



EFFECT OF FIRM RISKS AND RISK MANAGEMENT COMMITTEE ON THE PERFORMANCE OF LISTED DEPOSIT MONEY BANKS IN NIGERIA (2012-2019)

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Abstract

An evaluation into the causes of increasing failure of banks operating in Nigeria revealed that inability of institutions to proactively manage the inherent risks related to business operations were the key causes. This study examined the effect of firms' risk and performance of banks in Nigeria. The study adopted longitudinal research methodology in investigating the effect of firm risk determinants measured by credit risk, liquidity risk, operational risk, solvency risk, capital adequacy risk, market risk, foreign exchange risk; and risk management committee on the banks' performance. Secondary data obtained from the annual financial statements of the firms for the periods of 2012-2019 were used in the analysis. The study utilized panel data regression model to estimate the direct and moderating relationship. Findings from the analysis revealed the existence of positive significant effects of solvency risk, capital adequacy risk, market risk; and risk management committee on performance. The study also revealed the existence of positive insignificant effect of credit risk, liquidity risk and foreign exchange risk on performance; while significant negative effect of operational risk on performance was revealed. It was also established that recession periods have both positive and negative influence in the relationship between firms risk and performance of banks in Nigeria. In the overall, the study concluded that firms' risks determinants have significant effect on the performance of banks in Nigeria. Therefore, the study recommends that the apex regulators should re-assure that the financial service firms should be committed to setting all risk management policies and programs.

Key words: Firm Risk, Risk Management Committee, Financial Performance

1. INTRODUCTION

The banking sector of any country is regarded as the heart of the nation's economy, and its success basically relied on the level of public trust and confidence. Poor performance of the sector could eventually result in loss of confidence as regards to the ability of the institutions operating in the sector to efficiently manage their operations in strategic areas attributable to high risk (Schwerter,



2011). Banking sector performance can be determined by some specified internal and external determinants. These determinants are those elements that were influenced largely by banks' managerial decisions, established strategic objectives as well as the market and the inherent risks within their operational domain. These elements are popularly referred to as the CAMELS performance rating (Aspal & Dhawan, 2016; Rostami, 2015; Yuksel *et al.*, 2016). Empirical investigation have revealed that these elements have exerted varied influence on banks' performance (Chen *et al.*, 2018; Harelimana, 2017; Udom *et al.*, 2018; Vig *et al.*, 2017) within the economies of most developed and developing nations.

In Nigeria, banking sector have experience rapid growth and increased integration into regional and global financial systems (CBN, 2012). At the core of the system is the conventional banking sector dominated by six banks out of 23 in total in the year 2020, with the concentration ratios of the largest six banks (CR6) at 68.1 in deposits and 65.2 in assets. The total assets of the nation's banking sector grew 15.08 per cent year-on-year to N53.17 trillion by April 2021, from N46.20 trillion in the year 2020 (CBN, 2021). This is a clear indication of the rise in the sector's assets by N6.97 trillion within one year in spite of the effect of the Coronavirus pandemic on economic activities. Also, total credit from the sector to the economy rose 15.26 per cent in the same period of April 2020 and April 2021. This was true based on the broad-based policy response by the federal government through the Central Bank of Nigeria (CBN) as the apex regulating body, supported by the Nigerian Deposit Insurance Corporation (NDIC), which assists in maintaining improved financial stability in the face of major external shocks (Sanusi, 2012).

However, banking institutions in Nigeria have witnessed deteriorating performance due to problems associated with poor risk management practices and regulatory lapses (CBN, 2018). The contagious effect of poor risk management practices resulted in stock market crash, credit crunch, revenue decline, poor capitalization, and persistent illiquidity in most of the financial service firms (CBN, 2018; Lotto, 2017). Moreover, the health of financial firms within the sector was negatively affected by the challenging business and macroeconomic environment, which in turn, deteriorated their performance (Awoyemi & Nwibe, 2022; CBN, 2018). Other problems observed include decline in capital asset ratios and liquidity ratios; high exposure to the oil and gas sector and capital markets; accumulation of high non-performing loans occasioned with relatively high provisioning; and persistent increase in inflation rate, (CBN, 2017). Therefore, the combined effects of the aforementioned challenges and other macroeconomic instabilities launched severe challenges in the banking sector in 2016 which threatened the stability of the banking system (CBN, 2018a). These quested for the need to examine the effect of such challenges on the health and soundness of the banking sectors most especially by academic researchers, practicing managers, and regulators concerned within the sector.

Although, the Central Bank of Nigeria (CBN) has been putting greater effort to ensure sound risk management practices in financial service firms. Part of these efforts has to do with the facilitation of the implementation of Risk-Based Supervision (RBS) established under the Basel III accord (CBN, 2019). The policy guideline establishing the RBS approach provided accurate direction for financial institutions to develop sound risk management framework on an enterprise-wide basis. As a regulatory guideline, RBS approach provided that institutions' board of directors should develop an independent structure (the Board Risk Management Committee, BRMC) responsible for strengthening firms' activities towards achieving the best risk managements practices and



improve performance (CBN, 2019). According to requirement by the CBN (2019), the BRMC has its oversight functions that cut across all risk areas arising from the overall internal firms' operation and external forces.

