International Journal of Academic Multidisciplinary Research (IJAMR)
ISSN: 2643-9670
Vol. 4 Issue 10, October - 2020, Pages: 158-172

Empirical Study of Corporate Risk Management on Financial Performance: Nigeria Banks' Perspective

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Abstract: *This study was carried out to determine the Impact of Corporate Risk Management on Financial Performance of banks in Nigeria. To achieve this, the study utilized a pooled research design which is a combination of both cross-sectional and time-series design properties. Population comprised all the listed quoted commercial banks in Nigeria from (2010-2019), and a purposive sampling techniques was applied to select 15 banks based on availability of annual report required for the study. Statistical methods applied Pearson Correlation and Regression analysis on the secondary data collected. The findings are that: Risk diversification has a significant positive impact on ROA; Risk Hedging has a significant positive impact on ROA; Risk transfer has a significant positive impact on ROA; while the three study models shows the Adjusted R-square to have 43%, 42%, 76% respectively for (**H_1 **to** H_3**), and Probability figures of (0.00001, 0.00000, 0.00004 as well indicating that the models were significantly positive on financial performance of listed banks in Nigeria. This study concludes that risk management techniques of risk diversification, risk hedging, and risk transfer in fraud risk management is significantly positive on ROA of listed banks in Nigeria. The study recommends that banks' managers in their risk management decisions should ensure proper risk diversification; risk hedging and risk transfer, as these increase financial performance.*

Keywords: Risk Diversification, Risk Hedging, Risk Transfer, Risk Management.

Introduction

Background of the Study

Not just in Nigeria but globally, the risk of fraudulent activities, dubious financial schemes, falsification of corporate data, fraudulent financial reporting have been on increase since early 1990. Improper risk diversification has attracted so much attention in the literature. OECD (2014) observed that risk management failures at major corporations have captured the headlines for many years, primarily in the financial sector, but in other sectors as well, and have not always been the result of shortcomings in financial risk-taking. There are environmental catastrophes, as well as accounting fraud from the non-financial sector within the past years. Many times these failures were facilitated by corporate governance failures, where boards did not fully appreciate the risks that the companies were taking or possibly they too were engaging in reckless risk-taking themselves, and involved in deficient risk management systems. Corporate bodies need to know the importance of an effective risk governance framework as underlined in the (COSO) Committee's report on The Corporate Governance Lessons from the Financial Crisis.

There are two major risks that companies face and they are financial and non-financial. Considering that in the context of financial institutions, the focus naturally tends to be on financial risks, such as credit, liquidity or market risks, although there is also an increasing emphasis on operational risk. Conversely the non-financial institutions, the same risks will also be present, although not always to the same extent as in financial institutions. Some other risks, such as IT and outsourcing risks are likely to concern non-financial institutions just as much, and in some cases (environmental, safety and health risks) are of stronger primary concern to nonfinancial corporations. Risk governance rules and practices appropriate for financial institutions therefore may not be directly applicable to non-financial institutions. At the time, some more general lessons can probably be learned from risk management failures in the financial sector, (OECD, 2014)

Risk management in banking has been theoretically defined as the logical development and execution of a plan to deal with potential losses (Stulz, 2008). What is the main purpose of risk management in banking? The main focus of the risk management practices in the banking industry is to manage an institution's exposure to losses or risk and to protect the value of its assets. Financial corporations like banking business are generally is regarded as risky and thus need proper business risk diversification. Economic theory suggests that there are two economic units - surplus unit and deficit unit - and these economic units prefer to use financial institutions (intermediaries) to transfer the necessary funds to each other. Certainly, this process increases the importance of the financial intermediaries in the economy, but also poses some risks to these institutions. Economic units usually prefer to use intermediaries because of the problems associated with "asymmetric information. Thus to solve the asymmetric information problems, institutions are recruiting skilled employees and systems that is why the scarce sources of funds are now used more effectively by units in the economy. Therefore, the funds are channeled to the most valuable projects that are beneficial to the economy. However, this process of channeling funds from one unit to another naturally has some inherent risks (such as credit risk, market risk, interest rate risk, liquidity risk, operational risk and legal risk) within the process. Financial institutions are usually managing those risks as part of their normal operations through diversification, hedging, transferring and sharing.

Financial institution's ability to measure, monitor, and steer risks comprehensively is becoming a decisive parameter for its

strategic positioning. Corporations' risk diversification framework, risk management process, and internal controls, risks controls, depends on the nature, size and complexity of the institutions' activities. Nevertheless, (Oyedele, 2014) stated that there are some basic principles that apply to all financial institutions irrespective of their size and complexity of business that reflect the strength of an individual bank's risk management practices. Proper risk diversification and management can improve institution financial performance.

Financial performance is a measure of how well corporation use assets from its primary mode of business to generate revenues. This is a measure of financial health and longevity of an organization can also be determined through the financial performance. Financial performance guides management on the strategies and policies to adopt to improve sustainability of the organization (Amahalu, Egolum, Ezechukwu & Obi, 2018). Corporations like banking industry sector are characterized by intensive competition considering both the cost and the products. Banks are forced to identify and adopt new and more efficient ways to fight their competitors and to gain more customers that will be retained and loyal. Sharma, (2012) stated that banks make efforts to reduce costs and make better offers by screening borrowers and differentiating the prices accordingly so as to maximize the profits and minimize the losses-risks.

Statement of Problems

Poor financial performance of deposit money banks can lead to failure and financial crunch which have undesirable impacts on the economic growth (Ongore & Kusa, 2013). Credit and liquidity problems may adversely affect the financial performance of a bank as well as its solvency if not properly managed. Credit risk management has been an essential part of the loan process in the banking sector (Omondi, 2015). The current challenges facing the financial services industry includes customer retention, financial risk, legal and compliance risk, strategic risk, technological risk, stiff competition, irregularities and liquidity difficulties and sometimes not able to meet its financial obligations and poor risks management that has resulted in failure of banks. The challenge of risk management techniques such as risk diversification in the form of hedging risk, risk sharing and risk transfer has resulted in poor risk mitigation and a higher risk profile. Financial institutions especially banks still face many challenges with respect to management of daily risks, despite the tremendous growth in the sector. This has contributed to the deterioration of asset quality that relates to increase in credit risk that reduces the expected profits. More so, market risk emanates from the fluctuations of interest rate and foreign exchange rate that affect their returns since banks accept financial instruments exposed to market price volatility as collateral for loans. Liquidity risk arises due to mismatch of assets and liabilities as well as recessionary economic conditions. Operational risk which is paramount generates losses due to high costs which reduce the returns expected.

