Effect of Financial Risk on Financial Performance of Quoted Commercial Banks in Nigeria

[1]Eyide Michael Ugeoritsete* [2]Dr. Mbonu Chikwelu Maduabuchi, [3]Prof. Ugochukwu Nzewi

[1] Department of Accounting, College of Management and Social Sciences,

Novena University, Ogume, Delta State, Nigeria

Email: eyidemichael@yahoo.com

*Corresponding author

[2] Department of Accountancy, School of Financial Studies

Federal Polytechnic Oko, Anambra State, Nigeria

Email: chikwelumbonu@gmail.com

[3] Department of Accounting and Finance, Faculty of Management Sciences,

Paul University, Awka, Anambra State.

Email: ugochukwuonwa@yahoo.com

Abstract: *This study sought to ascertain the effect of Financial Risk on Financial Performance of quoted Commercial Banks in Nigeria from 2010-2019 using a sample of thirteen (13) commercial banks. Ex-Post Facto research design was employed while secondary data were collected and subjected to panel least square regression and correlation analysis to achieve the study objectives. Financial Risk, which is the independent variable, was measured by Credit Risk and Operational Risk, while Financial Performance, which is the dependent variable, was measured by Return on Equity. Results of the study suggested that Operational Risk has a significant negative effect on Return on Equity, while Credit Risk has a significant positive effect on Return on Equity. This study recommended among others that, Commercial Banks should comply with relevant provisions of the Banks and Other Financial Institutions Act (1999) as amended and the Prudential Guidelines.*

Keywords: liquidity risk; market risk; operational risk; return on equity.

1. Introduction

Risks are uncertainties that are evident in every business. Financial institutions such as banks are vulnerable to several types of risks which include credit risk, interest rate risk, liquidity risk, market risk, foreign exchange risk, currency risk, commodity risk and operational risk. Credit risk, also referred to as default risk, is the kind of risk that gives rise to a borrower default on the inability of remitting payments as agreed, thereby, leading to loss, which could be the form of outright default or alternatively, losses from changes in portfolio value arising from actual or perceived deterioration in credit quality that is short of default.

1

1(2022)1

Financial risk is the unexpected variability or volatility of returns. It includes credit, liquidity and market risks which contribute to the volatility of financial performance (Amahalu & Obi, 2020). The proposition is that financial risk causes poor financial performance, if handled improperly. All financial decisions in a business setting is connected to risk and most of the risks are commonly found in financial institutions; ranging from banks to microfinance institutions, these include credit risk, liquidity risk, market or pricing risk, operational risk, compliance and legal risk, and strategic risk (Tomak, 2013). One of the major propelling factors in the financial markets today is deregulation. Extant literatures have shown that the deregulation of capital flows has led to increased globalization; deregulation of industries has led to the offspring of industries; and with the deregulation of financial operations new risks have been acquired with some banks offering insurance products and insurance companies writing market and credit derivatives. In the light of the foregoing, it is of paramount relevance to obtain a comprehensive view of the key specific factors that influence the performance of banks.

1.1 Statement of the Problem

The management of financial risk in the banking sector have been faced with challenging issues thereby resulting to poor performance associated with ambiguous statement of financial position, bank failure and financial crisis causing a systemic risk invariably having a negative effect on economic growth in the long run. Among the financial risks faced by banks, credit risk, operational risk and liquidity risk assumes a vital function on banks performance since huge amount of banks revenue are from credit because of interest charged on credit. To this end, the need for financial risk management in the banking sector is sacrosanct in the operational activities of banks.

Various studies conducted have failed to establish a definite relationship between financial risk and performance of banks. Akong'a (2014) and Tanveer, Muhammad & Sadaf (2017) showed a significant positive relationship between financial risk and performance of banks. On the other hand, Uwalomwa, Uwuigbe and Oyemo (2015) and Muriithi (2016) found a significant negative relationship between financial risk and performance of banks. Similarly, Khalaf (2012) found no significant relationship between financial risk and financial performance of listed banks. While the above research outcomes provide valuable insights on financial risk management, they have not been able to show a clear relationship between financial risk and performance of commercial banks, thereby creating a lacuna. Given the gap poised by the above empirical studies, this study sought to fill the existing research gap by ascertaining the effect of financial risk on financial performance of commercial banks in Nigeria.

