

Financial Risk and Financial Performance of listed Insurance Companies in Nigeria

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Abstract

Financial risk if not properly taking care of in a business might lead to its collapse especially, insurance companies whose core business deals with day to day handling of risk, in light of this, the study examined the effect of financial risk on financial performance of listed insurance companies in Nigeria from 2009 to 2018. Population of the study consist of 27 listed insurance companies and a sample size of (19) firms. The study used secondary data obtained from annual report of the firms and Correlational design was used. Financial performance which is the dependent variable measured by return on asset (ROA) while independent variable are credit, liquidity and solvency risks. The results from the fixed effect regression proved that credit risk has negative and significant effect on financial performance, Liquidity risk has negative and insignificant effect on ROA and solvency risk has positive and significant effect on ROA. The study concludes that credit risk has adverse influence on ROA of listed insurance companies in Nigeria. The report advises that Nigerian insurance providers should do better to adequately control their receivable number by supplying their debtors with payment plans that are appropriate for servicing their outstanding debt or loan.

Keywords: Financial Performance, Credit risk, Liquidity risk and Solvency risk

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1.0 Introduction

From the current literature, it has been recognized that corporate organizations 'success has been one of the main concerns of creditors, stakeholders and scholars inside and outside the academic climate. In view of this, performance is a notable action of achievement, it is also the measurement for what has been achieved by an industry usually one year over a period of time. Performance remains an important outcome of the efforts of individuals or groups which is essential to the growth of the organization and to gain and manage resources effectively (Hansen & Mowen, 2005).

Performance, basically categorized as financial and non-financial performance. Financial performance (FP) which is the focus of this paper is the result of performing the financial activity. It is the procedure of assessing the outcome of a firm's strategies and actions in monetary expressions. FP is a desired objective for all profit-oriented companies such as insurance firm (Yahaya & Lamidi, 2015). FP is a degree of how effectively a company can use capital from its primary market means, and produce returns. A company's financial performance relies on the ability to predict, track and handle risks and on the likelihood of insurance to compensate damages incurred by risks occurring. Company returns on equity (ROE) need to be higher than the funding expense to maximize shareholder interest. Financial risk is the business capable of fulfilling anticipated and unexpected liquid cash demands by generated liquid cash flows (Panigrahi, 2013) a. According to Arif and Showket (2015) financial risk is the probability that shareholders may lose their funds because of the company's use of debt where the company's cash balance is inadequate to satisfy the financial commitments.

Insurance companies are faced with various financial risks which are likely to have effects on their financial performance in one way or the other. Thus, the discussion on financial risk and its relation to financial performance by different theoretical and empirical researchers gives different contradictory explanation, making it hard to make definite conclusion. Theoretically, Markowitz (1952), in his portfolio theory supported by Mukino (2018), states that investors should diversify their investment portfolios as a measure of reducing financial risks.

Financial risk if not properly taking care of in a business might lead to its collapse especially, insurance undertakings whose main concern is day to day risk management. From the survey of Deloitte (2014) financial risk is found to be a practical issues in Nigeria. Despite the effort put in place by National Insurance Commission (NAICOM) to check and regulate the activities of insurance companies in Nigeria, still there are failures due to weak control of financial risk and regulatory guidelines set by the commission, for instance, in the year 2008 Acen

insurance plc, Amicable insurance plc and Baico insurance plc. In the year 2013 Crusader insurance plc merged with Custodian and allied insurance plc. In the year 2014 FBN life insurance acquired Oasis insurance plc, all the insurance companies collapsed due to unable to manage financial risk and also unable to meet up with regulatory guidelines and in 2019 Great Nigeria insurance plc voluntarily withdrew from the business due to their failure to manage the financial risk properly.

Also, the extensive body of related previous empirical studies on financial risk and financial performance have presented somewhat conflicting results others agreeing some disagreeing with important theories of financial risk across the globe (Arif & Showket, 2015 and Sisay, 2017). The contradictory results justify further research. Most of the studies done in Nigeria have focused on risk management in banking sector (Olalekan, Mustapha & Irom, 2018 and Mustapha, Salam & Mohammed, 2017) but little studies have been carried out in insurance companies regarding financial risk. Therefore, against this background that the researcher seek to examine financial risk and financial performance of listed insurance companies in Nigeria.

