



# Effect of Enterprise Risk Management on Sustainable Financial Performance of Deposit Money Banks in Nigeria

Okon, Sylvanus Ushie<sup>1</sup>, Okon, John Odama<sup>2</sup>

<sup>1</sup>Department of Accountancy Cross River University of Technology Nigeria.

<sup>2</sup>Department of Accounting, University of Calabar, Calabar, Nigeria.

**ABSTRACT:** The paper is aimed at determining the effect of Enterprise Risk Management (ERM) on Sustainable financial performance of deposit money banks in Nigeria. The specific objectives of the research is to determine the effect of ERM on earning per share (EPS) and to ascertain the effect of ERM on Tobin Q. Descriptive research design was adopted for the study considering the total population of all the twenty-one listed deposit money banks in Nigeria. Data were gathered via secondary source from five (5) public annual reports of the listed deposit money banks for a period of six years ranged from 2013-2018 and analysed using percentages and ratios. Multiple regressions was employed in data analysis and testing the hypotheses; in determining if there is a significant effect of Enterprise Risk Management on Earnings per Share and Tobin Q of listed deposit money banks in Nigeria. The study revealed that there is a positive and significant relationship between ERM (Firms Size, Leverage) and sustainable financial performance (TQ & EPS) of listed deposit money banks in Nigeria. Based on the findings, the study recommends that financial institutions in Nigeria should employ robust Enterprise Risk Management Practices as these are likely to greatly influence their financial performance in one way or the other and that Central Bank of Nigeria and other regulators should endeavour to strengthen the enforcement of risk control mechanism to boost a robust bank performance.

**Keywords:** Enterprise Risk Management (ERM), Financial Performance, Tobin Q, Earnings Per Share (EPS)

## I. INTRODUCTION

Risk stands as a central part of carrying out businesses in banking and financial services, as firms must wholly be willing to take on a fair amount of risk in order to provide a greater value to stakeholders. The word enterprise for Enterprise Risk Management (ERM) in itself clearly shows a different meaning than traditional risk management. Enterprise means to integrate or aggregate all types of risks; using integrated tools and techniques to mitigate the risks and to communicate across business lines or level compared to traditional risk management (Izah & Ahmad 2011). Due to the rise of globalization and intense competition, risk in the financial sector is on the rise giving the need for efficient management of such risk by the management to be able to enjoy a sustainable financial performance level. ERM considers the firm's risk appetite to determine which risks should be accepted and which should be mitigated or avoided. While there has been a considerable increase in practitioner attention on ERM in recent years, little academic research exists about ERM, and in particular about the consequences of ERM on firm performance. As part of a strategic management tool, lots of companies are now employing Enterprise Risk Management. Nyagah (2014) Risk management has emerged as a new paradigm for managing the portfolio of risks that face organizations, and policy makers continue to focus on mechanisms to improve corporate governance and risk management. In analysing the concept of Enterprise Risk Management four (4) key risks amongst others is given key consideration, as financial institutions deal with a number of these risks which includes credit risks, market risks, liquidity risks and operational risks (Nocco & Stulz, 2006).

In general, companies hardly publish any comprehensive information about their existing risk management system or plans. Hence, the empirical literature is faced with the challenge of gathering information about whether or

not an ERM system has been adopted and to what degree. Information about the current corporate risk management system can either be collected by using surveys or by scanning public sources. Surveys are typically used to study the level or stage of the ERM implementation.

The central focus of Enterprise Risk management has mainly been on controlling and for regulatory compliance, as opposed to enhancing financial performance of Banks. Financial performance which can be sustainable if the firm's performance is viewed holistically with reference on the basis of profitability, solvency and liquidity. A firm's profitability indicates fully the extent to which a firm generates profit from its factors of production. Financial performance can be measured by monitoring the firm's profitability levels. Enterprise Risk Management helps in ensuring effective reporting and compliance with laws and regulations, and also helps in avoiding damage to the entity's reputation and associated consequences. It delivers a current, credible understanding of the risks unique to an organization across a broad spectrum that includes all types of risk (credit risk, operational risk, market risk, liquidity risk and trading risk), lines of business and other key dimensions. The efficiency of risk management by financial institutions will generally enhance their sustainable financial performance. It is therefore no doubt that deposit money institutions could not survive with increased loss and expense ratios.

Generally, company operations are susceptible to risks and if these risks are not properly managed wholly the firm's sustainable financial performance will be threatened. As those firms with efficient enterprise risk management structures will outperform their counterparts as they are well prepared for periods after the occurrence of the related risks. This study hopes to come up with an expected positive relationship between enterprise risk management and sustainable financial performance of selected listed deposit money banks in Nigeria.

### 1.1 Statement of the Problem

This study is borne out of the need to effectively and efficiently manage enterprise risks bearing in mind the effect on sustainable financial performance of a deposit money banks. Yegon (2015) Enterprise risk management affects the financial performance of a firm by reducing surprises arising from business complexities, unpredictable business environment and evolving risks.

From previous research findings, it is of note that ineffective enterprise risk management structure will pose a weak firms performance as against a competitive stand with that of strong risk management structure. Modern financial institutions are in the risk management business as they undertake the functions of bearing and managing risks on behalf of their customers through the pooling of risks and the sale of their services as risk specialists, placing them in the core business of managing risk. These companies manage the risks of both their clients and their own risks, which require an integration of risk management holistically into the companies' systems, processes and culture. Various stakeholders pressure their organizations to effectively manage their risks and to transparently report their performance across such risk management initiatives. While, there is an argument that some risks can and should be retained as part of the core business operations and actively managed to create value for stakeholders, others suggests they should be transferred elsewhere, as long as it is cost effective to do so. There are some risks which present opportunities through which the firm can acquire comparative advantage, and hence enable it to improve on financial performance. Generally, review of the literature on risk management seems to suggest that better risk management practices result in improved financial performance of the firm. By linking enterprise risk management and financial performance, financial institutions can more effectively and efficiently understand the value of implementing a risk management framework.