1.2. Objectives of the Study

The main objective of this study is to determine the effect of Financial Risk on Performance of quoted Commercial Banks in Nigeria.

The specific objectives of this study are to:

i.   Ascertain the effect of Credit Risk on Return on Equity of quoted Commercial Banks in Nigeria.

ii.   Determine the effect of Operational Risk on Return on Equity of quoted Commercial Banks in Nigeria.

1.3. Research Hypotheses

In line with the objectives of this study, the following null hypotheses were formulated:

H_{01}: Credit Risk has no significant effect on Return on Equity of quoted Commercial Banks in Nigeria

Ho₂: Operational Risk has no significant effect on Return on Equity of quoted Commercial Banks in Nigeria.

2. Conceptual Review

2.1. Financial Risk

Financial risk is the risk that entails financial loss to firms. Financial risk generally arises due to instability and losses in the financial market caused by movements in stock prices, currencies, interest rates and more (Eshna, 2017). Financial risk is the probability that shareholders will lose money in their investment in a company that has debt, on the condition that the cash flow of the entity is inadequate to pay its financial obligations (Amahalu, Obi, Abiahu & Ezechukwu, 2017). Financial risk can be classified into various types such as Market Risk, Credit Risk, Liquidity Risk and Operational Risk.

2.2. Credit Risk

Credit risk also known as default risk is the risk that relates to borrowers of fund and are incapable of repaying the money they borrowed, thereby classifying such people as defaulters. Credit risk is the risk businesses suffer by granting credit facilities to customers. (Peavler, 2017). A business concern ought to properly manage its own credit obligations by making sure that there is availability of cash flow to offset its accounts payable bills as they fall due, if not, suppliers may either put an end to granting them credit facilities, or probably terminate every kind of business dealings with the business entity.

2.3. Operational Risk

Operational risk refers to the various risks that emanates out of ordinary course of business operations such as lawsuits, fraud risk, personnel problems, and business model risk, which is, the risk that a company's models of marketing and growth plans, may prove to be wrongly or poorly executed. Operational risk arises out of operational failures such as mismanagement or technical failures (Mudanya & Muturi, 2018).

2.4. Financial Performance

Financial performance is the measuring of bank's policy and operations in monetary form. It reveals the holistic financial health of a firms for specific time frame and lends credence to the comparability of several banks across the banking industry at a particular point in time. Shetty and Yadav (2019) defined financial performance as a general measure of how well a bank realises revenues from its capital. Wamalwa and Mukanzi (2018) sees financial performance as a subjective measure of how well a firm utilises its resources from primary means of business to realise income.

2.5. Return on Equity (ROE)

The return on equity (ROE) is a measure of how well a company makes use of its investments to realize more money. The return on equity ratio or ROE is a profitability ratio that measures the ability of a firm to generate profits from the investments of the company shareholders. In other words, the return on equity ratio shows how much profit each naira of common stockholders' equity generates. So, a return on 1 means that every naira of common stockholders' equity generates 1 naira of net income.

$$ROE = \frac{Net\ Income}{Shareholder\ Equity} \times 100$$

2.6. Credit Risk and Return on Equity

Credit risk poses a threat to the performance of banks which when overlooked may cause an eventual bank liquidation (Serwadda, 2018). Chipa and Wamiori, (2017), Mardiana and Dianata (2018) found a positive but insignificant relationship between credit risk and return on equity. Kalu, Shieler and Amu (2018) revealed a negative relationship between credit risk and return on equity. On the other hand, Lelgo and Obwogi, (2018) showed that sound credit risk management impacted positively on bank financial performance.

2.7. Operational Risk and Return on Equity

Operational Risk management forms an essential constituent of the decision making process and proper risk management can effectively help to surmount the chances of business mishaps. Olalekan, Olumide and Irom (2018) established a positive and significant relationship between return on equity and operational risk. Paulinus and Jones (2017) found a negative and significant relationship between return on equity and operational risk. Juma & Atheru (2018) evidenced a positive effect of operational risk on return on equity.