In view of the above, the following research hypotheses were developed for testing:

H₀₁ Credit risk has no significant effect on financial performance of listed insurance companies in Nigeria.

H₀₂ Liquidity risk has no significant effect on financial performance of listed insurance companies in Nigeria.

H₀₃ Solvency risk has no significant influence on financial performance of listed insurance companies in Nigeria.

This paper draws on the datum that the banking sector is the subject of most academic studies on financial risk and financial performance. By consequences, scholars have not paid sufficient attention to the insurance companies in Nigeria. The study would be significant in providing information to investors, government agencies, business professionals, accounting practitioners, regulators and the literature on financial risk and financial performance in insurance sector in Nigeria and in the world in general.

The study deals with the impact of financial risk on the financial performance of the insurance firms listed in Nigeria. The research spans a ten (10) year period (2009-2018). The paper is divided into five parts to achieve this analysis, namely: section one is the introduction, section two takes up the examination of the literature, section three introduces the approach, section four deals with the findings and comments and section five ends the report.

2.0 Literature Review

In this section, a review of extent literature on the subject matter is carried out covering conceptual issues, theoretical review and review of empirical studies.

Conceptual Issues

The conceptual issues focused on credit risk, risk of liquidity, solvency risk and financial performance that are the main focus of this study. International Risk Management Institute (2019), defines credit risk as the likelihood that either one of the parties to an agreement will not be able to justify its financial commitment under that contract. Credit risk also refers to the risks that the counter party cannot meet its obligations as and when due (Sisay, 2017). Furthermore, as Anthony and David (1997) have said, there is a possibility that a debtor will not conduct its own portion of the arrangement in compliance with its obligations. The insurance firm must also be exposed to default risk if changes in the system of economic policy entail negative changes in the creditworthiness of the assets invested. For example, in handling credit risk, insurance firms must specifically seek to minimize concentration risk (e.g., investment exposure in a single investment group, low degree of portfolio diversification) and aim to create as much diversification as possible in their investments.

Liquidity risk derives from the possibility that an entity would be unable to resolve risks arising from changes in its cash inflows and outflows (Githinji, 2013). Liquidity indicates a firm's readiness to settle both expected and unexpected demands of cash at any time (Mukino, 2018). Thus, firms ought to be liquid to maintain its operations and remain in existence for the longest time possible. Liquidity risk can also view as the company capability to meet likely and unforeseen demand for liquid cash through current liquid cash movement (Panigrahi, 2013) b. In Amal's (2012) and Sisay's (2017) submission, liquidity risk is calculated by existing assets over current liabilities, relating to the degree to which debt obligations due over the next 12 months or within one year will be paid out of available funds or capital which can be turned into liquid cash. Additionally, Jamal and Ali (2014) described liquidity risk as risk that stems from the lack of marketability of an investment that cannot be acquired or sold quickly enough to prevent or minimize a loss. The study also adopt the definition put forward by Mukino

(2018) which say that, liquidity indicate a firm's readiness to settle both expected and unexpected demands of cash at any given period of time which is believed to superior to others definition quoted in this work.

Solvency refers to capability of firms meeting their long-term obligations and sustains continued growth and expansion (Mukino, 2018). In another vein as ARDLB (2010), defined Solvency as having adequate equity in the form of funds in the company to offset all the business liabilities. This description means a company has positive equity based on the accounting principle that assets equal liabilities plus equity. Solvency risk is about an unwillingness of a company to meet its financial obligations. When it can satisfy its commitments, a corporation is considered to be stable, and insolvent if it cannot. Elmehdi and Mohammed (2014), argue that solvency risk exists when a financial institution is unable to satisfy its short, medium and long-term financial obligations, and is also characterized as a financial institution's failure to meet its obligations in the event of avoiding operations or liquidation. We adopt the measurement adopted by Mukino (2018), which measured solvency risk as net income to total liabilities. We also adopt the definition cited by Mukino (2018) which read as Solvency refers to capability of firms meeting their long-term obligations and sustains continued growth and expansion.