Even though, previous empirical studies have documented the various determinants of risk (Aebi et al., 2012; Bekele, 2016; Gathigia Muriithi, 2016; Mardiana, 2018; Ramzan & Zafar, 2014) with varying influence on banks performance (Amit & Wernerfelt, 2018; Léautier & Rochet, 2014; Mu et al., 2009). Similarly, past studies have theoretically established the existence of relationship between risk components (Al-Tamimi, Miniaoui, & Elkelish, 2015; Alcock & Steiner, 2017; Chen, Shen, Kao, & Yeh, 2018; Dahiyat, 2016; Ekinci, 2016; Harelimana, 2017; Raza, 2017; Sempabwa, 2017; Udom & Onyekachi, 2018). In essence, some of these studies revealed a positive relationship between the different risk components and performance (Harelimana, 2017; Sempabwa, 2017; Udom et al., 2018) while others revealed negative relationship with bank performance (Dahiyat, 2016; Harelimana, 2017; Udom *et al.*, 2018).

In spite all of the above-mentioned past empirical researches on the effect of different risk components on firms' performance, an insight into the empirical literature indicate that less concern has been given to explore the combined effect of financial regulations, most especially the role of risk management committee in the management of those inherent risks on performance outcome (Shaddady & Moore, 2019). Even the identified studies were tailored on identifying the effect of the various risk components on performance for banks' internal strategic actions to the neglect of regulatory effort towards mitigating the effects of these risk for performance outcome. Even though, it is of eminence fact that measuring the effect of financial supervision appeared to be practically and empirically untried area (BIS, 2015; Shaddady & Moore, 2019). Therefore, it is against this background that this study seeks to investigate the effect of firms' risk and board risk management committee on the performance of banks in Nigeria.

Theoretically, this study offered its contribution to the body of literature in understanding the effort of BRMC in strengthening the relationship between firms' risks and performance of financial firms. Practically, the study is significant to the firms' management in understanding the extent of the commitment put forward by the institutions' BRMC to proactively identify the possible exposure from inherent firms' risks; and to efficiently design plans, policies and actions for mitigation. Moreover, the study is of immense importance to CBN and NDIC, being the apex regulatory bodies responsible for designing, developing and implementing policies and guidelines that guarantee the safety, soundness, and efficient performance of financial institutions.

2. LITERATURE REVIEW AND THEORY

2.1 Concept of Performance

Performance can be seen as a form of a comprehensive effort toward effective and efficient attainment of the established goals, through holistic application and utilization of human, material and financial resources (Ambika, 2015; Latif et al., 2013) which is determined by both internal and external factors.

Internal factors include institutions' size, capital risks, credit risk, and liquidity risk, operational risks and the solvency risks (Chen *et al.*, 2018; Harelimana, 2017; Kyule, 2015; Ogungbade & Idode, 2016; Udom *et al.*, 2018; Vig *et al.*, 2017). These factors largely reflect internal elements



and as such focus mainly on institutions' distinct characteristics. On the other hand, external performance determinants include annual real Gross Domestic Product growth rate (GDP) and inflation (INF) expressed by annual inflation rate measured as the consumer prices (Căpraru & Ilnatov, 2014; Chortareas et al., Duraj & Moci, 2015). Empirical justification revealed that these variables have a varying positive/negative significant/insignificant impact on institutions' performance.

Performance in this study is seen as the ability of firms to effectively generate sufficient amount of income due to efficient utilizations of its assets. ROA largely depends on the institutions' policy decisions and other external factors that relate to the economy and government regulations (Adam, 2014; Molyneux & Thornton, 1992; Naceur & Omran, 2011).

2.2 Concept of Firm Risks

Risk is defined as the exposure to loss and the potential for unpredictable occurrence of an event which would result to adverse effect on the established goals and objectives of an enterprise. Bajaj (2007) considered risk as the possibility of events, whether planned or unanticipated which may have an implication on the organisation's overall capital and earnings. Risks are categorized into different components which can result from both firm specific, sector-wide (macro-prudential) and economic-wide (macroeconomic). These can be categorised into and not limited to credit risk, liquidity risk, operational risk, solvency risk, capital adequacy risk market risk, foreign exchange risk, reputation, and political risk. These risks components emanate as a result of uncertainty resulting out of the firms the overall operation or from external forces.

2.2.1 Credit Risk

BCBS (2018) defined credit risk as the risk of default by which counterparty will fail to fully discharge his financial obligations or the guarantor failing to meet obligations. Dendramis, Tzavalis and Adraktas (2017) opined that credit risk is seen as the probability of a loan default which has to do with the possibility of the borrower's inability to meet his/her periodic payments, due to the unexpected changes in the overall macroeconomic characteristics.

