Financial Deepening and Return on Assets of Insurance Companies

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Abstract

The primary goal of business organizations is to maximize investment return through improved financial performance. In spite of the efforts pulled together by the regulatory authorities to revitalize the financial institutions, Nigerian insurance sector continues to witness unsteady growth in their financial position coupled with distress and failure occasioned by low profit. Most of the insurance companies experienced poor financial performance due to weak financial deepening evidenced from poor insurance penetration growth rate, low insurance deepening ratio and poor premium volume. The study examined effect of financial deepening on financial performance of selected quoted insurance companies in Nigeria between 2010 and 2019. The study employed an *ex-post facto* research design. Fourteen (14) insurance companies were selected. The panel regression models estimated using fixed effect model and random effect model, while the result of the Hausman test indicated the appropriate model between fixed effect model and random effect model. The findings of the study indicated that Ratio of Insured Claims to Earned Premium was negative and insignificant {β = - 0.075; P-value > 0.05} to reserves to Shareholders Surplus Ratio. Insurance Companies Firm Size was positive and statistically significant {β = 0.188; P-value < 0.05} to Reserves to Shareholders Surplus Ratio. Premium Growth Ratewas positive and statistically significant {β = 0.013; P-value < 0.05} to influence Reserves to Shareholders Surplus Ratio. The Ratio of Operating Expenses to Net Earned Premium exhibited positive and statistically insignificant value {β = 0.057; P-value > 0.05} of Reserves to Shareholders Surplus Ratio. The second model depicted that Ratio of Insured Claims to Earned Premiums posited a negative and insignificant effect on {β = - 0.004; P-value > 0.05} return on assets. Insurance Companies Firm Size had a positive but statistically insignificant {β = 0.0003; P-value > 0.05} effect on return on assets. Premium Growth Ratewas positive and statistically insignificant at 5% level {β = 0.003; P-value > 0.05} to return on assets. Ratio of Operating Expenses to Net Earned Premium was found to be negative {β = - 0.038; P-value < 0.05} and statistically significant to return on assets. From the findings of this study, it was concluded that financial deepening had mixed effects on the financial performance of insurance companies quoted in Nigeria. Therefore, the study recommended that there is overriding need for insurance companies to efficiently manage their risk assets portfolio especially their trading books in order to significantly improve their shareholders' surplus ratio (RSR) of insurance companies quoted in Nigeria. Insurance companies in Nigeria should devise proper strategy to improve the utilization of their assets and reduce operating costs in order to improve the returns on assets of their companies.

Keywords: *Financial deepening, Financial performance, Insurance Company, Reserves to shareholders surplus ratio, Return on assets.*

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Background to the Study

Achieving targeted financial performance of profit-oriented organizations like insurance companies depends on insurance companies' managerial ability to institutionalize effective financial deepening strategies in its service to economic and investment activities. Globally, achieving financial performance such as return on equity, return on asset, profit after tax, market value and net income margin are considered extremely important for the financial survival of insurance companies Batool and Sahi (2019) noted that majority of insurance companies globally are facing challenges of poor financial deepening especially in emerging and developing economies, thus dexterously declined financial performance. These declines in financial performance indices attract the attention of researchers, financial experts and management of insurance companies across the globe.

In developed economies, insurance companies are faced with the issue of unstable financial performance indices. Berteji and Hammami (2016) argued that in terms of revenue, the insurance industry of USA is one of the largest insurance industries in the whole world. In 2011 the insurance industry revenue (premium) accounted for over $1.2 trillion. Batool and Sahi (2019) further pointed that based on capitalization criteria, MetLife insurance company, Allstate insurance company, AIG insurance company and prudential financial insurance company are the major players of USA insurance industry yet they have recorded decline in financial performance due to global financial crisis and weak financial penetration into economic activities. Similarly, United Kingdom (UK), insurance industry plays an important role in leading the global insurance market of the whole world. Tax payment in the UK insurance industry contributes up to £10billion with a total asset value of £1,478 billion. However, the UK insurance sector suffers decline in financial performance indices during and after the worst financial crisis, thus reducing the firm's financial size, deepening and penetration into the UK economy (Philip, 2011). Considering the developing economies especially African countries, Mazviona, Dube and Sakahuhwa (2017) pointed that insurance industry as a whole suffers continuously low insurance penetration indices; as most insurance companies recorded low patronage and deterioration in financial performance indices, thus creating weak financial deepening in the insurance sector.