Financial performance is a general degree of how well an enterprise earns from its resources. It also shows the overall financial strength of a company over a period of time, and at the same time helps to compare different insurance policies across the insurance industry. Likewise, Akong'a (2014), financial success is the ability of the organization to produce additional income from everyday operations for a given period of time, and financial output is calculated by net sales and cash from operating activities. Various researchers use the Return on Asset and Return on Equity to calculate an organization's financial performance. The Return on Assets (ROA) that is used as a financial success metric is a percentage that compares client net profit against the overall net assets. The ratio is considered a measure of how well and effectively a business uses its capital to earn until it needs to meet the contractual obligation. The formula is as follows: $ROA = \text{net profit} / \text{total assets}$. Return on assets provides an indicator of the banking industry's capital intensity, which will rely on industry; banks that need high initial investment will typically see lower asset returns (Apps, 1996).

Financial performance in another vain is a measure of the results of a firm's policies and operations in monetary terms. These results are reflected in the firms return on investment, return on assets, and return on equity and value added (Gatuhu, 2013). Financial performance according to Nduati (2013) cited by Mpeanin, (2019) "is an indicator of how profitable a company is relative to its total assets". As per Rivard and Thomas (1997), the Return on Assets (ROA) is the best variable for measuring a firm's profitability. They added that the ROA is not distorted by high equity multipliers and it gives a better picture of the firm's ability to generate returns on its assets.

Review of Empirical Studies

Arif and Showket (2015) conducted research in Indian insurance industry on the impact of financial risk and financial performance. Therefore, out of this eight life insurance firms, all belonging to the private sector, the study employed 24 life insurance companies currently operating in the Indian insurance industry as target population were chosen. They used secondary data points from the listed insurance providers 'annual reports. Multiple regression model findings show that liquidity risk has a positive and significant impact while solvency risk has a negative and significant effect on life insurance companies 'financial performance in India. The study creates a conceptual knowledge gap because it focused on liquidity risk in Indian while the current study is looking at liquidity risk in Nigeria.

Kioko, Olweny & Ochieng (2019) conducted a research on effect of financial risk on the financial performance of commercial banks in kenya listed on the Nairobi stock exchange. For the purpose of this a sample of eleven (11) listed commercial banks covering a period of five (5) years from 2014 to 2018. Descriptive research design was adopted and the instrument of data collection used was purely secondary in nature. Multiple regression model was used and SPSS tools of data analysis was adopted. The analyzed data was presented in form of tabulations, mean and standard deviation. The findings of the research obtained that credit risk had a significant negative effect on financial performance, while liquidity risk had a negative insignificant effect on financial performance. The study recommended that commercial banks should reduce the level of nonperforming loans so as to manage credit risk. The study focused on all listed banks but the current study is on listed insurance companies. The study also used five years which is not enough to give a generalize findings for study of this nature and if he/she could have used ten years the result might have been better than that. The study used SPSS which the current look at it as not too advance method of data analysis. Another study in this regard was also conducted by Kioko, Olweny and Ochieng (2019) and found that liquidity had a negative not significant effect on financial performance of commercial banks listed on the Nairobi stock exchange.

Kyule (2019) conducted a study on impact of liquidity risk and solvency risk on financial performance (measured by return on assets (ROA)) of firms listed in Nairobi Securities and Exchange. A descriptive research design was used. The study covered a period of five years (5) from 2009 to 2013. The study used secondary data and the data was analyzed using a regression analysis model and SPSS 21 and Microsoft excel 2010 was also used

as a tools of statistical analysis. The findings showed that liquidity positively impacted on the ROA of the firms listed at NSE. However, the effect of liquidity on ROA is not statistically significant at 5% level of significance. Solvency negatively affects ROA of firms listed at NSE. Financial leverage was found to negatively influence ROA though the effect is not statistically significant. The study focused on all listed firms but the current study is on listed insurance companies only. The five years chosen for this study is not enough to give a generalize findings of the study and if he could have used ten years the result might have been better than that.