Past empirical efforts have revealed the existence of relationship between various indicators of credit risk and performance. For instance, Isanzu (2017), Million, Matewos and Sujata (2016) investigated the impact of credit risk and financial performance of Chinese banks. NPL, capital adequacy ratio, impaired loan reserve, and loan impairment charges were used to measure credit risk and found a significant positive effects on performance. Nwude and Okeke (2018) and Marshal and Onyekachi (2014) investigate the impact of credit risk management on performance of DBSs. Non-performing loans and ratio of loan and advances to total deposit to measure credit risk. The construct revealed a positive significant impact performance. Hamza (2017), Ozurumba (2016), Adekunle, Alalade and Agbatogun (2015) Boahene, Dasah and Agyei (2017) and Ashraf et al. (2014) used ratio of loan loss provision, total loan and advances, NPL and total capital asset to measure credit risk. Their findings revealed a negative effects of the constructs on financial performance. Similar study by Poudel (2012) measured credit risk using default rate and cost of per loan assets. A significant negative effect of default rate on performance was revealed, while and a negative insignificant effect between cost of capital and the performance indicator was documented. Thus, empirical findings on the effects of credit risk on performance is mixed and



inconclusive. Based on the prevailing discussion, the need to re-examine the effect of credit risk on performance is important. Hence, the study hypothesizes that:

Ho₁: Credit risk does not significantly affect the performance of listed deposit money banks in Nigeria.

2.2.2 Liquidity Risk

Liquidity risk in banking sector has appeared to be a major concern for both domestic and international financial policy makers with anticipated delivery of supervisory requirements within an aspiring timeline; and its efficient management has appeared to be a strategic need for survival (BCBS, (2013). According to Gârleanu and Pedersen (2007), it measures the extent a financial firm is capable of converting its assets into cash quickly without running into capital loss.

Moreover, review of past studied revealed divergent results on the effect of liquidity risks on firms' performance. For instance, Chen et al. (2018) investigated the relationship between liquidity risk and the performance of commercial banks in 12 advanced countries (Australia, Canada, France, Germany, Italy, Japan, Luxembourg, Netherlands, Switzerland, Taiwan, United Kingdom and United States). Liquidity risk was measured by financing gap ratio (FGAPR). It was revealed that liquidity risk is negatively related to bank performance in market-based financial system. Also, Ly (2016) measured liquidity risk by the ratio of liquid assets to total assets (LIQ) and Interbank assets to interbank liabilities, and revealed a negative significant relationship between liquidity risk and performance. However, Marozva (2016) investigated the relationship between liquidity and banks performance in South Africa. Liquidity risk was measured by the Ratio of liquid assets to current liabilities and funding liquidity risk represented by loan-to-deposit ratio (LTDR). The result revealed a positive insignificant relationship between market liquidity risk and performance. Therefore, findings from empirical literature on the effects of liquidity risk on performance is yet to be resolved. Based on the prevailing discussion, the study hypothesizes that:

Ho₂: Liquidity risk does not significantly affect the performance of listed deposit money banks in Nigeria.

2.2.3 Operational Risk

Recurrent failures in financial firms' operation have driven regulatory authorities to re-examine the importance of effective and efficient functioning of firms' internal control systems. Basel Accord defined operational risk as the *"risk of loss resulting from inadequate or failed internal processes, people, and systems or from external events"* (BCBS, 2006, 2011). CBN, (2014) defined operational risk as the risk which stems from the failure of people and processes within an organization. It arises as a result of the breakdown of internal procedures, people, policies and system as well as external developments.

There exists divergent argument by researchers regarding the implication of operation risk on performance. For instant, Muriithi (2017), Soyemi, Ogunleye and Ashogbon (2014) and Mathuva (2009) used cost income ratio to measure the effect of operational risk and performance and revealed a negative and significant effect. Hoseininassab, Yavari, Mehregan and Khoshshima (2013) used return on asset volatility, stock return volatility and stockholders' equity as the operational risk measurements to study the impact of operational risks on the banking sector efficiency and the outcome revealed a negative insignificant relationship. Moreover, Lyambiko (2015) used the ratio of Operating expenses to net operating income to measure the effect of

operational risks on the performance of commercial banks, and the result revealed positive effect between operational risk and performance. Other indicators used in measuring operational risks by researchers include operating efficiency ratio, asset utilization ratio and efficiency ratio indicated by the total overheads to total assets (Imane, 2015; Zahisyam *et al.*, 2017). Hence empirical findings on the effects of operational risk on performance is yet to be resolved. Based on the prevailing discussion, the study hypothesizes that:

H₀₃: Operational risk does not significantly affect the performance of listed deposit money banks in Nigeria.