This study on the relationship between the various risk management practices adopted by the companies in Nigeria and their financial performance was aimed at addressing the challenge of ever emerging risks (such as market risk, interest rate risk, credit risk etc.) within the sector. It is an attempt to critically examine the various practices through which financial institutions manage the various types of risks that they face, and determine if there was any relationship between the practices and the financial performance of these companies. In view of this, the research

seeks to look at the effect of deposit money banks in Nigeria. In view of this, the research is carried out to look at the effect of enterprise risk management on sustainable financial performance of listed deposit money banks in Nigeria.

### 1.2. Research Objective

The main objective is to examine the effect of Enterprise Risk Management on Sustainable financial performance of listed deposit money banks in Nigeria.

The Specific Objectives are:

- a. To determine the effect of ERM on earning per share (EPS).
- b. To ascertain the effect of ERM on Tobin Q.

### 1.3 Research Questions

- (i) To what extent does ERM affects EPS?
- (ii) What effect has ERM on Tobin Q?

### 1.4 Research Hypothesis

**H<sub>0</sub>1:** ERM has no significant effect on Earning per Shares (EPS).

**H<sub>0</sub>2:** ERM has no significant effect on Tobin Q.

## II. CONCEPTUAL FRAMEWORK

### 2.1 Concept of Enterprise Risk Management

Enterprise risk management as defined by Wikipedia includes the methods and processes used by organizations to manage risks & seize opportunities related to the achievement of their objectives. Enterprise Risk Management makes room for a framework for managing risk, which involves identifying particular events or circumstances relevant to the organizations objective (risks & opportunities), assessing them in terms of likelihood and magnitude of impact, determining a response strategy, and monitoring progress. According to Pagach and Warr (2010) Enterprise Risk Management (ERM) is an increasingly popular strategy that attempts to holistically evaluate and manage all of the risks faced by the firm. Enterprise Risk Management (ERM) wholly encompasses aligning risk appetite and strategy, enhancing risk response decisions, reducing operational surprises and losses, identifying and managing multiple and cross-enterprise risks, seizing opportunities, and improving deployment of capital (Beasley, Clune & Dana, 2005). Risk management entails a continual process to identify, analyse, evaluate, and treat loss exposures and monitor risk control and financial resources to mitigate the adverse effects of financial cum operational loss (Ele & Oko, 2015). ERM sets to address the needs of stakeholders, who want to understand the wide spectrum of risks facing complex organizations to ensure they are strongly managed. By addressing proactively and identifying risks and opportunities, financial institutions project and create stakeholders value, not leaving out customers, employees, owners and overall society. Oko, Ijing, Igbaji & Adie, (2015) ERM seeks to ensure the attainment of strategic, operational, reporting and compliance objectives. These objectives are geared towards ensuring the financial and overall performance of an organization. ERM framework reflects four (4) major objectives namely:

- a) Strategic (high level goals, aligned with and supporting organisation's mission)
- b) Operations (efficient & effective use of resources)
- c) Reporting (reliability of reporting)
- d) Compliance (compliance with laws & regulations)

### 2.2 Financial Performance

Financial performance of an organization is viewed from the standpoint of its operations by considering the profit generated by its resources. The reason behind selecting financial performance from operations is that this performance is easier for managers to control. Common examples of financial performance comprise of operating

income, earnings before interest and taxes, and net asset value. It is of great importance to note that no single measure of financial performance should be considered on its own. Rather, a thorough evaluation of a company's performance should take into account many different measures of performance (Muteti, 2014). Pandey (2009) explains that financial performance is a measure of efficiency to meet its obligation by ensuring sound liquidity, solvency and profitability as well maintaining positive value of assets. Nyagah (2014) Performance encompasses three specific areas of firm outcomes namely financial performance (profits, return on assets, return on investment); market performance (sales, market share); and shareholder return (total shareholder return, economic value added). One of the measure of sustainable financial performance is return on equity (ROE) which Pagach & Warr (2010) defines as the amount of net income as a percentage of shareholders equity. It measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested. Widely used by investors, the ROE ratio is an important measure of a company's earnings performance (Bizuayehu 2015). Therefore, this is expressed as  $ROE = \text{Net profit} / \text{Total Equity}$ . Another measure is return on assets (ROA), which is expressed as  $\text{Net Income} / \text{Total Assets}$ . Nyagah (2014) noted that in a number of studies that assess the (financial) performance of ERM, the impact is measured by excess stock market returns (Gordon, Loeb, and Tseng, 2009). As much as financial performance of an organization forms the centre of its existence, the need for continuity is of great importance. The aim of a financial institution should not just be on attaining financial performance but sustainability of its financial performance.

### 2.3 Impact of Enterprise Risk Management on Sustainable Firm Performance

Corporate scandals and diminished confidence in financial reporting among investors and creditors have renewed Corporate Governance as a top-of-mind priority for Boards of Directors, Management, Auditors, and Stakeholders. There is a sharp increase in the number of companies trying to manage risks. Thus, there is need for companies to effectively integrate Enterprise Risk Management with Corporate Governance (Sobel & Reding, 2004). Magezi (2003) Poor management of risk, by insurance companies, leads to accumulation of claims from the clients hence leading to increased losses and hence poor financial performance. But by extension such accumulated leverage also affects the financial institution of Nigeria particularly.

These capabilities inherent in enterprise risk management help management achieve the entity's performance and profitability targets and prevent loss of resources. Enterprise Risk Management helps ensure effective reporting and compliance with laws and regulations, and helps avoid damage to the entity's reputation and associated consequences. It delivers a current, credible understanding of the risks unique to an organization across a broad spectrum that includes all types of risk (credit risk, operational risk, market risk, liquidity risk and trading risk), lines of business and other key dimensions (SAS, 2014). In summary, Enterprise Risk Management helps an entity get to where it wants to go and avoid pitfalls and surprises along the way (Nocco & Stulz, 2006).