Mukino (2018), conducted a research on effect of financial risk on the financial performance of insurance companies listed at Nairobi Securities Exchange. For this purpose a sample of six (6) insurance companies covering the period of six (6) consecutive years, 2012-2017 was taken. The study used quantifiable secondary data which was analyzed using descriptive and inferential statistics to analyze on SPSS version 22. The study found that liquidity risk and solvency risk negatively affect ROA which had statistically insignificant effect. The six years chosen for this study is not enough to give a generalize findings of the study and if he could have used ten years the result might have been better for purpose of decision.

Sisay (2017) analyzed the effect of financial risk on insurance firms' financial results in Ethiopia. To this end, a subset of eight (8) listed insurance firms was chosen for seventeen (16) years, 2000 to 2015. The thesis used panel survey methods and by incorporating documentary documentation with unstructured in-depth interviews the researchers adopted a hybrid process testing approach. The study used one dependent variable, asset return (ROA), six independent variables which included credit risk. The outcome of regression indicates that credit risk, liquidity risk, solvency risk have a negative and important impact on the profitability of insurance firms in Ethiopia at 1 per cent and 5 per cent sense point. The outcome shows that financial risk greatly affects the efficiency of the Ethiopian insurance company. The study focused on the insurance companies listed in Ethiopia but the latest research is on insurance companies listed in Nigeria.

Muriithi (2016) had a research on financial risk and financial performance of commercials banks in Kenya. For this purpose a sample of 43 commercial banks licensed by CBK as at December, 2014 for the period of ten (10) years from 2005 to 2014. The study used OLS model. The findings of the study indicated that credit and liquidity risks have significant negative effect on return on equity. The deduction of the study that there exist reverse effect between financial risk and financial performance of banks in Kenyan. The study focused on all listed banks but the current study is on listed insurance companies.

Wanjiku (2016) conducted a research on Effect of financial risks on institutional efficiency among companies listed in the Nairobi securities exchange. The researcher adopts descriptive research design. The 63 firms listed in NSE as a population. Secondary data was collected from firms' annual reports for period covering 2011-2015. Multivariate regression model was used in data analysis to show the effect between independent and dependent variables. The study revealed that credit risk and liquidity risk had a significant and positive effect on listed companies in NSE. The study focused on all listed firms in Kenya but the current study is on listed insurance companies in Nigeria only. The five years chosen for this study is not enough to give a generalize findings of the study and if he could have used ten years the result might have been better than that.

Kamau and Njeru (2016) conducted a research on effect of liquidity risk on financial performance of insurance companies listed on the floor of Nairobi securities exchange. For this purpose a sample of six (6) insurance companies was used. The study adopts descriptive research design and census method was employed to determine the sample size. The study reveals that liquidity risks has negative effect on the financial performance of these companies. The study creates a conceptual know ledged gap because it focused on liquidity risk in Kenya while the current study is looking at liquidity risk in Nigeria. The six years chosen for this study is not enough to give a generalize findings of the study and if they could have used ten years the result might have been better than that.

Adrian (2014) analyzed the connection between financial risks and financial performance of insurance companies in Kenya. To this end, a survey of 49 insurance companies in Kenya and the analysis covered a 5-year period from 2009 to 2013 and was chosen because it is recent and it revealed the current relationship between liquidity risk and financial results of insurance companies in Kenya. He acquired the entire population as a sample, because of this fact. The research gathered secondary data from the annual liquidity risk survey of insurance firms that is independent variables and the company's financial results that was calculated as contingent variables using Return on Asset (ROA). SPSS version 20 was used for analysis, and multiple regression models were used to implement inferential statistics. He had only made checks of significance, but he ignored confirming certain conclusions of the concept. The study concluded that liquidity risk and solvency risk have a detrimental impact on the financial performance of insurance firms in Kenya. The study creates a conceptual know ledged gap because it focused on liquidity risk in Kenya while the current study is looking at liquidity risk in Nigeria. The five years

chosen for this study is not enough to give a generalize findings of the study and if he could have used ten years the result might have been better in taking business decision.