Several prior literatures have not pinned down the relationship of risk management and diversification techniques with financial performance. Some of these past studies have attempted to address the issues of risk management providing many techniques: (Khizer, Muhammad & Sharma; 2011; Adeusi, Akeke, Adebisi & Oladunjoye, 2014; Uwalomwa, Uwuigbe & Oyewo, 2015) worked on credit risk; while (Abdul, Khan & Nazir, 2012; Olusanmi, 2015 and Misker , 2015) worked on market risk; (Ongore, 2013; Omondi, 2015 centered on liquidity risk; (Reddy, Locke & Scrimgeour, 2010; Kenny, Jumoke & Faderera, 2014; Kariuki, 2015) investigated on operational risk; and (Ugwu, I. V, 2020) worked on banking fraud risk management. The current study intends to investigate the impact of risk diversification on the performance of banks in Nigeria, as a result that none of the above works considered the entire risk diversification but were centered mainly on narrowed aspect of risk analyses.

The broad objective of this study is to determine the impact of risk management techniques on bank performance in Nigeria; while others are to determine the impact of: risk diversification; risk hedging; and risk transfer on banks performance in Nigeria.

The research questions that guide our study says: what are the impacts of risk diversification; risk hedging; and risk transfer on banks performance in Nigeria?

The null hypotheses of the study are:

Ho_1: Risk diversification has no significant impact on banks performance in Nigeria;
Ho_2: Risk hedging has no significant impact on banks performance in Nigeria; and
Ho_3: Risk transfer has no significant impact on banks performance in Nigeria

Review of Related Literature

Concept Risk

Risk definitions can be based on two words: Probability and Consequences. There are some definitions that state that risk focuses only on the probability of the occurrence of an event; while others focuses on both the probability of risk manifestation and the consequences of the event. This then includes risks and the threats: threat is an event with a low probability of manifestation, but with high negative consequences, since the probability of manifestation is difficult to assess in these cases; while risk is an event with a higher probability of occurrence, for which there is sufficient information to rate the probability and consequences, (Vasile & Croitoru, 2012). Again, risk is the possibility of losing something of values. These values can be physical health, social status, emotional well-being, or financial wealth and these can be gained or lost when taking risk resulting from a given action or

inaction, foreseen or unforeseen, planned or not planned. Risk can also be defined as the intentional interaction with uncertainty (Preston, 2015). Uncertainty is a potential, unpredictable, and uncontrollable outcome; risk is a consequence of action taken in spite of uncertainty. Risk implies future uncertainty about deviation from expected earnings or expected outcome. Risk measures the uncertainty that an investor is willing to take to realize a gain from an investment. Risks are of different types and originate from different situations. Literature has stated different kinds of risk. Hansson and Zalta, (2014) stated different kind of risk as liquidity risk, sovereign risk, insurance risk, business risk, default risk, etc. Various risks originate due to the uncertainty arising out of various factors that influence an investment or a situation. Some concepts about risk are focused only on negative events, while others take into account all variables both threats and opportunities, Vasile and Croitoru, (2012). Smith, (2018) brought out the fact that some concepts about risk are focused only on negative events, while others take into account all variables, both threats and opportunities. However, risk is related to profitability and loss, showing that achieving the expected result of an activity is under the influence of random factors that accompany it in all stages of its development regardless of the domain of activity. The probability of risk occurrence is the possibility that the risk materializes and it can be appreciated or determined by measurement, when the nature of risk and available information permit such evaluation. The risk impact is a consequence of the results (objectives) when risk materializes. If the risk represents a threat, the consequence upon the results is negative and if the risk represents an opportunity, the consequence is positive. Thus, the probability of risk occurrence and its impact on the results contribute to establish the risk value. Many companies allocate large amounts of money and time in developing risk management strategies to help manage risks associated with their business and investment dealings. A key component of the risk management process is risk assessment, which involves the determination of the risks surrounding a business or investment. A fundamental idea in finance is the relationship between risk and return. The greater the amount of risk an investor is willing to take, the greater the potential return (Chen, 2018). However, if risk is not properly handled, it could cause negative effects by deteriorating the quality of management decisions, reducing profit volume and affecting the organization's functionality, with consequences even in blocking the implementation of activities.

Concept of Risk Management

Anderson and Terp as in (Na Ranong & Phuenngam, 2009), stated that fraud risk management is a process that seek to eliminate, reduce and control risks, enhance benefits and avoid detriments from speculative exposures. The main objective of risk management is to maximize the potential of success and minimize the probability of future losses. Thus the risk that becomes problematic can negatively affect cost, time, quality, quantity and whole system performance. Simon and Hillson, (2012) defined risk management as the process of identifying, assessing and controlling threats to an organization's capital and earnings. These threats, or risks, could stem from a wide variety of sources, including financial uncertainty, legal liabilities, strategic management errors, accidents and natural disasters. Consequently, a risk management plan increasingly includes companies' processes for identifying and controlling threats to its digital assets, including proprietary corporate data, a customer's personally identifiable information and intellectual property. Risk management is the identification, evaluation, and prioritization of risks (defined in ISO 31000 as the effect of uncertainty on objectives) followed by coordinated and economical application of resources to minimize, monitor, and control the probability or impact of unfortunate events or to maximize the realization of opportunities (Flyvbjerg & Budzier, 2011). Every business transaction whether financial sector or none financial sector has an equivalent probability of risk attached to it. There is a certainty of risk occurrence when an investor buys low-risk government bonds over riskier corporate bonds; when a fund manager hedges his currency exposure with currency derivatives, and when a bank performs a credit check on an individual before issuing a personal line of credit. Stockbrokers use financial instruments like options and futures, and money managers use strategies like portfolio and investment diversification to mitigate or effectively manage risk. Therefore occurrence of risks can come from various sources including uncertainty in financial markets, threats from project failures (at any phase in design, development, production, or sustainment life-cycles), legal liabilities, credit risk, accidents, natural causes and disasters, deliberate attack from an adversary, or events of uncertain or unpredictable root-cause. Megan, (2015) said that there are two types of events as it pertains risk: negative events which can be classified as risks; while positive events are classified as opportunities.

Fraud risk management is an area of paramount importance to any organization. The fact being that every entity is exposed to risks but an effective fraud risk management is necessary for the improvement of any business performance (Williams, 2002). Fraud risk management was stated by Committee of Sponsoring Organization of Tradeway Commission (COSO, 2004) that fraud risk management is a process, affected by an entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives. Fraud risk management is the process to manage the potential risks by identifying, analyzing and addressing them. The process can help also to reduce the negative impact and the emerging opportunities. This outcome help to mitigate the likely hood of risk occurring and the negative impact when it occurs. In other words, fraud risk management involves identifying, measuring, monitoring and controlling risks. It is to establish that those involved should have a clear view of fraud risk management and fulfill the business operational strategy and objectives, (Ugwu I. V, 2020, a) Further, fraud risk management refers to the practice of identifying potential risks in advance, analyzing them and taking precautionary steps to reduce/curb the risk. These financial risks might be in the form of high inflation, volatility in capital markets, recession, bankruptcy, etc. The actual risk practice or requirement (Coleman, 2019) said that firms, while

practicing risk management, equity investors and fund managers tend to diversify their portfolio so as to minimize the exposure to risk.