Deyganto and Alemu (2019) emphasized that insurance industry in Africa economies recorded poor financial performance and partially collapsed due to poor customer patronage, low profits and low market capitalization which makes it difficult for the firms to meet their set objectives in this ever changing and competitive globalized environment. In Ethiopia and Zimbabwe, Deyganto and Alemu (2019) further asserted that insurance companies experience instability in financial performance indices and the level of financial services obligation to the insured are not in compliance with global standard compared to insurance companies in developed economies.

Furthermore, in Zimbabwe, Deyganto and Alemu (2019) Stated that Zimbabwean economy is recovering after registering extremely high inflation and external debt in 2008, which was responsible for a significant and generalized economic slowdown. As a consequence of this crisis, losses were recorded and the insurance sector was no exception, these economic conditions affected the financial intermediary functions and deepening role of insurance

companies, performance indices, and innovation, efficiency and growth rates. Following the introduction of the multi-currency regime in Zimbabwe, the annual reports of insurance companies have subsequently provided evidence that some companies were struggling while others thrived (Fasoranti and Alimi, 2017). The collapse of an insurance sector is disastrous to any economy, particularly in developing countries such as Zimbabwe, Ethiopia, Ghana, Nigeria, Kenya among others. In Kenya, Muhindi and Ngaba (2018) emphasized that insurance companies' performance trends have been unstable; as insurance industry performance drop from 27.6% in 2016 to 22.3% in 2017. Kenya Insurance Industry Regulator Report (2017) asserted that return on assets of the banking industry in Kenya have declined from 4.7% in 2016 to 3.42% in 2017, thus caused deficiency in insurance service delivery and overall financial performance indices.

Insurance industry performance in Nigeria as noted by NAICOM (2018) and Ezema and Ezekwe (2016) over the last decade remained unimpressive. The asserted that profit before tax in the insurance industry which was 80.8% in 2014 fell dramatically and recorded a loss of 13.95% in 2017 and the opportunities for insurance companies to make profit are gradually reducing. The declining profit have been attributed to poor internal structure, global economic crises, low penetration rate and the fact that some of the criteria usually employed to measure the performance of the insurance companies have not been stringently monitored (Ezema and Ezekwe, 2016).

Financial deepening as a subset of financial penetration determines the extent of financial service extension from insurer to insured and overall financial performance of insurance companies (Ndalu, 2016). In order to increase financial deepening in the Nigerian insurance industry; the Nigerian insurance regulators as at 2003 went on as the minimum capital for insurance companies was 150 million Naira, 200 million Naira, 350 million Naira and 350 million Naira for life insurance, general insurance, composite insurance and reinsurance, respectively. On the 15th of September, 2005, this was increased to strengthen the financial penetration of Nigerian insurance industry and the companies were given 18 months to implement this. The new minimum capital became 2 billion Naira for life insurance, 3 billion Nairafor general insurance and 10 billion Naira for reinsurance (NAICOM, 2017). However, Alli (2018) still noted that there exists poor financial deepening to economic activities in the insurance sector in Nigeria. In spite of the efforts put together by the regulatory authorities to revitalize the financial institutions, Nigerian insurance sector continues to witness unsteady growth in their financial position coupled with distress and failure occasioned by low profit. Most of the insurance companies experienced poor financial performance due to weak financial deepening evidenced from poor insurance penetration growth rate, low insurance deepening ratio and poor premium volume.