In Ethiopia, Eneyew (2013) carried out a study on financial risks and competitiveness of banks. A survey of eight (8) commercial banks for twelve (12) consecutive years (2000-2011) for this reason. The study used secondary data sources obtained from NBE on banks 'audited financial statements. He used a panel data to perform a comparative analysis, and also evaluated the simple assumptions model. The study results indicate that there is a negative and statistically relevant association between credit risk and liquidity risk and the competitiveness of Ethiopian commercial banks by banks. The study indicates that concentrating on credit risk management and maintaining an optimum liquidity level that enables banks to meet their contractual obligations may optimize Ethiopian commercial banks 'return on assets. The study focused on all listed banks but the current study is on listed insurance companies.

Dabo, Andow & James (2018) conducted a research on solvency risk and financial performance: Evidences from listed firms in Nigeria covering the period seven (7) years from 2010 to 2016. Census sampling design was used to determine the sample size and simple regression analysis was employed to analyze the data. The study found that solvency risk is significant and positively influence on the listed insurance firms performance (return on asset) in Nigeria. The study focused on all listed insurance firms using only solvency risk variable but the current study is on all the listed insurance companies using six variables. The seven years chosen for this study is not enough to give a generalize findings of the study and if they could have used ten years the result might have been better than that.

Olalekan (2018) examined Liquidity Risk and listed insurance companies financial Performance in Nigeria: using A Panel Data Analysis for the period of 2011-2015. For this purpose, the population of the study is 25 listed insurance firms and the sample of twelve (12) were used for the study. The study used a panel multiple regression techniques and secondary source was employed as a method of data collection after controlling for fixed/random effects. The findings of random effect reveal that liquidity risk is found to be significant, empirically to enhance the company's financial performance. The five years chosen for this study is not enough to give a generalize findings of the study and if he could have used ten years the result might have been better than that.

Mustapha, Salam, and Mohammed (2017), conducted a research on the Effects of Corporate Risk on Financial Performance: Evidence from Listed Deposit Money Banks in Nigeria. The population of the comprised of fourteen (14) listed Deposit Money Banks (DMB) listed on the floor of Nigerian Stock Exchange. The study adopt census sampling techniques and secondary data was collected from firm's annual reports for the period of six (6) years (2011-2016). Data was analyzed using panel regression techniques. The findings reveal that liquidity risk has an insignificant negative effect on the financial performance of the study banks, while the credit risk has a significant negative effect on financial performance of listed Deposit Money Banks in Nigeria. It is recommended among others that the banks should regulate their liquidity risk position and ensure they minimize the non-performing loan as it has been found empirically to reduce the quality of the firm's financial performance. They should also reduce their operational cost for better performance. The study focused on all listed DMBs but the current study is on listed insurance companies and also the study used six years which is not enough to give generalize findings and if he/she could have used ten years the result might have been better than that.

Marshal and Onyekachi (2014) researched for 15 years (1997-2011) about the impact of credit risk on the financial performance of listed deposit money banks in Nigeria. The study considered five banking firms chosen during the research time from among the twenty registered deposit money banks in Nigeria. They used the methods of judgmental screening. In the survey, details is obtained from the banks 'financial reports and accounts. The data consisted of time-series and cross-sectional data that were combined and calculated using panel data regression methods into a panel data package. The result shows that there is a positive relationship between credit risk measured by Ratio of non- performing loans to loan and advances (LogNPL) and banks financial performance measured by return on asset (LogROA). The study focused on all listed banks but the current study is on listed insurance companies. The study also used judgmental sampling techniques which the current study look at it as not scientific method of sampling techniques.

Portfolio Theory Review

According to Markowitz (1952), financiers focused on evaluating the risks and rewards of separate securities in making their portfolios. Meanwhile in 1980s, firms have successfully applied portfolio theory to categories of market and business risk which financial risks is one of them. Numerous firms are now using worth at risk models to manage their exposures to interest and market risks. While the methodology of each company differs, this approach involves routinely evaluating the nature of credit exposures, adding a rating of credit risk, and aggregating the results of this study to determine the potential losses of a portfolio. A comprehensive process of

credit assessment and internal credit risk evaluation is the foundation of the asset-by-asset system. This method helps managers to detect rapid changes in individual credits, or patterns in portfolios.