Concept of Risk Management Standards, Codes and Techniques

OECD, (2014) said that in many jurisdictions, risk management issues are dealt with (in one way or another) in national corporate governance codes. Internationally, professional institutes and associations also offer their advice. In 1992, the Committee of Sponsoring Organisations of the Treadway Commission (COSO) published an internal control – integrated framework guide and in 2004 an enterprise risk management (ERM) – integrated framework guide. Again a report prepared for the OECD in 2010 concluded, however, "none of the existing guidance on risk management is adequate for the purpose. Most of the guidance is extremely high-level, is process-oriented and gives scant guidance how to create an effective risk management and assurance framework." Further, COSO published guidance on risk assessments and on risk appetite (2012), which provides more specific guidance on certain issues. Then, in 2009, the International Organisation for Standardisation issued its standard for implementation of risk management principles, ISO 31000 as world standard. The main objective of ISO 31000 is to provide principles and generic guidelines on risk management that could achieve convergence from a variety of standards, methodologies and procedures that differ between industries, subject matters, and countries, (OECD, 2014). Apart from the standards and codes of risk management, different techniques and processes which are involved have been opined by some authors in risk management, (Elias, 2017), said that risk management techniques are used to identify, assess and plan responses to individual risks and overall risk. There are traditional risk management techniques which are for handling event risks such as: risk retention, contractual or noninsurance risk transfer, risk control, risk avoidance, and insurance transfer. Other techniques used for other types of risk are, credit, operational, interest rate risks; financial tools such as hedges, swaps, and derivatives, (Arunraj & Maiti, 2017). However, risk management techniques entail the process of making and implementing decisions that will minimize the adverse effects of accidental business losses on an organization. Hartley and Phelps, (2012), observed that making risk management decisions involves a sequence of five steps: identifying and analyzing exposures to loss, examining feasible alternative risk management techniques to handle exposures, selecting the most appropriate risk management techniques to handle exposures, implementing the chosen techniques, and monitoring the· results. Implementing these decisions requires performing the four functions of the managem.ent process: planning, organizing, leading, and controlling resources.

Concept of Risk Diversification

The concept of risk diversification is seen as a technique that reduces risk by allocating investments among various financial instruments, industries, and other categories. It aims to maximize returns by investing in different areas that would each react differently to the same event. Diversification can help an investor manage risk and reduce the volatility of an asset's price movements. It can reduce the risk associated with individual stocks, but general market risks affect nearly every stock and so it is also important to diversify among different asset classes. Diversification is defined as a technique that reduces risk by allocating investments among a multitude of asset types (Shalka, 2011). When corporation diversify, they try to ensure that at any given time, the value of some of the holdings might be down, and some might be up, but overall the investment is performing well. Diversification strives to smooth out unsystematic risk events in a portfolio so that the positive performance of some investments will neutralize the negative performance of others, (Harelimana, 2017)

The risk diversification is a risk management technique that mixes a wide variety of investments within a portfolio. The rationale behind this technique contends that a portfolio constructed of different kinds of investments will, on average, yield higher returns and pose a lower risk than any individual investment found within the portfolio (Chen, 2018). Diversification is a method with which corporation apply in other to reduce the risk of portfolio by choosing a mix of investments. Once portfolio has: been fully diversified, it needs to take on additional risk to earn a higher potential return on portfolio (Paul, 2019). Diversification is the process of allocating capital in a way that reduces the exposure to anyone particular asset or risk. A common path towards diversification is to reduce risk or volatility by investing in a variety of assets. If asset prices do not change in perfect synchrony, a diversified portfolio will have less variance than the weighted average variance of its constituent assets, and often less volatility than the least volatile of its constituents (O'Sullivan & Sheffrin, 2018).

In the views of (Chen, 2018) risk diversification is the allocation of proportional risk to all parties to a contract, usually through a risk premium. It is also called risk allocation. Further, risk diversification consists of spreading risk out into numerous areas to ensure that the potential negative effects of exposure to anyone variable are limited. In other words risk diversification is seen as absolutely essential to ensure that profit losses are minimised and to protect a company's bottom line. Risk diversification is a strategy used by investors to manage risk. By spreading your money across different assets and sectors, the thinking is that if one area experiences turbulence, the others should balance it out. It's the opposite of placing all your eggs in one basket (Samuelson, 2013). By diversification, it reduces portfolio risk by eliminating unsystematic risk for which investors are not rewarded. Investors are rewarded for taking market risk. Because diversification averages the returns of the assets within the portfolio, it attenuates the potential highs and lows. The diversification correlation coefficient is calculated by taking the covariance of the two assets divided by the product of the standard deviation of both assets. Correlation is essentially a statistical measure of diversification.

Risk Hedging

Risk hedging is a risk management strategy applied for reducing exposure to risk investment. Risk hedging tries to deal with: reducing or eliminating the risk of uncertainty. The purpose of strategy is to restrict the losses that may arise due to unknown fluctuations in the investment prices and to lock the profits therein. This works on the principle of offsetting i.e. taking an opposite and equal position in two different markets. In a simple term, it is hedging one investment by investing in some other investment. Companies plan to hedge to ensure against negative event. However, hedging does not prevent the event from occurring, but it surely reduces its impact. Both private investors and portfolio or corporate managers apply hedging technique to minimize the exposure to various types of risks and decrease the negative impact thereon (Sanjay, 2018). Nathan stated that hedging consists of taking an offsetting position in a related security. Hedging is a risk management strategy used in limiting or offsetting probability of loss from fluctuations in the prices of commodities, currencies, or securities. Conversely, hedging is a transfer of risk without buying insurance policies. Risk hedging normally employs various techniques but, basically, involves taking equal and opposite positions in two different markets (such as cash and futures markets). Adam, (2019) says that risk hedging is used in protecting capital against effects of inflation through investing in high-yield financial instruments such as, (bonds, notes, shares) real estate, or precious metals.

An established fact is that investors can hedge the risk of investment by taking an offsetting position in another investment. If the value of the setting investments is measured, it will be inversely correlated. However, the investor doesn't know if the stock's value will up or go down. Therefore, if the stock's value goes down, the investor could incur a loss. But, in order to protect against potential losses, the investor may want to carry on risk hedging. The investor can achieve this by investing in financial instrument that will give profit if the stock invested, or a related security, decreases in value. Thus the moment the investment is hedged, the investor's exposure to the risk of incurring a loss is minimizes. James, (2013) stated that investors could apply several techniques and financial instruments to risk hedging investments, including options contracts, futures contracts, short selling, investing in currencies, investing in commodities, and investing in other assets or derivatives.