Research in this area in Nigeria such as Ogbebor, Ajibade and Awonuga(2020),Ogbebor and Siyanbola (2018), Nguena and Abimbola (2013), Shu-Chen and Hsien (2016) has focused attention majorly on the impacts of financial deepening on financial performance of deposit money banks but the impact of financial deepening on the financial performance of insurance firms has not been addressed. Why is this so? In order to fill this important void in the literature, this research work aims at assessing the effect of financial deepening on financial performance of insurance companies quoted in Nigeria.

Objective of the Study
    i. Determine the effect of financial deepening on return on asset (ROA) of insurance companies quoted in Nigeria;
    ii. examine the effect of financial deepening on reserves to shareholders surplus ratio (RSR) of insurance companies quoted in Nigeria;

Hypotheses
    Ho$_1$: Financial deepening does not have any significant effect on return on asset (ROA) of insurance companies quoted in Nigeria?
    Ho$_2$: There is no significant effect of financial deepening on reserves to shareholders surplus ratio (RSR) of insurance companies quoted in Nigeria

Research Questions
The following research questions are proposed in this study:
    1. What is the effect of financial deepening on return on asset (ROA) of insurance companies quoted in Nigeria?
    2. To what extent does financial deepening influence reserves to shareholders' surplus ratio (RSR) of insurance companies quoted in Nigeria?

Literature Review
Financial performance is a measure of a firm's overall financial health over a given period of time. It can be measured from various perspectives including solvency, profitability, and liquidity. Solvency measures the amount of borrowed capital used by the business relative to the amount of owners' equity capital invested in the business. For insurers, profitability is the excess of revenues from underwriting activities over the costs incurred in generating them. Liquidity measures the ability of the business to meet its financial obligations as and when they fall due without disrupting normal operations (Amit and Chowdry, 2006). Financial performance in the insurance sector is measured by premium and investment income, underwriting results and overall operating performance. The business model for insurance companies can be reduced to a simple equation profit is equal to earned premium plus investment income and commission receivable minus incurred loss and underwriting expenses.

Specifically, Ezema and Ezekwe (2016) asserted that the performance of insurance companies in financial terms is normally expressed in net premium earned from under writing activities, annual turnover, return on investment, and return on equity. These measures could be classified as profit performance measures and investment performance measures. However, it is revealed by Batool and Sahi (2019) that the key indicator of a firm's performance is ROA which is defined as profit after tax divided by total assets. Furthermore, there are a number of indicators related to the structure of the insurance industry that can provide some perspective on whether there may be impediments to competition in the sector, such as excessive market concentration or limited foreign participation in the market (Batool and Sahi, 2019).

Return on Asset: This is calculated as the ratio of net income to the sum of cash and invested assets. A basic measure of financial performance (profitability) that corrects for the size of the insurance firm is the return on assets (ROA). It is calculated by dividing net income by the value of its assets. That is, profit before tax / total assets. This financial performance ratio measures net income relative to all invested assets (Brealey, Myers and Marcus, 2004)

Financial Deepening
Financial deepening refers to the ability of the financial institutions to effectively mobilize savings for investment purposes. The growth of the saving levels in the financial institutions provides the real structure for the creation of the diversification of the financial claim. Financial deepening also entails the active operations of the financial institutions in the financial markets which leads to the accessibility of the financial instruments and services thus increase in the savings level and growth of the investment levels which will conform to a system that is free from financial repression. The development of the financial sector does not only have a positive impact on the financial sector growth but also leads to the growth of the economy in the country.

According to Chaudron (2016) a developed financial system broadens the accessibility of its services to the customers conversely, in the underdeveloped financial system which limits the accessibility of its services to the public which leads to borrowing of the money to funds its operations and this leads into few economic activities that would results to slow economic growth. Financial deepening is defined as the effectiveness of financial institutions in mobilizing savings for the investment purposes. This is due to the fact that growth of domestic savings is crucial for diversification of financial claims.