Based on the defined adjustments, credit recognition, credit analysis, and credit risk rating system management may make appropriate improvements to portfolio policies, or improve credit control in a timely manner. Although the asset-by-asset approach is an important factor of assessing credit risk, it does not include a complete picture of portfolio credit risk, where the term risk relates to the probability that actual losses will outweigh anticipated losses. Consequently, companies are increasingly looking to complement the asset-by-asset approach with a quantifiable portfolio analysis using a credit model to obtain deeper visibility into credit risk (Mason and Roger, 1998). Gradually, businesses seek to resolve the asset-by-asset method's incapacity to accurately calculate unintended risks by monitoring a portfolio strategy. One drawback of the asset-by-asset approach is that they have difficulties in classifying and relying on computation. Concentration risk refers to incremental portfolio risk arising from increased access to credit expansion or a community of associated creditors (Richardson, 2002). By investing, capital-market investments are able to outperform investments on an effective frontier and formalize the financial asset pricing model (CAPM) (Sharpe, 1964). However, Portfolio theory explains almost all the variables of the study and is adopted for this research.

3.0 Methodology

The population of the sample as of 31 December 2018 is twenty seven (27) listed insurance firms in Nigeria. For the selection of 19 companies which form the study samples, purposive sampling technique based on data availability was adopted. The data were taken from the chosen firms' audited financial records during the sample period. Multiple regression is implemented to look at the research sample. The results were analyzed using the statistical kit of STATA 13, and the result was used to check the theory proposed for the analysis after the requisite tests were carried out. In order to enhance the validity of the findings obtained, various robustness tests such as multicollinearity check between the independent variables were carried out.

Financial performance which was measured by ROA, is a function of three explanatory variables, namely: credit risk (CR), liquidity risk (LR) and solvency risk (SR). Control variables, leverage (LEV).

That is;

$$ROA = f(RIR, TPR, UR, LEV)$$

The regression model of the Ordinary Least Square (OLS) was used to approximate the influence of explanatory variables on the expounded variable. The pattern is set out below:

$$ROA_{it} = \beta_0 + \beta_1 RIR_{it} + \beta_2 TPR_{it} + \beta_3 UR_{it} + \beta_4 LEV_{it} + e_{it} \dots \dots \dots (1)$$

Where:

$\beta_0, \beta_1, \beta_2, \beta_3, \dots, \beta_4$ are parameters to be estimated with a priori expectation.

Return on Assets, measured as Net income to Total assets (Elamer & Benyazid, 2018), Credit risk, measured as Premium debtors+ due from reinsurance + other receivable to Net Assets (Sisay, 2017 and Arif & Showket, 2015), Liquidity risk, measured as Current assets to Current liabilities (Sisay, 2017 and Arif & Showket, 2015), Solvency risk, measured as Net income to Total liabilities (Mukino, 2018) and Leverage, measured as ratio of total liabilities to total assets (Kazeem, 2015 and Sumaira & Amjad, 2013).

β_0 = Constant

e = Error term

4.0 Results and Discussion

Table 1 displays the mean, standard deviation, minimum and limit of the sample data collection for each element.

Table 1
 Descriptive Statistic

Variable	No of obs	Mean	Std deviation	Min	Max
ROA	190	.027	0.89	-.330	.45
CR	190	.167	.202	-.38	.1.86
LR	190	3.72	5.011	.13	33.94
SR	190	.142	.457	-.896	2.82
LEV	190	.430	.208	.02	1.08

Source: Descriptive Statistics Result using STATA 13: Researcher (2020).

Table 1 shows description on the variables based on the measurement used. The return on assets reveals an average value of 3% and a standard deviation of 9% indicating that the sampled firms are widely spread out from the mean.

The table further reveals that ROA has a minimum loss return on asset of -33% and the highest recorded return on asset as 46%. Also, credit risk has a mean value of 17% and a standard deviation of 20%. This also reveals a wide spread from the mean. Table 3 shows that the minimum and the maximum value of credit risk are -.38 and 1.86 respectively. Similarly, minimum and maximum value of the liquidity risk are .13 and .33 .94 respectively, with an average value of 3.72 and a standard deviation of 5.01. The average value of liquidity risk of the sample firms showed that the insurance firms' current asset is almost four (4) times greater than current liabilities. This suggest that they are highly liquid I then of working capital. Although this exists, the standard deviation reveals that it is not a common trend as the individual liquidity risk is widely spread out from the mean.