In risk hedging, there are forward contracts that are often used by companies as a form of hedging because of their simple characteristics, when compared to other derivatives. Hull (2018) stated that forward contracts were an agreement to buy or sell assets at a certain time in the future at a certain price. This ease allows companies to obtain foreign exchange at a predetermined price, quantity and date: even companies can obtain foreign exchange every day for several days before the contract period (Nugraha, 2017). Hedging techniques can be grouped into futures, forwards, swaps and options. Brigham & Houston (2017) stated that forward contracts are agreements where one party agrees to buy a commodity at a certain price on a certain date in the future and the other party agrees to sell the product. While futures contracts are similar to forward contracts, the difference lies in futures contracts, which are traded on the stock exchange to buy or sell assets in the future at a predetermined price. Swap contracts are an exchange of cash payment obligations (Marcus, Brealey, & Myers, 2008). An option contract is a contract that gives the holder the right to buy / sell assets at a price and a predetermined time period (Aslikan & Rokhmi, 2017).

Nova et al. (2015) found that hedging with swap and forward contracts can increase company value. However, research conducted by Costa and Singh (2013), which states that hedging by companies has a negative but not significant effect on the company's value. In addition, Nguyen (2015), found risk management in the form of hedges can increase company value but not statistically significant.

Risk Transfer

A transfer of risk is a business agreement in which one party pays another to take responsibility for mitigating specific losses that may or may not occur. This is the underlying tenet of the insurance industry (Julia Kagan, 2020). Risk transfer takes place when a party that takes a risk "transfers" the responsibility for adverse consequences (losses) of a risky action onto another party. Normally, risk is transferred for a fee. Thus, risk transfer in principle amounts to the "sale" of risk. Risk transfer takes place when the party that transfers a given risk has faced the risk to begin with, even if only for a short period of time, (Abdul Karim Abdullah, 2013). Risk transfer is a risk management technique whereby one party (transferor) pays another (transferee) to assume a risk that the transferor desires to escape (Muriithi, 2016). Risk transfer involves transferring "only" risk to another person for a price. For example, the downside risk of stock can be transferred by purchasing a call option. In this way, the buyer of call option transfers its risk to the writer of the call option. Risk transfer is a risk management and control strategy that involves the contractual shifting of a pure risk from one party to another and when it is effectively done, this allocates risk equitably, placing responsibility for risk on designated parties consistent with their ability to control and insure against that risk. The risk transfer liability ideally rest with whichever party that has the most control over the sources of potential liability, (Campbell, 2012).

There is a risk transfer only when one party deliberately shifts risk to a different entity, usually by purchasing an insurance policy. This risk may be shifted further, from an insurer to a reinsurer, so that the original insurer does not accumulate too much of a particular type of risk. Risk may also be transferred through contractual agreements to a firm's business partners. Another possibility for risk transfer is for a business to be named as an additional insured on another party's insurance policy, thereby extending insurance coverage to the business. An organization may also insist that a hold-harmless clause be inserted into all contracts signed with other parties, which protects the organization from the acts or omissions of the other parties (Steven, 2017).

Risk transfer is the assignment of a risk to a third party using a legal agreement. They are often purchased by businesses as a hedge

against financial risks such as exchange rate risk. Also, outsourcing a project or process typically transfers a variety of risks to a partner. Such transfers are specified in contract terms. Spacey, (2016) stated that penalties may be put in place where they are triggered if a project or process doesn't meet a set of minimum requirements.

Financial Performance

Financial performance is measured to give the account of stewardship by the management team to the shareholders. The key aspect of this involves measuring the profitability, market value and growth prospect of a company. Accounting-based measures' examines the nature of the relationship between some indicator of the social performance (reputation, revelation of social information, environmental behavior etc., with the company's financial performance obtained from the accounting information such as the historical audited financial statements of the respective companies (Zeng, Xu, Yin & Tam, 2012). Financial performance is commonly used as an indicator of a firm's financial health over a given period of time. The financial performance of a firm can be defined or measured in various different ways including profitability, gauge return, market share growth, return on investment, return on assets, return on equity, liquidity etc (Rassier & Earnhart, 2011). The investigation of Uwalomwa, Uwuigbe and Oyewo (2015) on the relationship between credit risk analysis and banks performance of listed banks in Nigeria found that credit risk analysis has a significant negative effect on the performance of banks in Nigeria. The study of Misker, (2015) found that risk management technique has significant positive effect on bank's financial performance; while, the work of Khalaf, (2012) found no relationship between market risk analysis and financial performance of listed banks in Jordan.

Return on asset is used to proxy corporate performance. Corporate performance can be evaluated by return on assets (ROA). Therefore ROA is defined as the net income divided by total assets to reflect how well a company management is using the company real investment resources to generate profits. ROA is widely used to compare the efficiency and operational performance of company as it looks at the returns generated from the assets of the company. A corporate performance can also be measure through profitability using return on equity (ROE), which indicates how effectively the management of the enterprise is able to turn shareholders' funds into net profit. It is the rate of return flowing to the company's shareholder. The higher ROA and ROE reflects higher managerial efficiency of the company, (Peavler, 2017).

Theoretical Framework

Portfolio Theory

Portfolio theory was advanced by Harry Markowitz in 1952. He defines portfolio as a collection of securities. As most securities are available, investments have uncertain returns and thus risky, one needs to establish which portfolio to own. Markowitz's idea is that the investments in a portfolio should be selected based on their correlation to other assets. "Correlation" is a mathematical term that describes how the price movement of one asset is related to the total value of the portfolio. Markowitz asserts investors should base their portfolio decisions solely on expected returns and standard deviations. Investors should estimate the expected return and standard deviation of each portfolio and then choose the best one on the basis of these two parameters. Expected return can be viewed as a measure of potential reward associated with any portfolio over the holding period and standard deviation can be viewed as a measure of the risk associated with the portfolio, Markowitz (1991). Modem portfolio theory aims to extract the maximum return for any level of risk. Although this approach is highly theoretical, it requires that an investor start with a risk-free asset, such as three-month Treasury bills. The investor then adds diversified risky assets that yield an "efficient" portfolio one with minimum risk and maximum return. We apply this theory to see how risk diversification, risk hedging and risk transfer maximizes or minimizes corporate financial performance.

Empirical Review

Ameer (2010), Chaudhry, Mehmood, & Mehmood (2014) examined the determinants of hedging practices carried out by companies. The results of this research show that the volatility of cash flow and the opportunity for company growth have a positive effect on the hedging decisions of the company. This shows that cash flow volatility can affect the hedging decisions of the company.