2.8. Theoretical Framework

2.8.1. Modern Portfolio Theory (MPT)

Modern portfolio theory (MPT) is a theory on how risk-averse investors can construct portfolios to optimize or maximize expected return based on a given level of market risk, emphasizing that risk is an inherent part of higher reward. This theory was pioneered by Harry Markowitz in his paper "Portfolio Selection," published in 1952 by the Journal of Finance. A major insight provided by MPT is that an investment's risk and return characteristics should not be viewed alone but should be evaluated by how the investment affects the overall portfolio's risk and return. MPT shows that an investor can construct a portfolio of multiple assets that will maximize returns for a given level of risk. Likewise, given a desired level of expected return, an investor can construct a portfolio with the lowest possible risk.

2.8.2. Empirical Review

Taiwo, Ucheaga, Achugamonu, Adetiloye, Okoye and Agwu (2017) investigated into the quantitative effect of credit risk management on the performance of Nigeria's Deposit Money Banks (DMBs) and Bank lending growth over the period of 17 years (1998-2014). Secondary data for empirical analysis were obtained from CBN Statistical bulletin 2014 and World Bank (WDI) 2015. The study employed multiple linear regression model to analyze the time series data. The result showed that sound credit management strategies can boost investors and savers confidence in banks and lead to a growth in funds for loans and advances which leads to increased bank profitability. The findings revealed that credit risk management has an insignificant impact on the growth of total loans and advances by Nigerian Deposit money banks. The study therefore recommended that DMBs in Nigeria should strictly adhere to their credit appraisal policies which ensures that only credit worthy borrowers have access to loanable funds. Banks are to ensure that funds are allocated to borrowers with decent high credit ratings.

Zhongming, Frimpong and Guoping (2019) studied the impact of some financial risk indicators on the performance of fifteen selected commercial banks in Ghana from 2010-2017. The indication from the augmented Dickey-Fuller unit root test results showed that the data series after first difference at the first order achieved stationarity. The analysis of the data revealed the existence of significant long run relationship between bank financial performance and the variables of financial risk in the banking sector. The granger causality test results revealed that there is unidirectional causality flowing from the variables of financial risk. This suggests

4

that the indicators of financial risk strongly and actively stimulate and improve the financial performance of banks in Ghana. The study recommended that bank managers should improve on the management of all the indicators of financial risk variables in order to improve on the achievement of the objective of the firm.

Sathyamoorthi, Mogotsinyana, Mphoeng, Mashoko (2020) examined the impact of financial risk management practices on the financial performance of commercial banks in Botswana. The study used Return on Assets and Return on Equity to measure financial performance. Inflation, Interest rates, total debt to total assets, total debt to total equity, total equity to total assets and loan deposit ratios were used as proxies for financial risk management. The research population was all the 10 commercial banks in Botswana and the study covered a period of 8 years from 2011 to 2018.This descriptive study sourced monthly secondary data from Bank of Botswana Financial Statistics database. Descriptive statistics, correlation and regression analyses were applied to analyze the data. The results from regression analysis showed that interest rates had a negative and significant impact on return on assets and on return on equity. However, loan deposit ratio indicated a negative and significant impact on return on assets and on return on equity.

3. Methodology

3.1. Research Design

This study utilised *Ex-post Facto* research design in conducting the research.

3.2. Population of Study

The population for this study consists of the fourteen (14) commercial banks listed on the Nigeria stock Exchange as at 31st December 2019. These banks are as follows; Access Bank Plc; First Bank Plc; FCMB Plc; GTB Plc; Jaiz Bank Plc; Zenith Bank Plc; Sterling Bank Plc; UBA Plc; Fidelity Bank Plc; Stanbic IBTC; Union Bank Plc; Unity Bank Plc; Wema Bank Plc; Eco Bank Plc.

3.3. Sample Size and Sampling Technique

Purposive sampling technique was employed to arrive at thirteen (13) commercial banks that were considered as sample size for this study. The thirteen commercial banks were purposively selected based on the availability and completeness of data set for the studied period (2010-2019). They include: Access Bank Plc; First Bank Plc; FCMB Plc; GTB Plc; Zenith Bank Plc; Sterling Bank Plc; UBA Plc; Fidelity Bank Plc; Stanbic IBTC; Union Bank Plc; Unity Bank Plc; Wema Bank Plc; Eco Bank Plc.