### 2.4 Enterprise Risk

Market risk is the risk that the value of on and off-balance sheet positions of a financial institution will be adversely affected by movements in market rates or prices such as interest rates, foreign exchange rates, equity prices, credit spreads and/or commodity prices resulting in a loss to earnings and capital (Nocco & Stulz, 2006). Interest rate risk is the potential negative impact on the net interest income and it refers to the vulnerability of an institution's financial condition to the movement in interest rates. Changes in interest rate affect earnings, value of assets, liability off-balance sheet items and cash flow (Sensarma & Jayadev, 2009). Foreign exchange risk is the risk that a firm may suffer loss as a result of adverse exchange rate movement during a period in which it has an open position, either spot or forward or both in same foreign currency. Even in case where spot or forward positions in individual currencies are balanced the maturity pattern of forward transactions may produce mismatches (Al-Tamimi 2002). There is also a settlement risk arising out of default of the counter party and out of time lag in settlement of one currency in one centre and the settlement of another currency in another time zone. Operational risk is the risk of loss resulting from inadequate or failed internal processes, people and system or from external events (Nocco & Stulz, 2006).

## 2.5. Factors Posing Against Enterprise Risk Management Implementation

- Nyagah (2014) outlined the factors to include Size of the firm, leverage and growth opportunities.
- i. **Size of the Firm:** Kleffner et al. (2003) suggests that larger firms would be more likely to adopt ERM because of the need for a more comprehensive risk management strategy. The larger the organization, the more complex its operations will probably be and the more its exposure to threatening events.
  - ii. **Leverage:** Firms with higher leverage are more likely to suffer financial distress. Excessive leverage may also limit a firm's flexibility when pursuing additional profitable investment projects. Thus the impact of ERM adoption on leverage is unclear, however, for firms that were previously at their target leverage level, greater control of operational risks would suggest that the firm could increase its debt capacity (Liebenberg and Hoyt, 2003).
  - iii. **Growth Opportunities:** Beasley, Clune and Dana (2005) states that as companies growth rate increases, the scope of events threatening it are likely to differ in nature, timing, and extent. Therefore the faster a company is growing, the more likely it will embrace ERM. However, Hoyt et al (2008) finds no significant relationship between the rate of growth of a company and its level of ERM implementation.

## 2.6. Impact of weak risk management practices on the Nigerian banking system.

Onyekwelu & Onyeka (2014) stated the effect of weak risk management practices as outlined by Agbonkpolor (2010) to include;

- a) **Erosion of Shareholders' fund:** CBN release of 14th August 2009 showed that the huge non-performing credits in the banks arising from over exposure to the capital market and the Oil and Gas sector is a major reason for their liquidity problems. He noted that poor risk management practices in the eight troubled banks, the extent of banks capital were eroded as a result of loan provisioning for non-performing credit from the annual reports and accounts bad loans acquired by Oceanic bank and Intercontinental Banks amounted to N489.1b while their equity holders' fund stood at N369.8b automatically wiping-off the investment of equity holders.
- b) **Explosion in banks' balance sheets and attendant increase in loan/advances portfolio:** Weak risk management practice will lead to bloated balance sheet size which will trigger increase in loan advancement. The size of the balance sheet of the troubled banks increased as some of them banks recorded explosive growth with some of the statistics like Intercontinental bank assets grew from a modest size of N369.2b by December, 2006 to N704.4b by December, 2007 recording about 90.79% increase; Oceanic bank balance sheet worth grew from N372 billion within the same period to a whopping sum of N1,030.4b in December 2007 an increase of 176.99% and so did the other banks grew. Basking in the euphoria of these feats, a lot of these banks tremendously increased their loan portfolio. For instance, a bank like Intercontinental bank's had a loans and advances balance of N277b. The bubble however burst when the crisis in the capital market to which most of loans and advances were advanced and loan recovery became a problem.
- c) **Single Obligor, serial borrowers and collaterals used to secure credit:** This was another fundamental pitfall that heralded the failure of the troubled banks. Investigation revealed that there were multiple cases of contravention of single-obligor rule. The troubled banks has a records of single obligor ranging from N13.3 to N44.6 billion, constituting an exposure as much as 13.3 to 47.4% and some of these loans were not properly collateralized.
- d) **Poorly loan documentation:** Most of the loans advanced according to CBN reports disclosed that most of the loans were poorly documented with most having collaterals ranging from domiciliation of payment, legal mortgage, deed of assignment, stock hypothecation and personal guarantees. The report also reveals that some of the credits were either not collateralized or the value of collaterals falling short of the amount of credit facility granted.

### III. THEORETICAL REVIEW

There are established theories in relation to enterprise risk management and financial performance.

#### 3.1 Modigliani-Miller Theory (M.M. Theory)

There is a broad literature on risk management decisions for firms in general, beginning with Modigliani and Miller (1958): Their famous theorem states that in a world of perfect and complete markets, financial decisions are irrelevant as they do not alter the value of the shareholder's stake in the firm. The only way to increase shareholder's wealth is to increase value of the firm's assets. Neither the capital structure nor the risk management decisions have an impact on shareholder's wealth. (Nyagah, 2014:15). The MM theory stands important when used in the frontier in identifying factors given rise to making economic decisions under which risk management conditions occurs.

#### 3.2 Capital Asset Pricing Model (CAPM)

CAPM model which represents an extension and better simplification of the model put forward by Markowitz (1952) which was at the foremost of theorizing a model on the relationship between return and risk. The Capital Asset Pricing Model states that all investors will hold the same efficient portfolio (the market portfolio) regardless of their individual risk preferences. In drawing a relationship on risk management on performance, Gossy (2008) further confirms that CAPM is capable of determining the market price for risk and appropriate risk measure for a single asset. (Nyagah, 2014).