Nugraha (2017) examined the role of cash flow volatility and growth opportunities in suppressing financial distress by increasing the use of hedging forward contracts in non-financial companies in Indonesia in the 2014-2016 period. The results of his research indicated that the volatility of cash flow and the opportunity for growth of the company has a significant influence on hedging forward contracts through mediating financial distress variables.

Harelimana, (2017) analyze the effect of diversification on portfolio risk management at Rwanda Social Security Board (RSSB). Both primary and secondary data were collected and analyzed. He found there was a significance strong relationship between diversification of portfolio on portfolio risk management at RSSB where the Pearson correlation coefficient was found to be 0.964.

Kwon-Yong Jin, (2019) examined the impact of asset and activity diversification on the stability of major financial institutions. The research found that under certain conditions, diversification can actually increase systemic risk. Financial conglomerates can be 'too big to manage', they can become too similar to each other and susceptible to coordinated failure, and, most importantly, catastrophic losses in one part of the firm can overwhelm the whole firm.

Lekovic (2018) investigated risk investment diversification as a strategy for reducing investment risk. By applying a qualitative

research methodology, it found that the benefits of the international diversification of investments are still substantial, and as such outweigh specific limitations, and that the number of securities in a portfolio should be increased as long as its marginal benefits, in the form of reduced investment risk, exceed its marginal costs – in terms of increased portfolio management costs, which also represents the main result of the research.

Pasoloran and Daromes, (2020) investigated the role of forward contract hedging in maintaining volatility cash flow and growth opportunity and its impact on investor reaction. They used a population of 242 non-financial companies listed on the Indonesia Stock Exchange from 2013‑2017 and a purposive sampling, using path analysis to analyze the data. Results show that forward contract hedging mediates the effects of volatility cash flow and growth opportunity on investor reaction.

Abdullah, (2013) explores the economic and financial dimensions of risk management and risk transfer from 2008, and then juxtaposes this review with a step-by-step survey on notion of risk sharing. The result shows that risk sharing ensures an efficient allocation of resources and a reduction of waste by providing investors with a powerful incentive—the risk of losses—to exercise due diligence. At the same time, by requiring a greater number of parties to share total risk, risk sharing enhances systemic stability. These constitute compelling reason for utilising risk-sharing contracts in preference to risk transfer modes of risk management.

Ehiogu, (2018) investigated the alternative risk transfer (ART) and its implication on business operations in Nigeria. The study showed that alternative risk transfer is beneficial to individuals, corporate organizations as it presents risk managers with more opportunities to hedge risks in new and innovative ways, and to be less dependent on insurance cover. This study in conclusion puts forth that, alternative risk transfer enable companies to select the most appropriate risk finance and acquire contingent capital at economic cost.

Otieno, Nyagol and Onditi, (2016) established the relationship between Credit risk management and financial performance of Microfinance banks in Kenya using longitudinal research design panel data from a sample of 6 MFBs and document analysis from financial reports. Analyses adopted, Descriptive statistics, Pearson correlation and Multiple regression model. The findings were that credit risk management with PAR and LLPCR parameters had a strong negative correlation (r=0.68), giving a significant negative relationship with both ROAA and ROAE performance measures as depicted by regression coefficient of -0.2 estimated by GMM.

Ogada, Achoki and Njuguna, (2016) assessed the effect of diversification on the financial performance of merged institutions in Kenya. A population of 51 and purposive sampling using primary and a secondary data collection template was applied. The result showed that diversification had no significant effect on financial performance of merged institutions.

Kambi and Ali, (2016) established the effects of financial risk management practices on the financial performance of listed banks at the Nairobi Securities Exchange using published annual financial statements from 2008-2014 and a sample size 44 listed banks at the NSE. The study found out that banks enter into contract to sell/purchase a set amount of foreign currency at a pre-determined price in a given future date and use currency options when dealing in foreign currency denominated transactions, bank identifies any other expected cash receipts, income from operating and non-operating activities and outline the expected collections from their budgeted period income and Banks identify the design, conduct and evaluation of the training programme and usually have a checklist to guide them on their day to day operations.

Chege, (2016) determined the relationship between hedging strategies and financial performance of non-financial firms listed at the Nairobi Securities Exchange. The study adopted a descriptive research design targeting 46 listed non-financial firms on the NSE applying data collected for a period of 5 years 2011-2015. The correlation analysis revealed that ROA and lead and lag strategy of hedging had strong positive correlation with lead and lag hedging strategy and that forwards and currency invoicing were significant in explaining the variations in financial performance.

Mulwa and Kosgei, (2016) used an ex-post facto explanatory design to investigate whether bank diversification affects financial performance and whether this effect is moderated by solvency and credit risk based on panel data from 34 commercial banks in Kenya over nine firm years. The study found that income and asset diversification negatively and significantly affect commercial bank ROA while geographical diversification significantly and positively affect both ROA and ROE. The study also found a significant positive moderation effect of credit risk on relationship between income diversification and ROA but a significant negative; effect on relationship between asset diversification and geographical diversification with both ROA and ROE. On solvency risk, the study found a significant positive moderation effect on relationship between geographical diversification and ROE.

Onang'o, (2017) investigated the effect of credit risk management on the performance of commercial banks listed at the Nairobi Securities exchange in Kenya. The specific objectives were to find the effects of capital adequacy ratio, loss given default ratio, loan loss provision ratio and non-performing loans ratio on the performance of the banks. The population of the study was 44 licensed commercial banks in 2014 with data collected from a purposive sample of 10 banks Data was diagnosed for and treated, where necessary, of the problems of panel regression. Using a longitudinal study design and a random effects model specification a panel Estimate Generalized Least Squares regression, the study found a statistically no significant relationship between capital adequacy ratio; a statistically no significant relationship between loss given default ratio; a statistically no significant relationship between loan loss provision ratio; and a statistically significant negative relationship between nonperforming loan ratio and bank stock performance.

Kiptisya, (2017) established the effect of foreign exchange risk management on the financial performance of commercial banks in Kenya. The study used population of 100 employees and a sample size of 80 employees using primary data analyzed with multiple linear regression. On the performance of the bank the findings revealed that most of the respondents agreed that the bank had the required level of capital to enable it withstand risks, management is, efficient to determine the level of costs and profitability, and has seen increased ROE and ROA over the years. A correlation analysis was done between financial performance and methods of foreign exchange risk management, and methods used by commercial banks to predict forex and manage the effect on financial performance revealed that there was a significant positive relationship between performance and Risk management.

Wanjohi, Wanjohi and Ndambiri, (2017) analyzed the effect of financial risk management on the financial performance of commercial banks in Kenya. (ROA) was averaged for five years (2008-2012) as banks' financial performance using a self-administered survey questionnaire a multiple regression analysis. The study found that majority of banks were practicing good financial risk management and hence they have a positive correlation to the financial performance.