Furthermore, Kalu and Josaphat (2015), noted that financial deepening involves specialization in financial functions, organized domestic financial institution and markets gain in relation to foreign markets. Financial deepening may promote economic growth by its ability to mobilize more investments thereby lifting returns to financial resources, and hence raises productivity. Financial markets are important as they play intermediation role, by channeling funds from savers toinvestor's. With efficiency and without repression, the outcome of financial deepening is usually a well-developed financial sector with a sustainable economic growth. However, where there is no developed financial deepening also called "financial shallowness" the growth of the economy is not guaranteed. From the foregoing debate, a competitive and well-developed financial sector must be an important contributor to economic growth. Besides, financial deepening encourages a competent entrepreneur response in these growth induced economies. Financial deepening has been found to enable the financial intermediaries to effectively perform their functions into productive capital (Ezema and Ezekwe, 2016).

Theoretical Review
Supply-Leading Hypothesis
This theory was propounded by Schumpeter in 1911. The supply leading hypothesis suggests that financial deepening fuels growth. The existence and development of the financial markets brings about a higher level of savings and investment and enhance the efficiency of

capital accumulation. The contention of this hypothesis is that, a well-functioning financial institutions can promote overall economic efficiency, create and expand capital accumulation, transfer resources from traditional (non-growth) sectors to the modern growth inducing sectors and also promote a competent entrepreneurial response in these modern sectors of the economy.

The theory is based on the assumption that if transaction, information and monitoring costs are sufficiently high, then, no exchange among economic agents is necessary. These desires led to the emergence of financial institutions and markets that make up the financial sector. Early economists like Schumper (1911) and Shaw (1973) have strongly supported the view of finance led caused relationship between finance and economic growth (Marlyse, 2018). These authors are of the opinion that causality proceeds from financial to economic development, it is only at a later stage that financial development leads on to growth. In support of the supply leading hypothesis, Ogbebor et al (2020); Karimo and Ogbonna (2017); Calderon and Liu (2002); Agu and Chukwu (2008) noted that financial deepening leads to growth, which implies that an improvement in the efficiency of capital accumulation or an increase in the rate of savings enhances financial deepening which thereby leads to economic growth. Specifically, the supporters of supply leading hypothesis opined that as entrepreneurs have new access to the supply leading funds, their expectation increases and new opportunities/horizon materializes which fuels economic growth due to access to private sector credit which is an important indicator of deepening of the financial sector.

Thanvegelu (2014), criticized the supply leading hypothesis on the basis that financial deepening does not exert significant impact on economic growth but rather when economy grows, more financial institutions, financial product and innovation come into the market in response to higher demand of financial services. Furthermore, one major criticism of the supply leading hypothesis is based on the possibility that the development of the financial sector may result to an impediment to growth when it induces volatility and discourages risk unenthusiastic investors from investing. Specifically, financial innovation allows risk reduction and may lead to low precautionary savings and investment thus slow down growth.

In relation to the study, a well-developed financial intermediary facilitates the development of the economy through mobilization of savings, facilitation of trading and the diversification of risks. These important services lead to efficient allocation of resources; a more rapid accumulation of physical and human capital; and a faster technological innovation which eventually leads to a faster and long-term economic growth. Hence, this theory is relevant to this study as it shows the link between financial sector development, ROA and economic growth.

Financial Intermediation Theory
The financial deepening theory was developed by Leland and Pyle in 1977. The theory emphasized the roles of the financial intermediaries in the financial systems. The theory establishes that the contribution of intermediaries is to ensure steady flow of the funds from the surplus unit to the deficit units. The role of financial intermediaries is essential in that it ensures the growth of the economy through supply of financial commodities (Scholten and

Wensveen, 2003). The financial intermediaries ensure the creation of a platform that enables transaction of different commodities. The financial intermediaries exist due to the market imperfections. As such, in perfect market situation, with no transaction or information costs, financial intermediaries would not have existed. Numerous financial markets are characterized by informational differences between buyers and sellers.