### IV. EMPIRICAL REVIEW

Much work has been done on risk management, but little research has been carried out on Enterprise Risk management on sustainable financial performance, more especially in Nigeria.

This part of the study summarizes various studies conducted in different countries which are related with financial performance and risk management.

Nyagah (2014) undertook the study on the effect of enterprise risk management on financial Performance of Pension Fund Management in Kenya. The study adopted a descriptive study design. The population for this study was the 19 registered Pension Fund Management firms in Kenya by July 2014 from which 11 agreed to take part in the survey giving a response rate of 58%. Both primary and secondary data were used. Data was analysed using both descriptive and linear regression analysis. The regression results revealed that the model accounted for 99.3% of the variance in financial performance as shown by the R<sup>2</sup> value. The F-statistic of 38.3 was significant at 5% level, suggesting that the model was fit to explain the relationship between enterprise risk management and financial performance. The coefficient results showed that event identification, risk assessment, objective setting, and information communication had negative effects on the financial performance of fund management firms while risk response, internal environment, and control activities had positive effects on the financial performance of pension fund management firms in Kenya. This study concludes that there is a positive relationship between the adoption of risk management practices and the financial performance of insurance companies in Kenya.

Omasete (2014) examined the effect of Risk management on Financial Performance of Insurance companies in Kenya. The study adopted a descriptive study design. The population for this study was the 19 registered pension fund management firms in Kenya by July 2014 from which 11 agreed to take part in the survey giving a response rate of 58%. Both primary and secondary data were used and Primary data was collected using questionnaires structured based on the objectives of the study and the research instrument was administered through mail and drop and pick later methods. Data was analysed using both descriptive and linear regression analysis. The regression results revealed that the model accounted for 99.3% of the variance in financial performance as shown by the R<sup>2</sup> value. The F-statistic of 38.3 was significant at 5% level, suggesting that the model was fit to explain the relationship between enterprise risk management and financial performance. The coefficient results showed that event identification, risk

assessment, objective setting, and information communication had negative effects on the financial performance of fund management firms while risk response, internal environment, and control activities had positive effects on the financial performance of pension fund management firms in Kenya. However, the effects of even identification and risk response on financial performance were insignificant at 5% level. Thus, the study concludes that enterprise risk management practices influence the financial performance of pension fund management firms in Kenya to a very large extent.

Mucheru (2016) carried out the study on Effect of Risk Management Strategies of Financial Performance of Insurance Companies in Kenya. Descriptive research design was adopted for the study, both primary and secondary data was used for the purposes of the study. Primary data was collected through questionnaires with 35 insurance companies giving a response and Secondary data was collected using desk search techniques from published reports and data from financial statements maintained by IRA for a period of five years from 2010 to 2014. Content analysis was used to analyse qualitative data whereas, the quantitative data was analysed using SPSS. Regression analysis was also used in the study. The result of the study established that a majority of insurance companies in Kenya had adopted risk management practices in their operations and that this had a strong effect on their financial performance and also, that there is a positive relationship between the adoption of risk management strategies and the financial performance of insurance companies in Kenya.

Izah and Ahmad (2011) carried out a study on the relationship between Enterprise Risk Management and Firm's value: Evidence from Malaysian Public Listed Companies. The research design adopted was descriptive and empirical and the study was based on 2007 for 528 companies. The approach employed was to model firm value (TOBIN'S Q) as a function of Enterprise Risk Management (ERM) and other determinants: size (SIZE); leverage (LEV); profitability (ROA); international diversification (INTDIV); and majority ownership (OWN). Regression was employed in the test of analysis and the findings reveals that ERM is positively related to firm value but it is not significant. The results do not support the hypothesis that firms which practice ERM would have a higher Tobin's Q ratio than firms which are not and that OWNERSHIP is positive but not significantly related to firm value.

Soyemi, Ogunleye, Ashogbon (2014) examined risk management practices and financial performance: evidence from the Nigerian deposit money banks. The research design was descriptive and the study used secondary data gathered through content analysis of the selected banks' annual reports and accounts. OLS regression was employed to estimate significant influence between banks' risk management practices (credit, liquidity, operating and capital risk practices) and their financial performance. The findings indicate a relatively high R2 [ROA=92% (71.78); ROE=84% (46.55)] implying a significant influence of bank's risk management practices on performance. Also, the credit and capital risk display significant positive influence by accounting for 10% (8.31) and 20% (4.14) in ROA, only the credit risk is positively significant having accounted for 45% (5.51) variations in ROE.

Onyekwelun and Onyeka (2014) examined Financial Risk Management: A Review of the Role of the Central Bank of Nigeria. The study adopted both the descriptive and survey approach. The primary data of this study were sourced through a structured questionnaire which comprised of 21 questions designed with the Linkert Scale ranging from 1-5. The questionnaires were administered to 80 randomly selected respondent. Out of the respondents, 72 completed and returned the questionnaires representing return rate 90%. Secondary data were sourced from relevant textbooks, scholarly journals, annual reports and accounts of companies under study and the internet. Data were analysed with the aid of Statistical Package for Social Sciences (SPSS) while, Chi-square statistical technique was used to test the hypotheses at 5% level of significance. Simple percentages were also used to analyse the data collected from the firms' annual reports and accounts. The study revealed among others that poor risk awareness and management practices among banks has led to the intermittent turmoils experienced in Nigeria's banking sector and that many banks adopted a reactive approach to risk instead of being proactive and this has eroded to a reasonable extent depositors funds.