Nzioka and Maseki (2017), studied the effects of hedging foreign exchange risk on financial performance of non-banking companies listed at the Nairobi securities exchange with a population of 49 non-banking listed firms and collected primary data analyzed with descriptive statistics and multiple regressions. The results showed that, taking all factors into account (internal hedging techniques, external hedging technique, inflation and interest rates) performance of non-financial firms would be 0.564 and further indicated that internal hedging had the greatest effect on the firm performance ($\beta = 0.551$), Inflation ($\beta = 0.322$), External hedging ($\beta = 0.133$ while interest rate ($\beta = 0.024$) had the least effect but they were all significant to the firms performance.

Bagh, Muhammad and Razzaq, (2017) examined the impact of risk management practices on financial performance of selected listed commercial banks of Pakistan, using 18 sample size of top performing banks from 2004-2016, classified into three groups i.e. large, medium and small commercial banks on the base of market share. Results found that risk management practices have significant impact on financial performance of small, medium and large banks.

Giraldo-Prieto, Uribe, Bermejo and Herrera, (2017) studied the effect of the use of derivatives in the market value of the company from 2008-2015 in Colombia, using added value lied in the analysis that was done by economic sectors, identified by ISIC codes and grouped into five (5) macro sectors (Agriculture and livestock, Commercial, Industrial or Manufacture Services, and Construction). The methodology used Pooled regression with fixed and random effect. They found a statistical and financially significant premium for hedges found on companies exposed to exchange rate risks that use derivatives of a 6.3% average on the market value and also mixed results were found in relation to the variables analyzed in the model.

Halim, Mustika, Sari, Anugerah and Mohd-Sanusi (2017), examined the effect of the risk management committee (RMC) on firm performance, and the intervening effect of the risk management committee on the relationship between corporate governance, firm size, financial reporting risk, and firm performance in Malaysia from 2007-2014. A purposive sample of 299 firms and secondary data were applied and the results indicated that the entire research hypothesis is accepted. They found that the RMC affects firm performance, and that RMC affects corporate governance, firm size, and financial reporting risk on firm performance and that existence of RMC would facilitate the company to control better the quality of financial reporting risks.

Nilsson and Arevalo (2017), studied the effect of risk hedging on firm performance using 31 shipping companies in Europe and North America and its impact on ROlC from 2009- 2014. They found that ROlC interacts with hedging and investments and further found no evidence that hedging fuel costs has any statistically significant effect on ROIC. Regarding the interaction between investing and fuel costs and its effect on ROIC, it was found that bunker fuel prices are negatively related to capital expenditures and that among shipping firms that engaged in fuel hedging, higher capital spending contributed positively to ROIC. Again, univariate results found that fuel cost hedgers had lower operating cash flow volatility and EBIT margin volatility and Fuel cost hedgers were also larger and less levered.

Hailu and Tassew (2018) investigated the impact of investment diversification on financial performance of 17 Ethiopian Commercial Banks covering the period of 2013-2017 and the data was analysed using random effect regression. It was found that investment in financial assets, government security, insurance, loan portfolio and investment size have positive significant impact; interest and exchange rate volatility have negative significant impact on financial performance. Thus investment diversification positively affects the financial performance.

Mohammed, Basariah and Sitraselvi (2018) examined the impact of risk management committee characteristics RMCC (risk management committee size RMCS, risk management committee composition RMCC, risk management committee meeting RMCM) on the market performance (market-to-book value ratio, (MTB» of listed financial service firms in Nigeria. A sample of 45 financial service firms from 2012 -2016 applied. Regression result revealed that RMCS has a significant, but negative impact on firm performance; while RMCC and RMCM has a significant positive effect on firm performance as expected by their hypotheses.

Lenee and Oki (2018) examined the effect of the use of forwards, futures, options and swaps to hedge interest rate and foreign exchange rate risks of 5 financial and 5 nonfinancial firms selected from the UK FTSE 100 from 2005-2014, The results showed that: (l) financial firms tend to hedge more of interest rate risks while nonfinancial firms hedge more of foreign exchange rate risks; (2) hedging interest rate risks by both groups with the use of a combination of forwards and futures derivatives was found to be positive and statistically significant with return on assets, hence increases firm performance, but directly has a reverse effect

when only swap derivatives are used; and (3) the use of one or more of any financial derivatives to hedge foreign exchange rate risk is seen to be negative and statistically significant with return on capital employed, which translates to a decrease in firm performance..

Okere, Isiaka and Ogunlowore (2018) explored the impact of risk management (credit and liquidity) on financial performance of money deposit banks in Nigeria from 2009-2017. Methodology used Hausman test, descriptive statistics and results found a positive relationship between risk management and financial performance.

Anton (2018) investigates the effects of enterprise risk management implementation on the firm value in different economic environments from (2001-2007). Result found that ERM adoption is associated with higher firm values, indicated by a Tobin's Q premium of roughly 46.5 % with a positive and statistically significant with size and leverage, on one hand, and firm value, on the other hand. But extending to financial crisis (2001-2011), ERM does not affect firm value in any significant manner.

Alawattegama (2018) checked the effect of the adoption of enterprise risk management (ERM) on the performance of the diversified industry of Sri Lanka from 2010-2017. The extent of the adoption of ERM was assessed based on eight ERM functions recognized by the ERM integrated framework of the COSO of the Treadway Commission and applied ROE as firm performance. He found ERM supportive internal environment, risk-aligned objective setting, event identifications, and risk response have a positive but statistically insignificant impact; risk assessment and control activities have a negative impact; information & communication and monitoring functions has a significant impact; and finally monitoring function has a negative impact on the firm performance.

Shuey-Yeh and Hsiao- Yi (2018) examined whether financial holdings management improved the operational performance using a sample of 30 Taiwanese listed banks divided into two categories of financial holding subsidiary and independent banks without financial holdings operational method. Results showed that the banks could enhance their operational performance by managing risks and that the effects of the risk management factors on their operational performance differed between the two operational methods. Many operational performance indicators showed that financial holding subsidiary banks outperformed independent banks.

Research Methodology

This study design applied ex-post facto to determine the impact of explanatory variables on the criterion variable by using the appropriate testing technique to test the posited hypotheses.

Population focus is on all the listed quoted commercial banks in Nigeria from (2010-2019), and using a purposive sampling techniques, 15 banks were selected considering availability of annual report required for the study.

The study used three independent models and the statistical analyses applied on the secondary data collected are Pearson Correlation and Regression analysis.

The dependent variable of the study is Financial Performance and is proxy by Return on Assets

Financial Performance = Return on Asset, ROA

The independent variable Risk Management is proxy by Risk Diversification, Risk Hedging, Risk Transfer and they are measured as follows:

Risk Diversification is (Investment in Treasury Bill), INVTB= Investment in Treasury Bills/ Total Investment Portfolio

Risk Hedging is (Market Risk Exposure Hedged), MREH= Log of Financial Assets Pledged as Collateral with CBN

Risk Transfer is Risk Premium Paid, RPPD= Logarithm of Insurance Premium Paid

Control Variables applied in the study are:

Bank Size, BSZ = Natural Log of Assets,
Leverage, LEV= Total Debt/Total Equity.