Furthermore, the financial intermediary theory analyzes the functions and roles of financial intermediaries in the economy, the way in which the financial intermediation influences the economy on the whole and the effects of government policies on financial intermediaries. Most of the studies performed highlight their roles in achieving a durable economic growth, and the impact of regulations on financial intermediation, accentuating the role of regulatory authorities in the supervision and control of financial intermediaries. The financial intermediation theory is based on the assumption of the presence of informational asymmetry and the agency theory. In principle, the existence of financial intermediaries is explained by the existence of the following categories of factors: high cost of transaction, lack of complete information in useful time; and the method of regulation. In financial markets, information asymmetries are particularly pronounced. Investors tend to borrow with the collateral and entrepreneurs have inside information about their own investment seeking financing. It explains the importance of intermediation process of financial intermediaries in the economy as a whole.

In support of the financial intermediary theory, Shittu (2012) emphasized that intermediaries eliminate (or reduce) the need for self-financing of investments. In particular, by providing liquidity, financial institutions permit risk averse savers to hold deposits rather than liquid (but unproductive) assets. The funds obtained by the financial institutions are then available for investment in productive capital. Hence, financial institutions should finance any positive net present value project if the cost of investment is below the expected returns. The financial intermediation theory is criticized on the ground that it is heavily focused on the functions of financial institutions that are no longer crucial in mature financial systems. Also the emphasis of financial intermediation theory on the role of intermediaries as reducing the frictions of transaction costs and asymmetric information is too strong; while these factors may once have been central to the role of intermediaries, they are increasingly less relevant. Shittu (2012), suggested a view on financial intermediaries that centers on two roles. First, they are the facilitators of risk transfer and deal with an increasingly complex maze of financial instruments and markets. The key area of intermediary activity therefore has become risk management, whereas traditional intermediation theory offers little to explain why institutions should perform this function.

The financial intermediation theory is relevant to this study as it emphasizes the functions of the financial intermediaries in mobilizing, channeling, pooling savings and increasing investment levels in the economy, thus improving their efficiency and expanding their functions contributes immensely to the growth of the economy.

Theoretical Framework

This study reviewed two theories in the literature. These theories Supply Leading Hypothesis and Financial intermediation theory. Considering financial deepening and ROA of quoted insurance companies in Nigeria, this study focused on supply leading hypothesis and financial intermediation theory. These theories are of the opinion that a well-developed financial intermediary facilitates the development of the economy through mobilization of savings, facilitation of trading and the diversification of risks. These important services lead to efficient allocation of resources; a more rapid accumulation of physical and human capital; and a faster technological innovation which eventually leads to a faster and long-term economic growth. Therefore, the theories postulate that deepening of the financial sector enhances financial performance thereby improving the growth process in any economy.

Empirical Review

Mohan (2015) investigated the impact of financial deepening on economic growth in Indian using Autoregressive Distribution lag (ARDL) bound testing approach of estimating co-integration among variable. Their findings suggested that there exist an equilibrium relationship in long run between financial deepening and economic development. The results also indicated that financial deepening causes economic growth in the long run and also in the short run.

Anila (2015), examined the determinants of financial performance of insurance companies in Albania. The study population consisted of 5 insurance companies with private capital, during the period of 2008 to 2013. The investigation used cross-sectional time series data which are collected from the balance sheet annual reports, the official document delivered to the state tax office. The results showed that leverage (total debt to total assets) and risk (standard deviation of sales to average value of sales) have negative impact and tangibility (fixed assets to total assets) has positive impact on the financial performance (ROA) of these companies.

Malik (2011) explored the determinants of financial performance of insurance companies in Pakistan. Specifically, the study examined the effects of firm specific factors (age of company, size of company, volume of capital, leverage ratio and loss ratio) on financial performance proxied by ROA. The sample in the study consisted of thirty-five (35) listed life and non-life insurance companies which covered the period of 2005 to 2009. The findings showed that there is no relationship between financial performance and age of the company and there is significantly positive association between size of the company and profitability. The result also showed that the volume of capital is significantly and positively related to financial performance. Loss ratio and leverage ratio showed negative but significant relationship with profitability.