2.2.4 Solvency Risk

According to Dhaene, Vanduffel, Goovaerts, Kaas, Tang, and Vyncke (2006), solvency is defined as the firm's prospects to settle its liabilities on its immediate liquidation or its ability to transfer its liabilities to a willing partner. Aldasoro and Park (2018) assert that solvency measures the ability of an institution to settle both its short-term and long-term obligations. Ferrouhi (2014) defined solvency as the ability of a firm to meet its long-term expenses and to attain long-term growth and expansion. This is also in line with the definition given by Gryglewicz (2011) a 'financial firm is solvent for regulatory purposes when its assets exceed its liabilities by the regulatory minimum margin'.

To measure solvency risks, a number of approaches were employed by researchers. For instance, Kyule (2015) used the ratio of shareholders' funds to total liabilities as a solvency indicator to study the impact of solvency on the financial performance of firms listed at the Nairobi Securities Exchange and the result revealed a negative significant effect of solvency on performance, Ofosehene and Amoh (2016) and Abdullah (2016) used the ratio of book value of equity capital to total assets as the bank solvency indicator to study the extent of risk management and performance of listed banks. The result revealed the evidence of positive/negative significant effect of solvency risks and performance. Hence empirical findings on the measurement and effects of solvency risk on performance is yet to be resolved. Based on the prevailing discussion, the study hypothesizes that:

H₀₄: Solvency risk does not significantly affect the performance of listed deposit money banks in Nigeria.

2.2.5 Capital Adequacy Risk

Capital adequacy by its nature, measures the amount of firm's capital expressed as a percentage of its risk weighted credit exposures (Abou-El-Sood, 2017; Ogboi & Unuafé, 2013). In a view by Abdul Karim, Hassan, Hassan and Mohama, (2014), capital Adequacy can be seen as the percentage ratio of a financial institution's primary capital to its assets which is used to measure the firm's financial strength and stability. The term is seen as the quantum of fund, which a financial institution should have and plan to maintain in order to conduct its business prudently. Scott (2007) contended that higher and complex proportion of capital would have a better stance to safeguard financial institutions against unsecured risks that may result in severe financial losses. Past empirical evidences have revealed the existence of relationship between capital adequacy risk measures and performance Ikpefan (2016) measured capital adequacy using ratio of shareholders' fund (SHF) to total assets (TA), and revealed a negative significant impact of capital adequacy and ROA, and a negative insignificant impact of ROC. Ly (2016) measured capital adequacy as regulatory capital requirement, and revealed a positive significant relationship between capital regulatory index and performance. Kyule (2015) used firms' capital expense to total assets as the



capital indicator, and revealed a positive insignificant relationship between capital adequacy and the firms' financial performance. Muhlnickel, Felix, Anne-Christine and Weiß (2016) used Firms' average Tier 1 capital ratio as the capital indicator, and the result from the analysis revealed positive significant relationship between capital and performance. Therefore, empirical evidences on the effects of capital adequacy risk on performance is yet to be resolved. Based on the prevailing discussion, the study hypothesizes that:

H₀₅: Capital adequacy risk does not significantly affect the performance of listed deposit money banks in Nigeria.

2.2.6 Market Risk

Market risk is defined as the potential losses in an institution's on-balance sheets and off-balance sheet items caused due to adverse changes in market prices (Duran & Lozano-Vivas, 2013; McCauley, 2013; Tan & Floros, 2012). It is the likelihood of losing money due to unexpected changes in market prices, the consequences which can negatively affect the institution's earnings CBN (2018). Moreover, this form of risks does not only appear from market changes, but also from such actions that market participants might take on themselves, with the expectation that they can "get rid of" it (Jane, 2016; Kondor & Dimitri, 2014).

Past research efforts have documented the existence of relationship between market risks and on firms' performance. For instance, Sempabwa and Kariuki (2017) investigated the effect of market risk variables on the financial performance of banks in Rwanda, using foreign exchange rate, financial leverage and interest rate risk as the market risk indicators. The findings revealed a positive significant impact of market risk variable and banks' performance. Abdellahi, Mashkani and Hosseini (2017) investigated the impact of market risk on the financial performance of banks in Tehran, using the natural logarithm of the industry market value as the market risk indicator. The result from the analysis revealed a positive/negative effect of the market on the performance variable.

Moreover, Hoseininassab *et al.* (2013) examined the impact of market risks on the banking sector efficiency in Iran using the rate of changes in interest rate and exchange rate as the market risk indicators. The findings revealed a positive and negative impact of these variable on banks' efficiency. This finding is in line with the study by Ekinici (2016) who investigated the effect of market risk on the financial performance of banks in Turkey, using same variable, and also revealed a positive significant effect of market risk indicators and the banks' profitability. Inyama (2015) studied the effect of share prices on banks' financial performance on the Nigerian banking industry and a positive and significant relationship was established. Hence findings on the effects of market risk on performance is mixed and inconsistent. Based on the prevailing discussion, the study hypothesizes that:

H₀₆: Market risk does not significantly affect the performance of listed deposit money banks in Nigeria.