Saiful (2017) conducted a study on contingency factors, risk management and financial performance of Indonesian banks. Purposive technique was employed as instrument for the selected 24 Indonesian public listed banks selected as the sample of this study for four years from 2010 until 2013. OLS regression and correlation analysis was employed in analysing the data. The findings revealed that ERM and CRM positively influence on Indonesian bank

performance and also reported that the influencing of ERM on Bank performance will be stronger for large banks and that which operate in higher environmental uncertainty, higher complexity, and lower independent board monitoring.

Rakauskaite(2016) conducted a study on the Impact of enterprise risk management on companies' financial performance and value during crisis: European non-financial sectors - energy and telecommunication. The research design was descriptive. Empirical results were based on publicly listed largest European Energy (total 51 companies) and Telecommunication (total 21 companies) balanced data for two periods 2003-2006 (pre-crisis) and 2011-2014 (after-crisis). Ordinary Least square (OLS) and correlation was employed to test the variables. The findings showed that after crisis ERM effect to companies' value and performance has changed and that after crisis investors started to value ERM existence in enterprise as good sign of mature management practices and that was reflected in the market value of company particular in Energy sector. Also, further findings showed that ERM effect to profitability of company had opposite effect as before crisis there was effect in Energy sector and after crisis effect vanished.

Mukhtar and Soliman (2017) carried out a study on Enterprise Risk Management and firm performance: an integrated model for the banking sector. The research design adopted was descriptive. Ten listed commercial banks were selected with the Enterprise Risk Management index as the main independent variable, with Return on Average Equity (ROAE), Share Price Return (SPR) and Firm Value (FV) used as three separate dependent variables. The Ordinary Least Square (OLS) method was used to run the regression model. The result provided strong evidence of a positive relationship between Enterprise Risk Management implementation and performance in the Nigerian banking sector.

Fisayo and Nwankwo (2015) conducted a research on Business Risk Management and Organisational Performance: Empirical Evidence from Small and Medium Enterprises in Nigeria (SMEs). The survey design for the study was descriptive in nature. The research instrument for data gathering was interview schedule. The sample population is consisted of 58 respondents. The findings from the study thus revealed that there was no structured means for managing their risks and that the knowledge of individuals does not really apply in their risk management practice. Recommendation was that Insurance companies should endeavour to increase insurance awareness among small and medium business operators; and also operators should endeavour to develop a culture of managing their risks.

Bizuayehu (2015) examined the impact of credit risk management on profitability of banks in Ethiopia. The research design was descriptive. The study used a secondary data for eight banks which stayed in the industry more than eleven years among nineteen banks which is functional at the moment in Ethiopia banking industry. Data to do the analysis was obtained from banks annual report, National Bank annual report and MoFED. Correlation and multiple regression analysis done with random effect model and E-View software were used to regress the data. Return on equity was dependent variable while nonperforming loan, capital adequacy, bank size, loan and advance to deposit ratio, inflation and GDP have taken as an independent variables. The result findings stated that the credit risk which is measured by nonperforming loan ratio had a significant inverse impact on banks financial performance and capital adequacy also same impact on profitability.

Muteti (2014) conducted a study on the relationship between Financial Risk Management and Financial Performance of Commercial Banks in Kenya. The study adopted a descriptive research design. Secondary Data was collected from the Central Bank of Kenya and Commercial Banks in Kenya for the 43 commercial banks as at 2013. Data analysis was done using SPSS Version 20 whereby inferential statistics was applied and F-test was used to test the joint significance of all coefficients and t-test for the test significance of individual coefficients. The study revealed that there was there was a negative relationship between credit risk, interest rate risk, foreign exchange risk, liquidity risk and financial performance of commercial banks in Kenya, also further revealed that there was a positive relationship between capital management risk, bank deposits, bank size and financial performance of commercial banks in Kenya.

Laisasikorn and Rompho (2014) carried out a study on the relationship between a successful enterprise risk management system, a performance measurement system and the financial performance of Thai listed Companies. The study applied a quantitative approach by collecting the primary data from a questionnaire sent to management directly involved with ERMS and PMS in companies listed on the Stock Exchange of Thailand. And secondary data was

retrieved from the Stock exchange was used for sourcing the dependent variable (ROA, ROE, and EPS). Data analysis was performed by applying the structural equation modelling (SEM) technique. The findings revealed that financial success can be measured by ROA, ROE and EPS, which can be grouped into one factor and that ERMS and PMS seem to have moderate correlation as firms that successfully implement an ERMS are apparently also successful in implementing a PMS.

Yegon (2015) conducted a study on the effect of ERM determinants on financial performance of NSE listed firms in Kenya. The research design adopted was cross-sectional correlation descriptive survey design. Information sourced for the study was based on both Primary and Secondary sources,

The questionnaires were the main instruments used in this study as data for the independent variables (such as firm's characteristics, information technology, staff capacity and regulatory framework was collected using questionnaires) while, data for the dependent variable (financial performance) was collected from secondary sources via record survey sheet. The descriptive and inferential statistics were generated and regression analysis was done to test the null hypotheses using Ftest at 5 percent level of confidence and interpretation done accordingly. The major findings from the study showed that effective management of ERM determinants (firms' characteristics, staff capacity, information technology and regulatory framework) has effect on financial performance of the listed firms in Kenya.

## V. SUMMARY OF LITERATURE REVIEW

The empirical evidence on impact of ERM on financial performance in Nigeria is hardly available; most studies in the area of ERM have concentrated on adoption, implementation of ERM. This research tends to fill such gap by looking at the impact of ERM on sustainable financial performance.

## VI. RESEARCH METHODOLOGY AND DESIGN

This study adopted a descriptive study design. This was adopted since it best describes specific behaviour as it occurs in the environment. The aim of the study was to evaluate the impact of ERM on sustainable financial performance of listed deposit money banks in Nigeria.

