify the implementation of existing measure to combat bank frauds.

References

Akkizidis, I. & Khandelwal, S.K. (2008). *Financial Risk Management for Islamic Banking and Finance* Palgrave Macmillan, First Edition.

Al-Tamimi, H. and Al-Mazrooei M. (2007). Banks' risk management: a comparison study of UAE national and foreign banks. *The Journal of Risk Finance*, Vol. 8, No.4, pp. 394-409.

Altunbas, S. (2005). Mergers and Acquisitions and Bank Performance in Europe - The Role of Strategic Similarities. *European Central Bank, working paper series, No.398*

Appa, R. (1996). *The Monetary and Financial System*. London Bonkers Books Ltd. 3rd Edition

Basel Committee on Banking Supervision, June (2008). Principles for sound liquidity risk management and supervision.

Felix A.T. and Claudine T.N. (2008). *Bank Performance and Credit Risk Management*, Unpublished Master Dissertation in Finance, University of Skovde retrieved from http://www.essays.se/essay/55d54c0bd4/

Hamisu, S.K. (2011). Credit risk and the performance of Nigerian banks. *Journal of Business Administration, Vol. 13 No 1 and 2.*

Khan, T. and Ahmed, H. (2001). Risk Management: An Analysis of Issues in Islamic Financial Industry. *IRTI/IDB Occasional Paper, No. 5.*

Kolapo, T.F; Ayoni, R.K. and Oke, M.O. (2012). Credit risk and commercial banks' performance in Nigeria: A panel model approach. *Australian journal of business and management research. Vol.2 No.2*

Nigerian Deposit Insurance Commission (2011). Annual Financial Report and Statement of Accounts

Onaolapo, A.R. (2012). Analysis of credit risk management efficiency in Nigeria commercial banking sector. *Far East journal of marketing and management Vol.2 No.1*

Owojori, A.A; Akintoye, I.R and Adidu, F. A (2011). The Challenge of risk management in Nigerian banks in the post consolidation era. *Journal of Accounting and Taxation. Vol.3 No.2*

Romulo, M; Maria, G and Josep, A.T. (2008). Banks's ownership structure, risk and performance. SRN working papers series, May 5 2010. http://hdl.handle.net/10016/14234

Samuel, H. B; Julius, D & Samuel, K.A (2012). Credit risk and profitability of selected banks in Nigeria. *Research journal of finance and accounting Vol.3 No7*

Umoh, P.N. (2002). An overview of risk management practices in the Nigeria banking industry. *NDIC quarterly Vol.12 No.4*

Appendix

Year	ROA	LADP	NPLTL	NIM	NOFR	TRWAA	InfR	VFR
1997	3.16	64.84	25.81	1673.52	471	59.04	10.67	3590.31
1998	4.04	66.46	19.35	1286.001	564	54.11	7.86	3129.16
1999	3.82	53.36	26.44	1410.838	182	18.96	6.62	6367.69
2000	3.78	52.45	22.31	1170.16	400	17.52	6.94	2844.2
2001	4.82	63.92	16.9	1080.248	943	17.68	18.87	11243.94
2002	2.63	58.78	21.27	1250.251	796	17.75	12.89	12919.55
2003	2	65.09	21.59	1405.293	850	14.78	14.03	9383.67
2004	2.58	63.13	23.08	1457.04	1133	13.16	15.01	8309.83
2005	0.49	65.14	20.13	1311.268	1229	21.25	17.85	10606.18
2006	2.65	75.6	7.92	598.752	1193	22.57	8.24	4832.17
2007	3.64	81.02	8.3	672.466	1553	21.09	5.38	10005.85
2008	4.29	85.2	6.25	532.5	2007	10.24	11.6	53522.86
2009	-64.72	84.6	32.8	2774.88	1764	21.91	12.4	41265.5
2010	3.91	59.23	15.04	890.8192	1532	4.06	13.7	21291.41
2011	0.04	55.95	5.82	325.629	2352	17.71	10.9	28400.46

ROA	Return on Asset
LADP	Loan and Advances to Deposit
NPL/TL	Non Performing Loan to Total Loan and Advances
NIM	Net Interest Margin
NOFR	Number of Frauds
TRWAA	Total Capital to Weighted Risk Assets
VFR	Value of Fraud