2.2.7 Foreign Exchange Risk

Papaioannou (2006) defined FX risk as the potential direct loss resulting out of unhedged exposure, or indirect loss from the institutions' cash flows, assets and liabilities, net profit, and the exposure on the firms' stock market value resulting from exchange rate fluctuation. It can also be seen as an



‘index related to the movement in two key external reserve holdings and the nominal exchange rate, in some cases, money supply’.

Empirical evidences have demonstrated the existence of relationship between foreign exchange risks indicators and performance. For instance, Isaac (2015), Maigwa and Mouni (2016), Marfo (2016), Raza, Ali, Ali and Jamaludin (2017) among others, analysed the influence of exchange rate on financial performance of firms in the financial sector. They used the level of exchange rate as the foreign exchange risk indicator. The outcome of the analysis revealed a positive significant relationship between exchange rate and performance. Additionally, Parlak (2016) investigates the magnitude of the effect of foreign exchange risk on the financial performance. The study used the ratio of foreign exchange position to total assets as the foreign exchange risk indicator. The result revealed that the magnitude of foreign exchange risk was positively associated with liquidity, asset efficiency and negatively associated with total profitability. Berument and Dincer (2004) examine the effects of real exchange rate risk on the economic performance for an emerging, small open economy. The study used the ratios of the total foreign exchange liabilities to Foreign Exchange (FX) liabilities as the exchange rate risk indicators. The result revealed a significant effect of foreign exchange risks and the performance indicators. Hence empirical findings on the effects of foreign exchange risk on performance is inconclusive. Based on the prevailing discussion, the study hypothesizes that:

H₀₇: Foreign exchange risk does not significantly affect the performance of listed deposit money banks in Nigeria.

2.2.8 Risk Management Committee (RMC)

Institutions have continuously offered greater concern towards risk management practices. In financial institutions, risks exposure surrounding their operational activities are monitored within the set parameters of the institutions’ Board which are expected to put in place, a sound risk management structure based on their complexity, size and diversification of their activities. (CBN, 2018). RMC has the responsibility for making proper planning directing and controlling of the risk management practices and the impact of all the risks exposure arising from the institution’s operations. Its functions include early risk identification; developing effective system for risk measurement; establishment of policies and procedures for managing risks; developing limits regarding risk tolerance and monitoring of established positions set against the approved limits of risk tolerance; and reporting of the risk monitoring the outcome to the Board and the senior management.

Malik (2017) investigated the impact of RMC on firms’ performance in UK and revealed a positive significance effect of RMC’ gender and financial expertise on performance, and a weak relationship of size, meetings, and independence. Ismail and Izah (2015) examined the effect of RMC on the extent of banks’ hedging activities information disclosure in Malaysia. The result from the analysis revealed a positive insignificant effect of the RMC’ existence on the extent of hedging activities disclosure, and a positive significant effect of the committee’s size, independence, diligence, gender diversity and training on the extent of hedging activities disclosure. Taking into consideration the important of RMC committee in setting risk management policies and programs so as to mitigate the possible exposure arising from operations, there is the need to provide a clear understanding on the extent to which RMC influence banks’ performance. Based on the prevailing discussion, the study hypothesizes that:



H₀₈: Risk Management Committee does not significantly affect the performance of listed deposit money banks in Nigeria.

2.3 Theoretical Underpinning

This study is underpinned under the philosophical postulation of prospect theory. According to the theory by Kahneman and Tversky (1979), firms' managers in low performing institutions usually faced with a form of a negatively framed prospects with the high expectation of undertaking high risks activities, while managers operating a higher performance phase are more likely to have a positive framed prospects and as well, operate a low risk activities. Hence, both the outcomes of the two scenarios would lead to a negative association between higher return with high performance outcome and lower risks, and thus, a possible negative correlation between risk-return relationships.

3. METHODOLOGY

This research was based on quantitative approach. The study was carried out to test the hypotheses of the relationships between seven independent variables; credit risk, liquidity risk, operational risk, solvency risk, capital adequacy risk, market risk, and foreign exchange risk. Therefore, the population of the study covers all the 25 listed DMBs by the regulation of Central Bank of Nigeria (CBN). Thirteen (13) sample banks out of the 25 banks were obtained using filters. The study used secondary data from the financial statement and annual reports of the sampled firms for the periods of eight years, which is 2012 to 2019. The period was considered adequate because Nigerian economy witnessed high and persistent inflation which lasted up to the end of 2019. Therefore, in order to observe the real behaviour of the extracted data, the study considered only data covering the period of 2012-2019. In order to perform robustness check, the study went further to aggregate the data into two distinct periods, taking into consideration 2012-2015 as periods before inflation, and 2016-2019 as the inflation periods. Data were then observed to understand relative changes.