### 3.1 Area of the Study

The area of this study covers the banking sector in Nigeria. These banking firms are quoted in Nigerian Stock Exchange (NSE) Market, the study intends to ex-ray their annual reports over times in line with Enterprise risk Management and sustainable financial performance, in Nigeria.

### 3.2 Population of the Study

The target population for this study composed of all the listed banks that had submitted audited financial statements to Nigerian Stock Exchange (NSE).

### 3.3 Sampling and Sampling techniques

The researcher judgmentally selected five (5) banking firms based on availability of data. The annual report of these firms will be used ranging from 2013 to 2018. That is, a period of Six (6) years respectively. The sample size of this study is thirty (30). That is the summation of all the Six years' annual reports of the five (5) selected banking firms.

### 3.4 Method of Data Collection

The data for this research was mainly sourced through secondary data, which is the most suitable for this work. Since the work is based on the impact of ERM on the sustainable financial performance of listed deposit money banks in Nigeria. Secondary data are already existing data or information extracted from the selected area or population of study. For the purpose of this work, the annual report as published of the selected deposit money banks will be of great assistance to the researcher.

**3.5 Method of Data Analysis**

There is need for deductive and inferential statistical tools to be employed in order to get a justified and critical analysis of the research. Inferential statistics will be used to test the hypothesis while multiple regression will be employed to analyse the data.

Multiple regression analysis shows the degree of relationship between the independent variable (ERM) and one or more dependent variables (Sustainable financial performance). F-test will be employed to determine whether to accept or reject the null hypotheses formulated.

**3.6 Model Specification**

Based on the hypotheses of this study, the following models were derived to conduct the multiple regression analysis.

$TQ = (ERM_t) \dots \dots \dots (1)$

$EPS_t = (ERM_t) \dots \dots \dots (2)$

The dependent variable (TQ & EPS) for financial performance and two independent variables (FS, L) being FS (firms' size), L (Leverage). The proxies for ERM (Firms Size, Leverage) was adapted from the works of Nyagah (2014) and Mukhtar & Soliman(2017).

$TQ = \beta_0 + \beta_1FS + \beta_2L + E_i \dots \dots \dots (1)$

$EPS = \beta_0 + \beta_1FS + \beta_2L + E_i \dots \dots \dots (ii)$

Where:

TQ =Tobin Q

EPS = Earnings per Share

FS = Firms' Size

L = Leverage

$\beta_1$  = Regression coefficient of variable FS

$\beta_2$  = Regression coefficient of variable L

$\beta_0$  = Constant

$E_i$  = Error term

**VII. DATA PRESENTATION**

**Table 4.1 ERM Variables and Sustainable financial performance**

BANKS	YEARS	EPS	T.Q	FS	LEVERAGE	LOG (FS)
FBN	2013	1.45	0.03	2,770,674,000,000	5.55	12.44
	2014	-0.03	0.232	270,977,000,000	0.004	11.43
	2015	2.16	0.26	311,811,000,000	0.012	11.49
	2016	0.17	0.016	287,770,000,000	0.034	11.46
	2017	0.11	0.013	3,332,375,000,000	6.25	12.52
	2018	1.53	0.007	3,557,782,000,000	6.32	12.55
GTB	2013	1.69	0.0064	1,608,652,646,000	5.87	12.21
	2014	3.05	0.006	1,620,317,223,000	0.82	12.21
	2015	3.17	0.0049	1,904,365,795,000	4.77	12.28
	2016	2.91	0.0044	2,126,608,312,000	4.75	12.33
	2017	3.32	0.021	2,277,629,224,000	4.16	12.36
	2018	3.4	0.024	2,613,340,074,000	4.47	12.42
Access Bank	2013	1.02	0.012	949,382,097,000	4.08	11.98
	2014	1.57	0.0075	1,515,754,463,000	5.38	12.18
	2015	1.15	0.013	1,704,094,012,000	5.95	12.23
	2016	1.74	0.011	1,981,955,730,000	5.32	12.3
	2017	2.37	0.00021	2,411,944,061,000	5.69	12.38
	2018	2.21	0.00015	3,094,960,515,000	6.33	12.49

<b>ECOBANK</b>	2013	-1.58	0.01	714,063,959	7.49	8.85
	2014	1.59	0.01	1,059,137,257	8.87	9.02
	2015	1.77	0.0095	1,354,930,871	8.8	9.13
	2016	1.6	0.0016	1,750,270,423	7.51	9.24
	2017	0.17	0.0013	1,555,183,067	6.97	9.19
	2018	0.09	0.000063	1,662,508,825	6.37	9.22
<b>FCMB</b>	2013	0.71	0.0031	593,114,362,000	4.07	11.77
	2014	0.77	0.000053	890,313,606,000	5.8	11.95
	2015	0.66	0.039	131,482,189	4.9	8.12
	2016	0.7		131,570,290	6.06	8.12
	2017	0.13		129,378,261	0.008	8.11
	2018	0.19		131,366,185	0.009	8.12

Source: Annual Report of the above banks 2013-2018

TABLE 4.2 Regression results on the effect of ERM on EPS

Coefficients <sup>a</sup>						
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	-3.029	1.325		-2.286	.030
	FS	.383	.113	.549	3.399	.002
	LEV	.029	.073	.064	.394	.697

a. Dependent Variable: EPS

R	=	.548
R-Square	=	.300
Adjusted R-Square	=	.248
F – Statistic (df1= 2 & df2= 27)	=	5.789 (.008)
Durbin Watson Statistic	=	.1397

Source: Researcher’s Estimation, 2020

TABLE 4.3 Regression results on the effect of ERM on TQ

Coefficients <sup>a</sup>						
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	.103	.069		1.493	.147
	FS	-.001	.006	-.042	-.255	.801
	LEV	-.012	.004	-.529	-3.229	.003

a. Dependent Variable: TQ

R	=	.528
R-Square	=	.279
Adjusted R-Square	=	.225
F – Statistic (df1=2 & df2=27)	=	5.215 (.012)
Durbin Watson Statistic	=	1.337

Source: Researcher’s Estimation, 2020

## 7.1 Data Analysis

Table 4.1 showed the major variables of ERM and Sustainable financial performance for a period of six years obtained from five deposit money banks annual reports from 2013 to 2018.