3.4. Source of Data

The data used in this study were collected mainly from secondary sources. These data were obtained from annual reports and accounts, Nigeria stock exchange publications for the sampled banks.

Variable Description / Operationalisation of Variables

Variables (code)	Operational Definitions
Dependent Variable (Performance)	
Driver:	
Return on Equity (ROE)	Net income/Shareholder's Equity
Independent Variable (Financial Risk)	
Proxies:	

Credit Risk (CR)	Non-Performing Loans /Total Loans
Operational Risk (OPR)	Operating Expenses /Operating Income
Control Variable	
Firm Size (FSZ)	Natural logarithm of total asset

3.5. Model Specification

Panel least square (PLS) regression equation was set up to evaluate the hypothesized relationships between the dependent variable and the independent variables of the study. The econometric form of the equation is given as:

$$ROE_{it} = \beta_0 + \beta_1 CR_{it} + \beta_2 FSZ_{it} + \epsilon_{it} \qquad - \qquad - \qquad - \qquad - \qquad \textbf{Ho}_1 \quad ROE_{it} = \beta_0 + \beta_1 OPR_{it} + \beta_2 FSZ_{it} + \epsilon_{it} \qquad - \qquad - \qquad - \qquad - \qquad \textbf{Ho}_2$$

Legend:

ROE_{it} = Return on Equity (Dependent Variable) for bank í in period t

CR_{it} = Credit Risk (Independent Variable) for bank í in period t

OPR_{it} = Operational Risk (Independent Variable) for bank í in period t

FSZ_{it} = Firm Size (Control Variable) for bank í in period t

ϵ_{it} = The error term which account for other possible factors that could influence Y_{it} that are not captured in the model.

í: individual banks

t: annual time periods

4. Data Presentation and Analysis

Table 1 Pearson Correlation Matrix

	ROE	CR	OPR	FSZ
ROE	1.000	0.358	-0.177	-0.821
CR	0.358	1.000	-0.379	0.461
OPR	-0.177	-0.379	1.000	-0.591
FSZ	-0.821	0.461	-0.591	1.000

Source: Researcher's Computation, 2020

Interpretation on Correlation Matrix

From the findings on the correlation analysis in table 1, the study found that there was negative correlation coefficient between OPR, FSZ and ROE by correlation factors of -0.177 and -0.821 respectively. However, CR and ROE were found to have positive correlation with correlation coefficients of 0.358.

4.1. Test of Hypotheses

Test of Hypothesis 1

Ho1: Credit Risk has no significant effect on Return on Equity of quoted Commercial Banks in Nigeria.

H$_1$: Credit Risk has significant effect on Return on Equity of quoted Commercial Banks in Nigeria.

Table 2 Panel Least Square Regression Analysis between Credit Risk and ROE

Dependent Variable: ROE				
Method: Panel Least Squares				
Date: 13/09/2020 Time: 18:47				
Sample: 2010-2019				
Periods included: 10				
Cross-sections included: 13				
Total panel (balanced) observations: 130				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.723030	0.654781	4.158686	0.0001
CR	0.116640	0.224452	2.819664	0.0041
FSZ	-0.164348	0.060960	-2.695987	0.0078
R-squared	0.647230	Mean dependent var		0.985200
Adjusted R-squared	0.534267	S.D. dependent var		0.891996
S.E. of regression	0.876580	Akaike info criterion		2.594220
Sum squared resid	112.9537	Schwarz criterion		2.654433
Log likelihood	-191.5665	Hannan-Quinn criter.		2.618683
F-statistic	9.643458	Durbin-Watson stat		1.638455
Prob(F-statistic)	0.000552			

Source: Researcher's Computation, 2020

Interpretation of Multivariate Regression Result

In table 2, a panel least square regression analysis was conducted to test the influence of credit risk on return on equity. Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable. From the findings in the table 2, the value of adjusted R squared was 0.534, an indication that there was variation of 53.4% on the performance measure (ROE) due to changes in CR and FSZ. This shows that only 53.4% changes in return on equity ratio of commercial banks could be accounted for by credit risk and firm size. The probability of the slope coefficients indicate that; $P(x_1 = 0.0041 < 0.05; x_2 = 0.0078 < 0.05)$. The co-efficient value of 0.116640 for CR implies that ROE is positively related to CR, however statistically significant at 5%. The Durbin-Watson Statistic of 1.638455 suggests that the model does not contain serial correlation problem. The F-statistic of the ROE regression is equal to 9.643458 and the associated F-statistic probability is equal to 0.000552, so the null hypothesis was rejected, and the alternative hypothesis was accepted. As a result, there is linear relationship of ROE to the independent variable (CR).