Table 3.1 Variable Measurement and Description

Variable Name	Acronym	Description/Measurement	Apriori Expectation
Dependent Variable			
Return on Asset	ROA	Ratio of Earnings Before Tax Divided by Total Assets.	Positive sign
Independent Variables			
Credit Risk	CRERK	Ratio of Loan loss reserve divided by the total loans	Negative sign
Liquidity Risk	LIRK	Ratio of Total Loan to Total Deposit	Negative sign
Operational Risk	OPRK	Ratio of Operating Cost to Operating Income	Negative sign
Solvency Risk	SOLRK	Ratio of Shareholders' Funds to Total Liabilities	Negative sign
Capital Adequacy Risk	CAPRK	Ratio of Tier-1 Capital plus Tier-2 Capital to Risk Weighted Assets	Negative sign
Market Risk	MKTRK	Standard deviation of stock price of firm i at time t over one-year period	Negative sign

Foreign Exchange Risk	FXRK	Standard deviation of exchange rate of the Naira to US Dollar at time t over one-year period	Negative sign
Board Risk Management Committee	BRMC	Board Commitment, measured as the total number of the board risk management committees meeting during the financial year	Positive sign
Firm Size	FSZE	Measured by the natural logarithm of total asset of firm i over t period. To be used as the control variable	Positive sign

Source: Authors' Compilations 2023

Technique of Data Analysis

This study utilized panel data regression model and descriptive statistics in testing the relationship between the variables of the study. The study used Stata 14.0 software to perform the descriptive statistics analysis, correlation matrix and panel regression estimate. The software was used due to the nature of the data of being secondary and panel in nature.

Model Specification

The study modelled firm performance, measured by the ROA as a function of credit risk, liquidity risk, operational risk, solvency risk, capital adequacy risk, market risk, foreign exchange risk, and risk management committee.

Model for testing the Hypotheses

The analytical model used in testing the interconnectedness between the study variables was presented based on panel data regression model presented by Brooks (2008).

$$ROA_{it} = \alpha_{it} + \beta_1 CRERK_{it} + \beta_2 LIRK_{it} + \beta_3 OPRK_{it} + \beta_4 SLVRK_{it} + \beta_5 CAADRK_{it} + \beta_6 MRTRK_{it} + \beta_7 FXRK_{it} + \beta_8 RMC_{it} + \beta_9 SIZE_{it} + \mu_{it} \dots\dots\dots (1)$$

Diagnostic tests of the data sets were conducted to check whether the assumptions underlying OLS estimation were satisfied. The results of the test shows that two assumptions were failed to be satisfied. This led in the acceptance and use of GLS regression estimation in the analysis.

Table 3.2 Diagnostic Tests of OLS Assumptions

Normality	P-value	0.000	Not satisfied
Heteroscedasticity	prob> chi2	0.0003	Not satisfied
Autocorrelation	f-value	0.2091	Satisfied
Multicollinearity	VIF Mean	1.34	Satisfied
Hausman Test	Prob>chi2	0.6650	GLS RE

Source: Authors' Computation, 2023

Robustness check

The study performed two robustness check to observe the possible changes in the estimated results. These will include the re-estimation of the GLS regression model in consideration of the periods before and within the 2016-2019 recession periods.

4. RESULTS AND DISCUSSIONS

This section presents two sets of Generalized Least Square (GLS) regression models; the first model estimated the direct relationship using a set of seven risk determinants, the RMC and the

control variable as predictors of performance. Results of the direct estimated model are presented in Table 4.1.

Table 4.1 Generalize Least Square Regression Result for Direct Effect

Variables	Coefficient	Standard Error	Z-values	P-values
CRD RSK	0.0302	0.3581	0.08	0.933
LQTY RSK	0.0973	0.5690	0.17	0.864
OPR RSK	-0.1362	0.0332	-4.10	0.000***
SLV RSK	1.9357	1.0837	1.79	0.074*
CAD RSK	0.5405	0.2659	2.03	0.042**
MKT RSK	0.2607	0.0717	3.64	0.000***
FX RSK	0.0035	0.0126	0.28	0.783
BSZ	-0.1899	0.0605	-3.14	0.002***
RBS	0.6655	0.3130	2.13	0.034
Constant	1.5414	1.662245	0.93	0.354
R-Squared	0.4732			
Wald chi2	63.95			
Prob.	0.0000			

*, **, *** imply significant at the 10%, 5% and 1% levels respectively

Source: Authors' Computation, 2023

Table 4.1 reveals the summary of the generalized least square random effect regression model output for the direct relationship between the variables of the study. From the table, the estimated random effect of the GLS model is:

$$\text{ROA} = 1.5414 + 0.0302\text{CRDRSK} + 0.0973\text{LQTYRSK} - 0.1362\text{OPRRSK} + 1.9357\text{SLVSK} + 0.5405\text{CADRSK} + 0.2607\text{MKTRSK} + 0.0035\text{FXRSK} + 0.6655\text{RBS} - 0.1899\text{FSZ}$$

Table 4.1 also presents the R-squared (R^2) value of the observed endogenous construct. The GLS regression result revealed that the R^2 value of the firms' financial performance (0.47) is substantial. This is an indication that 47% of the systematic variation in the sample firms' ROA is jointly explained by the changes in the firms' risks and RMC variables used in the study. This implies that the explanatory power of the model used in the study stood at 47%. Invariably, the remaining 53% is explained by other variables that have not been captured in the explicit model of the study. As for the individual variables, the results for the direct relationship shows that 4 hypotheses were significant, while 3 returned an insignificant p-values. Specifically, the result from the analysis revealed the existence of positive significant effects of solvency risk, capital adequacy risk and market risk exposure on performance. The result also revealed the existence of positive insignificant effect of credit risk, liquidity risk and foreign exchange risk on performance; while significant negative effect of operational risk on performance was revealed.