Table 4.2 showed the regression results between ERM (FS, LEV) and earnings per share (EPS). The regression results showed that the estimated coefficient of the regression parameter have a positive sign and thus conform to the a-priori expectation. The implication of this sign is that the dependent variable earnings per share (EPS) are positively affected by ERM (FS, LEV). The coefficient of determination R-square of 0.300 implied that 30% of the sample variation in the dependent variable earnings per share (EPS) is explained or caused by the explanatory variable while 70% is unexplained. This remaining 70% could be caused by other factors or variables not built into the model. The fairly low value of R-square is an indication of a poor fairly relationship between the dependent variable earnings per share (EPS) and independent variables ERM (FS, LEV). The value of the adjusted R<sup>2</sup> is 0.248 showed that the regression line which captures 24.8 per cent of the total variation in earnings per share (EPS) is caused by variation in the explanatory variable specified in the model with 75.2 per cent accounting for the stochastic error term. The F-statistic was also used to test the overall significant of the model. The F-value of 5.789 is an indication that the model is statistically significant at 5 percent level of significant at degree of freedom df<sub>1</sub>= 2 and df<sub>2</sub>= 27. Finally, the test of autocorrelation using DW test shows that the DW value of 1.397 falls within the conclusive region of DW partition curve. Hence, we can clearly say that there exists no degree of autocorrelation.

Table 4.3 showed the regression results between ERM (FS, LEV) and Tobin Q (TQ). The regression results showed that the estimated coefficient of the regression parameter have a positive sign and thus conform to the a-priori expectation. The implication of this sign is that the dependent variable Tobin Q (TQ) is positively affected by ERM (FS, LEV). The coefficient of determination R-square of 0.279 implied that 27.9% of the sample variation in the dependent variable Tobin Q (TQ) is explained or caused by the explanatory variable while 72.1% is unexplained. This remaining 72.1% could be caused by other factors or variables not built into the model. The fairly low value of R-square is an indication of a poor fairly relationship between the dependent variable Tobin Q (TQ) and independent variables ERM (FS, LEV). The value of the adjusted R<sup>2</sup> is 0.225 showed that the regression line which captures 22.5 per cent of the total variation in Tobin Q (TQ) is caused by variation in the explanatory variable specified in the model with 77.5 per cent accounting for the stochastic error term. The F-statistic was also used to test the overall significant of the model. The F-value of 5.215 is an indication that the model is statistically significant at 5 percent level of significant at degree of freedom df<sub>1</sub>= 2 and df<sub>2</sub>= 27. Finally, the test of autocorrelation using DW test shows that the DW value of 1.337 falls within the conclusive region of DW partition curve. Hence, we can clearly say that there exists no degree of autocorrelation.

## 7.2 Test Of Hypotheses

### Hypothesis one

**H<sub>0</sub>:** Enterprise risk management has no significant effect on earnings per share.

**H<sub>1</sub>:** Enterprise risk management has a significant effect on earnings per share.

With reference to table 4.2, the calculated f-statistics of 5.789 with probability value of 0.008 showed that the null hypothesis is rejected and the alternative accepted. This means that Enterprise risk management has a significant effect on Earnings per Share.

### Hypothesis two

**H<sub>0</sub>:** Enterprise risk management has no significant effect on Tobin Q.

**H<sub>1</sub>:** Enterprise risk management has a significant effect on Tobin Q.

With reference to table 4.3, the calculated f-statistics of 5.215 with probability value of 0.012 showed that the null hypothesis is rejected and the alternative accepted. This means that Enterprise risk management has a significant effect on Tobin Q.

## 7.3 Discussion of findings

Based on the analysis and the empirical results the study revealed the following findings;

- (i) That Enterprise risk management (FS, LEV) has a positive and significant effect on earnings per share. This result is not in line with that of Laisaikorn & Rompho (2014) which concluded that there is a weak positive correlation between ERM and financial performance (EPS).
- (ii) Enterprise risk management (FS, LEV) has a positive and significant effect on Tobin Q. This result is in line with the work of Mukhtar & Soliman (2017) and Rakauskaite (2016) which also concluded on a significant effect of ERM on firms value (using Tobin Q).
- (iii) The study also revealed that there is a fair relationship between ERM (FS, LEV) and earnings per share and Tobin Q.

## VIII. CONCLUSION

The study examined the effect of Enterprise Risk Management on Financial Performance of Deposit Money Banks in Nigeria. Thus, the study concludes that Enterprise Risk Management has a positive significant relationship on financial performance of Deposit Money Banks in Nigeria to a very large extent as revealed from the analysis and interpretation of findings.

### 8.1 Recommendations

- 1) Financial institutions in Nigeria should employ robust Enterprise Risk Management Practices as these are likely to greatly influence their financial performance in one way or another.
- 2) In order to improve on financial performance, financial institutions should focus more on improving on how they assess their internal environment and work on control activities as these are likely to enhance financial performance of firms.
- 3) Central Bank of Nigeria and other regulators should endeavour to strengthen the enforcement of risk control mechanism to boost a robust bank performance.