Decision

Since the result of the Prob(F-statistic) of 0.000552 is less than the critical value of 5% significance level, leading to the conclusion that credit risk have a significant positive effect on ROE at 5% significant level, hence, H$_1$ is accepted.

4.2. Test of Hypothesis II

Ho₂: Operational Risk has no significant effect on Return on Equity of quoted Commercial Banks in Nigeria.

H₂: Operational Risk has significant effect on Return on Equity of quoted Commercial Banks in Nigeria.

Table 3 Panel Least Square Regression Analysis between Operational Risk and ROE

Dependent Variable: ROE				
Method: Panel Least Squares				
Date: 13/09/2020 Time: 19:25				
Sample: 2010-2019				
Periods included: 10				
Cross-sections included: 13				
Total panel (balanced) observations: 130				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.595043	0.618567	4.195248	0.0000
OPR	-0.404003	0.929186	-2.643793	0.0089
FSZ	-0.161263	0.060443	-2.668012	0.0085
R-squared	0.646705	Mean dependent var		0.985200
Adjusted R-squared	0.533735	S.D. dependent var		0.891996
S.E. of regression	0.876821	Akaike info criterion		2.594770
Sum squared resid	113.0159	Schwarz criterion		2.654983
Log likelihood	-191.6078	Hannan-Quinn criter.		2.619233
F-statistic	8.601025	Durbin-Watson stat		1.517134
Prob(F-statistic)	0.004730			

Source: Researcher's Computation, 2020

Interpretation of Regressed Result

Table 3 showed the results of regression model of ROE. The coefficients of OPR has a t-statistic equal to -2.643793 and a p-value equal to 0.0089; FSZ has a t-statistic equal to -0.161263 and a p-value equal to 0.0085. This implies that OPR and FSZ negatively and significantly relate with ROE. The adjusted R–squared of the ROE model is equal to 0.534, which indicates that 53.4% of the variation in ROE is explained by the regression variables.

The Durbin-Watson value of 1.517134 is an indication of the absence of auto-correlation problem in the model of this study. The value for the F-statistic is 8.601025 with an associated p-value of 0.004730.

Decision

Based on Prob(F-statistic) value of 0.004730, which is less than the critical significance value of 5%, this invariably means that operational risk has a significant negative effect on ROE of Commercial Banks in Nigeria. Hence H₂ is accepted.

4.3. Findings, Conclusion and Recommendations

4.3.1. Summary of Findings

Based on the analysis of data, the following findings emerged:

    i. Credit Risk has a significant positive effect on Return on Equity of Deposit Money Banks listed on Nigeria Stock Exchange at 5% significant level.

ii. Operational Risk has a significant negative effect on Return on Equity of Deposit Money Banks listed on Nigeria Stock Exchange at 5% significant level.

4.3.2. Conclusion

This study assessed the effect of financial risk on financial performance. This study obtained data from annual reports and accounts and publications from Nigeria Stock Exchange for Commercial Banks that operated during 2010-2019. In addition, the researchers also access the effects of specific financial risk variables, such as credit risk and operational risk on return on equity. To determine the relationship that exists amongst the variables and the effect thereof, Pearson correlation coefficient and Panel Least Square regression estimate were employed. This study revealed that operational risk has a statistically significant negative effect on return on equity at 5% level while, credit risk has significant positive effect on return on equity at 5% level of significance.

4.3.3. Recommendations

Consequent upon the findings and conclusions drawn from this work, the following recommendations were made:

i. Since Credit Risk has a positive effect on Return on Equity, Deposit Money Banks should improve on proper credit evaluation of potential borrowers and lending of funds should be allocated to prime borrowers.

ii. Banks should comply with relevant provisions of the Banks and Other Financial Institutions Act (1999) as amended and the Prudential Guidelines in an attempt to correct the inverse effect of Operational Risk on Return on Equity.

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