Model specifications of the study are:

$ROA_{it} = \beta_0 + \beta_1 INVTB_{it} + \beta_2 BSZ_{it} + \beta_3 LEVit + \mu_{it}$ -- -- Model 1

$ROA_{it} = \beta_0 + \beta_1 MREH_{it} + \beta_2 BSZ_{it} + \beta_3 LEVit + \mu_{it}$ -- -- Model 2

$ROA_{it} = \beta_0 + \beta_1 RPPD_{it} + \beta_2 BSZ_{it} + \beta_3 LEVit + \mu_{it}$ -- -- Model 3

By definition as follows:

β_0 = Constant term (intercept) of the study model; β_1- β_3 = Coefficients of Risk Management Techniques; μU= Component of unobserved error term of bank i in period *t;* $INVTB_{it}$ = Investment in Treasury Bills of bank *i* in period *t;* $MREH_{it}$ = Market Risk Exposure Hedged of bank *i* in period *t;* $RPPD_{it}$ = Premium Paid of bank *i* in period *t;* BSZ_{it} = Bank Size of bank *i* in period *t;* LEV_{it} = Leverage of bank *i* in period *t*.

The study decision is based on 5% (0.05) level of significance; while the null hypothesis (H_o) will be accepted, if the Prob (F - statistic) value is greater (>) than the stated 5% level of significance, otherwise reject it.

Data Analysis, Presentation and Presentation

Pearson Correlation Matrix

	ROA	INVTB	MREH	RPPD	BSZ	LEV
ROA	1.000	0.443	0.234	0.073	-0.645	-0.663
INVTB	0.443	1.000	0.030	-0.264	-0.601	-0.370
MREH	0.234	0.030	1.000	-0.152	0.247	0.235
RPPD	0.083	-0264	-0.152	1.000	0.153	-0.239
BSZ	-0.645	-0.601	0.247	0.153	1.000	0.645
LEV	-0.663	-0.370	0.233	-0.239	0.638	1.000

Source: Authors' Computation

Pearson Correlation Matrix

The above result shows that the three independent variables have a positive but weak association between risk management and financial performance (ROA). There is a positive correlation coefficient between INVTB, MREH, RPPD), and ROA indicated as follows: 0.443, 0.234, and 0.083 respectively. However, the control variables of BSZ, LEV and ROA were negatively correlated with ROA with coefficients of -0.645 and -0.663 respectively. The positive association supports the idea that increased is weakly associated with increased performance and strong association is strongly associated with performance.

Hypotheses Testing

HO_1: Risk diversification has no significant impact on Financial Performance (return on assets.)

Table: 2 Least Square Regression Model of Risk Diversification and ROA

Dependent Variable: Financial Performance (ROA)
Method: Panel Least Squares
Periods included: 10
Cross-sections included: 15
Total panel (balanced) observations: 150

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.21828	0.12073	1.80796	0.0727
INVTB	0.03645	0.01204	3.02611	0.0029
BSZ	0.00172	0.01033	0.16657	0.8679
LEV	-0.01932	0.00521	-3.70555	0.0003

R-squared	0.43319	Mean dependent var	0.14986
Adjusted R-squared	0.42538	S.D. dependent var	0.15677
S.E. of regression	0.14744	Akaike info criterion	-0.96435
Sum squared resid	3.17423	Schwarz criterion	-0.88407
Log likelihood	76.3268	Hannan-Quinn criter.	-0.93174
F-statistic	7.45824	Durbin-Watson stat	1.38255
Prob(F-statistic)	0.00010		

Source: Authors Computation, 2020

Interpretation of Regression Result

The above result is that the Adjusted R squared value is 0.425 and approximately indicates that about 43% of the systematic variations in the dependent variable in the pooled banks over the period of interest was jointly explained by the independent variables. The unexplained 57% is part of the dependent can be attributable to exclusive of very important independent that can explain the dependent variable but are outside the scope of this study. The probability of the slope coefficients of the independent and moderating variables: P(X_I= 0.0029<0.05; X2= 0.8679>0.05; x3=0.0003<0.05). The co-efficient value of; β_1= 0.036456 for INVTB implies that ROA is statistically significant and positively related to INVTB @ 5% level of significance.

Check the model linear regression it will be: ROA = 0.218280 + 0.036456INVTB + μ

The coefficient of INVTB implies that if investment in treasury bills increases by 1 %, then ROA would increase by 3.65%. The figure of Durbin-Watson Statistic is 1.382556 as evident that the model has not serial correlation. The F-statistic of the ROA is 7.45624 and the F- probability is 0.00010, indicating the rejection of null hypothesis and acceptance of alternative hypothesis. The study concludes that risk diversification has a significant positive impact on ROA of listed banks in Nigeria at 5% level of significance.

$H0_2$: Risk Hedging has no significant impact on financial performance of listed banks.

Table: 3 Least Square Regression of Risk Hedging and ROA

Dependent Variable: Financial Performance (ROA)

Method: Panel Least Squares
Periods included: 10
Cross-sections included: 15
Total panel (balanced) observations: 150

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.13166	0.09817	1.34116	0.1814
MREH	0.15996	0.01722	9.29461	0.0000
BSZ	0.00376	0.00841	0.44760	0.6550
LEV	-0.01766	0.00426	-4.14388	0.0001

R-squared	0.42080	Mean dependent var	0.14986
Adjusted R-squared	0.41860	S.D. dependent var	0.15677
S.E. of regression	0.12053	Akaike info criterion	-1.36753
Sum squared resid	2.12100	Schwarz criterion	-1.28725
Log likelihood	108.565	Hannan-Quinn criter.	-1.33491
F-statistic	35.3581	Durbin-Watson stat	1.47950
Prob(F-statistic)	0.00000		

Source: Authors' Computation, 2020

The Adjusted R squared value of 0.41860 shows that about 42% of the systematic variations in the dependent variable in the pooled banks over the period of interest was jointly explained by the independent variables. The unexplained 58% is part of the dependent can be attributable to exclusive of very important independent that can explain the dependent variable but are outside the scope of this study and this is captured by the error term. Model 2 result shows the value of MREH (β_1=0.159963) and BSZ (β_2=0.003768) with positive relation with ROA, while control variable LEV (β_3=0.15996) is negatively related with ROA. Probability value indicate that P(x_1=0.0000<0.05; x2=0.6551>0.05; x_3=0.0001<0.05). This implies that MREH has a significant positive relationship with ROA; ROA has no significant positive relationship with BSZ and a significant negative relationship with LEV. Durbin-Watson figure is 1.479503 and it shows no autocorrelation in the regression model 2. The overall figure shows Prob(F-statistics) = 0.000000, showing a significant positive relationship between MREH and ROA.