Table 4.2 Panel 'A' GLS Regression Result (Direct Effect before the 2016-2019 Recession)

roa2	Coefficient.	Std. Err.	T-value	P-value
CRD RSK	0.0247	0.4677	0.05	0.958
LQTY RSK	1.3879	0.8718	1.59	0.119



OPR RSK	-0.1332	0.0389	-3.43	0.001
SLV RSK	1.0739	1.0433	1.03	0.309
CAD RSK	1.2825	0.9782	1.31	0.197
MKT RSK	0.2914	0.1476	1.97	0.055
FX RSK	-0.2452	0.1740	-1.41	0.166
FSZ	0.2160	0.2001	1.08	0.288
RBS	0.8803	0.3781	2.33	0.025
Cons	-5.2092	3.2449	-1.61	0.116
R ²		0.5661		
R ² Adjusted		0.4731		
Root MSE		0.9530		
Probabilty		0.0000		

Source: Authors' Computation, 2023

Table 4.3 Panel 'B' GLS Regression Result (Direct Effect in the 2016-2019 Recession)

ROA	Coefficient.	Std. Err.	T-value	P-value
CRD RSK	-0.4221	0.5556	-0.76	0.452
LQTY RSK	-0.5056	0.8392	-0.60	0.550
OPR RSK	-0.1835	0.0614	-2.99	0.005
SLV RSK	-2.0380	4.4581	-0.46	0.650
CAD RSK	0.1192	0.3499	0.34	0.735
MKT RSK	0.2664	0.0850	3.13	0.003
FX RSK	0.0396	0.0186	2.13	0.039
FSZ	-0.1768	0.0856	-2.06	0.045
RBS	0.8615	0.4337	1.99	0.054
Cons	1.1395	2.8070	0.41	0.687
R ²		0.5558		
R ² Adjusted		0.4607		
Root MSE		1.0453		
Probability		0.0000		

Source: Authors' Computation, 2023

Table 4.3 shows that, panel A reveals the R² value of approximately 57%, indicating that before the period of recession, firms' risks construct used in the empirical model explained about 57% of the performance of firms before the recession periods, while the remaining 47% were of the overall firms' performance were explained by other factors not captured in the present study. The Root MSE revealed the value of .95304 significant at 1%, and this indicates the overall fitness of the model to test the relationship.

Similarly, panel 'B' in Table 4.3 presents the second model statistics with the R² value of approximately 56%, indicating during recession periods, the model predictors, that is, the firms' risks variables used in the study explained about 56% of firms' performance, which is almost similar as compared with the result in panel A which is before the periods of recession. This means that the two models are similar in explaining the direct relationship even when considering recession periods in the main research model.



4.1 Discussion of Findings

The findings of the study show that credit risk has a positive and insignificant effect on the performance of financial service firms in Nigeria. This finding is in line with the past empirical findings established in the study by Ogundajo *et al.* (2020), Kutum (2017) and negates the findings of Boahene *et al.* (2017), who revealed a significant positive effect of credit risk on the performance. This finding support the theoretical postulation by Prospect Theory that firms tend to have excessive risk taking and seek for higher earnings when the expected return is below the target. It was further revealed that the direct effects of credit risk on firms' performance tend to be negative but not significant during the periods of 2016-2019 recession.

Also, liquidity risk has a positive and insignificant effects on the performance of financial service firms in Nigeria. This finding support the empirical finding established by Sathyamoorthi *et al.* (2019) and Musah and Gakpetor (2018) contradicts the study by (Ruziqa, 2013) and Nițoi and Spulbăr (2016). The result also negates the findings of the studies by Onsongo *et al.* (2020) who revealed the existence of a negative significant effect of liquidity risk on the performance of financial service firms in Kenya, Jordan, Europe and Jordan. The finding is in line with the Prospect theory that firms tend to have excessive risk taking and seek for higher earnings. It is also revealed that the effect of liquidity risk on firms' performance is positively insignificant in the periods before and within the 2016-2019 recession period.