In addition, the table shows that solvency risk has a mean value of .14 and a standard deviation of .45. This implies that the individual solvency risk is widely spread out from the mean, thus is not closely cluster around the mean. The table also reveals the minimum value and maximum value to be -.90 and 2.82 respectively. Furthermore, the table shows that the control variable has a mean value of .43 and a standard deviation of .21. This reveals that the individual leverage of the firm is not widely spread out from the mean, thus is closely cluster around the mean. The mean values of .43 further suggests that the level of in the firms are not so high. The table also reveals the minimum value and maximum value to be .02 and 1.08 respectively.

Diagnostic Test

Robustness tests are carried out to test the validity of the statistical inference of a linear regression model. The robustness tests conducted for this study includes normality of residual, and multicollinearity test, heteroskedasticity and auto serial correlation test.

Table 2
Diagnostic Check

Variables	VIF	Tolerance value
CR	1.04	0.96
LR	1.02	0.98
SR	1.54	0.65
LEV	1.59	0.63
Other Tests	Chi square	P-value
Normality of residual	70.70	0.000
Heteroscedasticity	63.74	0.000
Auto serial correlation	7.04	0.020

Source: STATA 13: Researcher (2020)

One assumption of OLS regression model is no multicollinearity. The study tested for existence of Multicollinearity among the independent variables. The result from table 2 above provide evidence that there is no existence of excessive correlation among the independent variables, as the highest variance inflation factor (VIF) is 1.59. Similarly, an assumption of classical ordinary least square regression is normality of the residual. The Jacque Bera test conducted for ROA regression shows a p-value of 0.000 which is less than 5% indicating that the residual is not normally distributed. Furthermore the study check if the residual are homoskedastic. For this study, heteroskedasticity test was carried out using Breusch- Pagan/Cook-Weisberg test. The null hypothesis for the test is "constant variance" (presence of homoscedasticity). Thus, if the p-value is less than or equal to 5%, then there is proof to reject the null hypothesis. The result from Breusch- pagan / Cook-Weisbaerg test on ROA model reveals a chi2 value of 63.74 and the p-value of chi2 is 0.000 which is less than 5% level of significance indicating failure to satisfy assumption.

Auto correlation test was conducted using Wooldridge test for autocorrelation in panel data. The null hypothesis is that there is no first order autocorrelation at 5% level of significance. Table 2 revealed that residual from ROA model is 0.020 which is greater than 5% level of significance leading to failure to reject assumption.

Table 3
Panel Analysis Test

Tests	Chi square	P-value
Hausman specification test	54.09	0.000

Source: STATA 13: Researcher (2020)

As a result of data being panel, the study carried out hausman specification test to ascertain either choosing fixed model or random effect model. The result shows that at 5% level of significance, the χ^2 is 54.09 and the $\text{prob} > \chi^2$ is 0.000 which is significant. This significant p-value shows that Hausman test is in line with fixed effect model. A cluster and robust standard error version of fixed effect was selected to deal with problem of heteroskedasticity test and non-normality of data.

The Regression Result

This table presents the regression result of the dependent variable (ROA) and the independent variables of the study.

Table 4
Robust Fixed Regression Analysis

Variables	Coefficient	Std error	T-value	P-value
CR	-.026	.007	-3.94	0.001*
LR	-.000	.000	-0.19	0.854
SR	.199	.018	10.62	0.000*
Constant	.052	.014	3.80	0.001*
R2 within	0.642			
F-statistic	44.48			0.000*

Level of significance at 5%, .Source: Robust. F E regression result using STATA 13

Interpretation

The table 4 above presents fixed effect regression result chosen for the study based on the Hausman test for ROA. The R^2 within reveals a value of .642 indicating that the risk proxies (credit risk, liquidity risk, and solvency risk) are able to explain the variations in return on asset of the listed insurance firms to a percentage of 64.2% while the remaining percentage is explained by other factors not captured in the model. The wald- chi square of the robust fixed effect model is 44.48 with a p-value of 0.000 which reveals that the model is fitted at less than 5% significant level and the proxies of risk have joint effect on financial performance of listed insurance firms in Nigeria.