## IX. REFERENCES

1. Agbonkpolor, T. (2010) Risk management and regulatory failures in banking: Reflections on the current banking crisis in Nigeria. *Journal of Banking Regulation*, vol. II.
2. Al-Tamimi, H. (2002). Risk management practices: An empirical analysis of the UAE commercial banks. *Finance India*, 16(3), pp. 1045-57.
3. Beasley, M.S., Clune, R., & Dana, R. (2005). Enterprise risk management: an empirical analysis of Factors associated with the extent of implementation. *Journal of Accounting and Public Policy*, 24(6), 521-531.
4. Bizuayehu, M. (2015). The impact of credit risk on financial performance of banks in Ethiopia. (Masters thesis), Addis Ababa University, Ethiopia.
5. Ele, S.I. & Oko, J.O. (2015). Exploring the relevance of cloud computing in governance, risk and compliance (GRC): A perspective in cloud-based enterprise risk management (CB-ERM). *Journal Of Integrative Humanism*, 6(1), 161-172.
6. Fisayo, F.O. & Nwankwo, S.I. (2015). Business risk management and Organisational performance: Empirical evidence from small and medium Enterprises (SMEs) in Nigeria.
7. Gossy, G. (2008). A stakeholder rationale for risk management: Implications for corporate finance Decisions, Google Books
8. Hoyt, R.E. & Liebenberg, A.P. (2008). The value of enterprise risk management: Evidence from U.S. insurance industry. <https://www.questia.com/library/journal/1G1-275038030/the-value-of-enterprise-risk-management>.
9. Izah, M.T., & Ahmad, R.R. (2011). The relationship between enterprise risk management (ERM) and firm value: Evidence from Malaysian public listed companies. *International Journal of Economics and Management Sciences*, 1(2), 32-41.
10. Kleffner, A., Lee, R., & McGannon, B. (2003, February). The effect of corporate governance on the use of enterprise risk management: Evidence from Canada. 6, 53-73.

11. Laisasikorn, K., & Rompho, N. (2014). A study of the relationship between a successful enterprise risk management system, a performance measurement system and the financial performance of Thai listed companies. *Journal of Applied Business and Economics*, 16(2).
12. Liebenberg, A.P., & Hoyt, R.E. (2003). The determinants of enterprise risk management: Evidence from the appointment of chief risk officers. *Risk Management & Insurance Review*, 6, 37-52.
13. Magezi, J.K. (2003). A new framework for measuring the credit risk of a portfolio. Institute for Monetary and Economic Studies (IMES), 1-45.
14. Markowitz, H.M., (1952). Portfolio Selection. *Journal of Finance*, 7(1), 77-91.
15. Modigliani, F. & Miller, M.H., (1958). The cost of capital, corporate finance and the theory of Investment. *American Economic Survey*, 48, 261-297.
16. Mukhtar, A., & Soliman, .A. (2017). Enterprise risk management and firm performance: An integrated model for the banking sector. *Banks and Bank Systems (open-access)*, 12(2), 116-123.
17. Muteti, S.R. (2014). Relationship between financial risk management and financial performance of commercial banks in Kenya. M.Sc Thesis Publication.
18. Mucheru, M.N. (2016). Effect of risk management strategies of financial performance of insurance companies in Kenya. Published M.Sc Thesis, University of Nairobi.
19. Nocco, B. W., & Stulz, R. M. (2006). Enterprise risk management: theory and practice. *Journal of Applied Corporate Finance*, 18(4), 8-20.
20. Nyagah, B.K. (2014). The effect of enterprise risk management on financial performance of pension Fund management firms in Kenya. Published M.Sc. Thesis, University of Nairobi.
21. Omasete, C.A. (2014). The effect of risk management on financial performance of insurance companies in Kenya. Unpublished M.Sc in Finance Thesis, University of Nairobi.
22. Onyekwelu, U.L., & Onyeka, V.N., (2014). Financial risk management: A review of the role of the Central Bank of Nigeria. *Research Journal of Finance and Accounting*, 5(5).
23. Oko, S. U; IJING, J.; IGBAJI, P. M. & Adie, R. I. (2015) Entrepreneurship: A Driving Force for Economic Growth and Development of Cross River State. *Scholars Jomurnals of Economics, Business and Management*. Accepted: November 8, 2015. Available online. <http://saspiournals.com/sjebm>. Volume 2 (11) pages 1115- 1127
24. Pagach, D.P. & Warr, R.S. (2010). The effects of enterprise risk management on firm performance. Available at SSRN: <https://ssrn.com/abstract=1155218>
25. Pandey, I.M. (2009). *Financial Management*. India: Vikas Publishing House.
26. Rakauskaitė, A. (2016). Impact of financial risk management on companies' financial performance and value during crisis: European non-financial sectors- Energy and telecommunication. Published M.Sc. Thesis in Financial Economics presented to ISM University of Management and Economics.
27. Saiful. (2017). Contingency factors, risk management, and performance of Indonesian banks. *Asian Journal of Finance & Accounting*, 9 (1).
28. Sensarma, R. and Jayadev, M. (2009). Are bank stocks sensitive to risk management?, *The Journal of Risk Finance*, 10(1), 7-22.
29. Sobel, P.J & Reding, K.F. (2004) Aligning corporate governance with enterprise risk management, *Management Accounting Quarterly*, Winter [Online] available at [http://findarticles.com/p/articles/mi\\_m000L/is\\_2\\_5/ai\\_n6118711/](http://findarticles.com/p/articles/mi_m000L/is_2_5/ai_n6118711/)
30. Soyemi, K.A., Ogunleye, J.O., & Ashogbon, F.O., (2014). Risk management practices and financial performance: Evidence from the Nigerian deposit money banks (DMBs). *The Business & Management Review*, 4 (4).
31. Yegon, K.C. (2015). Effect of enterprise risk management determinants on financial performance of listed firms in Kenya. (Published PhD Thesis), Jomo Kenyatta University of Agriculture and Technology, Nairobi. [https://en.wikipedia.org/wiki/Enterprise\\_risk\\_management](https://en.wikipedia.org/wiki/Enterprise_risk_management).