Fixing figures into model 2 regression equation is: $ROA = 0.131664 + 0.159963MREH + \mu$

Consequently, for there to be a unit/one naira increase in ROA there will be about 15.9% increase in MREH. The study therefore reject H0 hypothesis and accept the alternate and conclude that risk hedging proxy by market risk exposure hedged, has a significant positive impact on ROA banks in Nigeria at 5% significance level.

Ho_3: Risk transfer has no significant impact on financial performance (return on assets) of listed banks.

Table 4: Least Square Regression Model of Risk Transfer and ROA

Dependent Variable: Financial Performance (ROA)
Method: Panel Least Squares
Periods included: 10
Cross-sections included: 15
Total panel (balanced) observations: 150

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.35935	0.12308	2.41524	0.0170
RPPD	0.01726	0.04688	5.34136	0.0000
BSZ	-0.01147	0.01059	0.70065	0.8802
LEV	-0.01405	0.00539	-3.48610	0.0006

R-squared	0.76805	Mean dependent var	0.14986
Adjusted R-squared	0.76091	S.D. dependent var	0.15677
S.E. of regression	0.15192	Akaike info criterion	-0.90402
Sum squared resid	3.04657	Schwarz criterion	-0.82374
Log likelihood	79.4056	Hannan-Quinn criter.	-0.87140
F-statistic	9.28093	Durbin-Watson stat	1.43807
Prob(F-statistic)	0.00004		

Source: Authors' Computation, 2020

The result shows that the Adjusted R squared value is 0.76091 shows that about 76% of the systematic variations in the dependent variable in the pooled banks over the period of interest was jointly explained by the independent variables. The unexplained 24% is part of the dependent can be attributable to exclusive of very important independent that can explain the dependent variable but

are outside the scope of this study and this is captured by the error term.

The probability of the slope coefficient are; P(x(=0.0000<0.05; X_2=0.8802>0.05; x_3=0.0006<0.05). The co-efficient value of; β_1=0.017261 for RPPD implies that ROA is statistically significant and positively related to RPPD @ 5% level of significance. Durbin- Watson Statistic of 1.43807 suggests that the model does not contain serial correlation. The model F-statistic of the ROA is 9.28093 and the associated F-statistic prob. is 0.00004 and based on this fact: the null hypothesis was rejected and the alternative hypothesis was accepted. Hence the study upheld that risk transfer has a significant positive effect ROA of listed banks in Nigeria at 5% level of significance.

Findings and Discussion of Findings

The study findings are shown as follows:

Ho_1: Risk diversification has no significant impact on Financial Performance (ROA)

1.a) The finding from **Ho_1** indicates that the Adjusted R-squared value is 0.425 and approx. indicates that about 43% of the systematic variations in the financial performance (ROA) in the pooled banks over the period of interest was jointly explained by the independent and moderating variables; 1.b) The null hypothesis was rejected while the alternative hypothesis was accepted showing that risk diversification has a significant positive impact on ROA of listed banks in Nigeria at 5% level of significance.

Ho_2: Risk Hedging has no significant impact on banks performance

(2.a) The Adjusted R squared value from **Ho_2** is 0.41860 that shows that about 42% of the systematic variations in the dependent variable in the pooled banks over the period of interest was jointly explained by the independent variables. (2.b) The study rejects the **Ho_2** and accepts the alternate that risk hedging proxy by market risk exposure hedged, has a significant positive impact on ROA of banks in Nigeria at 5% significance level.

Ho_3: Risk sharing has no significant impact on banks performance in Nigeria

(3.a) **Ho_3** result is that the Adjusted R-squared value of 0.76091 shows that about 76% of the systematic variations in the dependent variable in the pooled banks over the period of interest was jointly explained by the independent variables; (3.b) While the **Ho_3** null was rejected and the **H_3** was accepted. Hence the study upheld that risk transfer has a significant positive effect on ROA of banks @ 5% level of significance.

Discussions of Findings

The findings that risk diversification has a significant positive impact on Financial performance (ROA) also agrees with the following research works who found risk diversification to have effect, significant positive effect on firm performance: (Harelimana, 2017; Kwon-Yong Jin, 2019; Mulwa & Kosgei, 2016 and Hailu & Tassew, 2018); while the study findings disagree with the works of (Ogada et al., 2016; Hailu & Tasses, 2018 and Hailu & Tassew, 2018), who found negative in some variables.

Risk hedging proxy by market risk exposure hedged, has a significant positive impact on ROA of banks in Nigeria agrees with these authors who also found risk hedging to be significant positive on performance: (Ameer et al., 2014; Pasoloran & Daromes, 2020; Nugraha, 2017; Chege, 2016; Nzioka & Maseki, 2017; Giraldo-Prieto et al., 2017; Nuosson & Arevalo, 2017 and Lenee & Oki, 2018); while (Lenee & Oki, 2018) further found negative on financial derivatives to hedging on performance.

The study finding that Risk transfer has a significant positive effect on ROA of banks also agree with the findings of (Abdullah, 2013 and Ehiogu, 2018) who found risk transfer to be significantly positive with firm performance.

Finally, the overall findings of the study is that risk diversification, risk hedging and risk transfer in risk management has positive significant impact on financial performance agrees with the findings of these authors who also found effects, and positive significant on the subject matter: (Otieno et al., 2016; Kambi and Ali, 2016; Kiptisya, 2017; Wanjohi et al., 2017; Bagh et al., 2017; Halim et al., 2017; Mohammed et al., 2018; Okere et al, 2018; Anton, 2018 and Shuey-Yeh & Hsiano-Yi, 2018); while the result disagrees with (Onago, 2017) who found negative and also disagrees with (Anton, 2018) who negative as the study was extended to financial crises of (2001-2011) and also disagrees with Alawattegama, 2019) who found mixed result.

Summary of Findings

The study findings are summarized as follows:

Risk diversification has a significant positive impact on ROA; Risk Hedging has a significant positive impact on ROA; Risk transfer has a significant positive impact on ROA; while the three study models shows the Adj. R-square to have 43%, 42%, 76% respectively for (**H_1 to H_3**) and Prob. Figures of (0.00001, 0.00000, 0.00004 as well showing that the models were significantly positive on financial performance of listed banks in Nigeria.

Conclusion

This study concludes that risk management techniques on financial performance of listed banks in Nigeria from 2010-2019 impact financial performance and this is evidence is found that risk diversification, hedging risk, and risk transfer in fraud risk management is significantly positive on ROA of listed banks.

Recommendations

The study recommends that banks' management in their risk management decisions should ensure proper risk diversification; risk hedging and risk transfer to increase their financial performance.

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