Discussion of findings

From the result of the regression analysis above in table 4, shows that credit risk has a p-value of 0.001 which is significance at 5% level of significance showing that credit has significant effect on return on asset (ROA) of the sampled firms. Thus, the study reject the null hypothesis (H_{01}) of the study which state that credit risk has no significant effect on financial performance of listed insurance companies in Nigeria. It reveals that credit risk negatively and significantly affects the return on assets of the listed insurance company in Nigeria. This further implies that an increase in the credit risk of the firms will reduce their return on asset by 2.6%. The findings from financial performance measures suggest that credit risk causes decline in financial performance of the Insurance companies in Nigeria. When debtors fails to meet up with their obligation, insurances loose funds needed to back up operation and settle claim, this affect their efficiency and will result to decline in both return on assets and return on equity. These findings are in line with apriori expectation of the study of a negative relationship and also support portfolio theory. The findings corroborates with prior studied by Mustapha et al. (2017), Kioko et al. (2019), Sisay (2017) Muriithi (2016) and so forth who found an inverse effect of credit risk of firms on their financial performance

The result on ROA in table 4 above shows that liquidity risk has a p-value of 0.854 which is not significant at any level of significance. Therefore, the study fails to reject the null hypothesis (H_{02}) of the study which state that liquidity risk has no significant effect on financial performance of listed insurance companies in Nigeria. This finding implies that any increase or decrease in the liquidity risk of the firms does not form a strong influence on return on asset of listed insurance firms in Nigeria. The negative finding is consistent with the apriori expectation of the study and Portfolio theory although not significant. This findings support the apriori expectation of the study and also support portfolio theory that reveal a negative relationship between liquidity risk and financial

performance. The findings is also in line with prior studies by Ezeabasili and Igbojika (2019), Olalekan et al. (2018) and so forth who found that liquidity risk has negative and insignificant influence on financial performance. It is contrary to the prior studies by Sisay (2017) and Adrian (2014) who found that liquidity risk will reduce the return on asset of firms significantly and Arif and Showket (2015) who found that liquidity risk improve the return on asset of firms.

This study found that solvency risk has positive and significant effect on return on asset (ROA) of the listed insurance firms in Nigeria. This is evidence from the coefficient of .199 and p-value of 0.000 from table 4. This implies that an increase in solvency risk will lead to an increase in ROA by 19.9% vice versa. This finding reveals that higher solvency risk improves return on asset. The positive findings on solvency in on ROA suggest that anything that will likely cause increase in solvency risk in insurance companies in Nigeria would lead to improve financial performance. The finding is not in line with the apriori expectation and portfolio theory of a negative effect. It corroborates with the findings of Dabo, Andow and James (2018) and Adrian (2014) who found that solvency risk improves financial performance and contrary to Kyule (2019), Sisay (2017) and so forth that revealed evidence of inverse effect on financial performance.

5.0 Conclusions and Recommendations

This study examined the effect of risk on financial performance of listed insurance companies in Nigeria for the period 2009 to 2018. The study found that credit risk has negative and significant effect on return on asset of the listed insurance firms in Nigeria; liquidity risk has negative and insignificant effect on return on asset of the listed insurance companies in Nigeria while solvency risk has positive and significant effect on return on asset of the listed insurance firms in Nigeria. The study concludes that credit risk inversely influence the financial performance of the insurance firms in Nigeria while liquidity risk is not a strong driver of financial performance of the insurance firms in Nigeria. The study further concludes that, the solvency risk improves the financial performance of the listed insurance companies in Nigeria. The report advises that Nigerian insurance providers should do better to adequately control their receivable number by supplying their debtors with payment plans that are appropriate for servicing their outstanding debt or loan. The study also recommends that Nigerian insurance companies should do their best to reduce their solvency risk by purchasing reinsurance contracts from reinsurers and solvency risk guidelines should also be established.

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