More so, operational risk has a negative and significant effects on the performance of financial service firms in Nigeria. This is in line with the previous empirical study by Kamau (2018) and Soyemi *et al.* (2014) and also contradicts the findings of the study by Al-Tamimi *et al.* (2015) and Zahisyam *et al.* (2017), who established the existence of insignificant positive effects of operational risk on financial firms performance in Malaysia and UAE respectively. The finding supports the Prospect theory which postulates that excessive risk taking activity results a significant reduction in performance. It was further established that the direct effect tends to be negatively significant in the periods before and within the 2016-2019 recession period.

Again, solvency risk has a positive and significant effect on the performance of financial service firms in Nigeria. This finding is in line with the established empirical evidence in the study by Dabo *et al.* (2018) and Abdullah (2016) who found the existence of a positive effects of solvency risks on financial firms' performance in Bangladesh and Jordan. It also contradicts the findings of the studies by Sakouvogui and Shaik (2020) and Dahiyat (2016), who documented the existence of a positive insignificant effects of solvency risks and financial firms' performance in in United States and Jordan. Additionally, it was further established that the effects tend to be positive but insignificant before the recession periods, and negatively insignificant in the 2016-2019 recession periods.

Furthermore, capital adequacy has a positive and significant effect on the performance of financial service firms in Nigeria. This supports the empirical findings established by (Haris *et al.*, 2020) and (Kingdom *et al.*, 2019), Ly (2016) and also contradicts the findings of the studies by Mendoza and Rivera (2017) and Udom and Eze (2018) who revealed the existence of a positive and insignificant effect in countries of Philippines, Nigeria. Similarly, the result contradicts the findings of Pradhan and Pratikshya (2017) and Pervez and Bansal (2019) in Nepalese and India



which revealed a significant negative effects, It was further established that the relationship tends to be insignificant in the 2016-2019 recession period.

In addition, market risk has a significant positive effects on the performance of financial service firms in Nigeria. This is in line with the previous empirical findings by Ekinchi (2016) and Ogungbade and Idode (2016) and contradicts the findings of Kassi et al. (2019), Kamau and Njeru (2012), Kelvin (2016) who established the existence of a negative significant effect of market risks and the performance of financial service firms China and Kenya. The finding supports the theoretical postulation of Prospect theory that firms tend to have excessive risk taking and seek for higher earnings. As established from the findings, the effect of market risk on performance tend to be positively significant in the periods before and within the 2016-2019 recession.

Besides, foreign exchange risk has a positive and insignificant effects on the performance of financial service firms in Nigeria. This result contradicts the findings from the past empirical evidence established in the study by Pradita and Geraldina (2019) and Raza, Ali, and Ali (2017) and contradicts the findings of Berument and Dincer (2004) who established the existence of a negative significant effect of foreign exchange risks on the performance of financial service firms in Turkey. The result further indicated that the effect tend to be influenced during the recession 2016-2019 recession as the result turned out to have both positive and significant effects. This implies that firms utilized the advantages of the exposure arising due to the fluctuation on foreign exchange in order to have for earnings during the recession periods.

Lastly, the relationship between Risk Management Committees (RMC) commitments and financial performance is found to be positive and statistically significant. This revealed that a unit increase in the firms' BRMC's commitment increases the firms' performance by 66.55%; and this is in line with the apriori expectation established in this study. This result contradicts the findings from the past empirical evidence established in the study by Elamer and Benyazid (2018) which revealed a negative effect of RMC on performance; and is in line with the study by Ismail and Izah (2015) which revealed a positive significant effect of RMC on performance.

5. CONCLUSIONS AND RECOMMENDATIONS

The Nigerian banking institutions have witnessed deteriorating performance as a result of problems associated with poor risk management practices and regulatory lapses. The consequences of these challenges resulted in stock market crash, credit crunch, revenue decline, poor capitalization, and persistent illiquidity in most of the financial service firms. This study investigated the effects of firms' risks on the performance of deposit money banks in Nigeria. Based on this, specific objectives were raised in line with the main objective of the study and conclusions were made. The study utilized panel data regression model to estimate the direct and moderating relationship. As for the direct effect, the study documented the existence of positive significant effects of solvency risk, capital adequacy risk and market risk exposure on performance. The study also revealed the existence of positive insignificant effect of credit risk, liquidity risk and foreign exchange risk on performance; while significant negative effect of operational risk on performance was revealed. It was also further concluded that recession periods has both positive and negative influence in the relationship between firms risk and performance of financial service firms in Nigeria. The study therefore recommended that the apex regulators and firms' managers should re-assure that the independent RMC are to be committed to setting all risk



management policies, reviewing and recommending risk appetite and risk tolerance in the organization in line with the RBS principles of monitoring control.

The study offered suggestions for additional research efforts by future researchers. The study covered eight firms' risk variables, which are credit risk, liquidity risk, operational risk, solvency risk, capital adequacy risk, market risk, foreign exchange risk and RMC. Based on the established Risk-Based Supervision principles, all the inherent firms' risk should be studied to ensure a clear understanding of their effects on firms. Based on this, future studies should consider adding other firms' risk constructs in a single empirical model to explore their effects on firms' performance.

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