Odhiambo (2009) studied the impact of interest rate reforms on financial deepening in Kenya, using two models: the financial deepening model and the dynamic Granger causality model. The study attempted to answer two critical questions: Does interest rate liberalization in Kenya have any positive influence on financial deepening? Does the financial depth which results from interest rate liberalization lead to economic growth? Using co-integration and

error-correction models, the study found strong support for the positive impact of interest rate liberalization on financial deepening in Kenya - although the strength and clarity of its efficacy is sensitive to the level of the dependency ratio. The study also found financial depth to Granger cause economic growth in Kenya. The study, therefore, concluded that the interest rate liberalization in Kenya has succeeded in increasing economic growth through its influence on financial depth. This applies irrespective of whether the models are estimated in a static long-run formulation (cointegration model) or in the dynamic formulation (error-correction model).

Kwakye (2012), investigated the financial intermediation and the cost of credit in Ghana using a combination of analytical and survey investigative methods. The study found that financial intermediation and financial deepening are low which shows that Ghana's financial sector is still "shallow." The results also found that, from the point of view of surveyed banks which is also reflective of widely-perceived views the persistent high cost of credit is primarily the result of competitive government borrowing, high cost of bank funds and high lending risks. The research proposed interventions to address these deficiencies in the financial sector. Kisaka (2015) investigated the effect of financial deepening on the performance of smallholder farmers in Homa Bay country, Kenya using the multiple regression analysis. The coefficient of determination indicated that 65% of variation in smallholder farmers was attributed to assets, loans, share capital and deposits. It was found that a 1% rise in share capital would result in 1.74% drop in performance of SHF if all other variables remain constant. Hence, share capital and deposits are negatively related to performances of SHF. It was also found that 1% rise in loans would lead to 0.96% rise in performance of SHF and that 1% rise in private credit drive 1.03% rise in performance of SHF. Therefore, loans and other forms of private credit positively influence the performance of small holder farmers.

Ogbebor, Ajibade and Awonuga (2020) investigated the effect of financial deepening on income of selected deposit money banks in Nigeria. Purposive sampling technique was adopted in selecting the DMBs studied. Descriptive Statistics and panel data regression analysis were used in estimating the econometric model for the study. Results showed that financial deepening had significant positive effects on the income of DMBs listed in Nigeria and recommendations include a policy rethink on the part of regulatory authorities by the provision of guidelines that will facilitate more credit to MSMEs and DMBs on their part should diversify their income sources by expanding their non-interest income base.

Mulkhat and Fatimah (2019) investigated the effect of financial deepening on financial performance of deposit money banks in Nigeria using time-series data spanning 1990Q1-2017Q4. Financial performance was expressed by return on assets (ROA) and return on equity (ROE) while total bank liability, private sector credit and market capitalization as measure of financial deepening. The technique of analysis deployed is autoregressive distributed lag (ARDL) to co integration. The findings showed that the effect of total bank liability is positive and significant. Market capitalization and private sector credit on the other hand exerted negative and significant effect on financial performance. The study concluded that financial deepening affect financial performance of deposit money banks in Nigeria. The study recommended effective loan recovery strategy to mitigate the negative influence of private sector credit due to non-performing loans.

Adeyefa and Obamuyi (2018) investigated the effect of financial deepening on the performance of manufacturing firms in Nigeria from 1970 to 2016. The data were sourced from the Central Bank of Nigeria Statistical Bulletin and the National Bureau of Statistics. The model was specified, and the hypotheses were tested with the Autoregressive Distributed Lag model and Mann-Whitney U Test. The Augmented Dickey-Fuller, Phillips-Perron and Breusch-Pagan-Godfrey tests were carried out to ensure robust regression results. Results obtained from the study revealed that broad money supply has direct and significant impact on index of manufacturing production (p-value= 0.0039) in Nigeria, credit to private sector has indirect and insignificant impact on index of manufacturing production (p-value= 0.1167) in Nigeria and market capitalization has an indirect and significant impact on index of manufacturing production (p-value= 0.0051) in the long-run and a direct and insignificant impact (p-value= 0.1596) in the short-run. The study also discovered that financial deepening impacted more on the manufacturing sector performance in the post-financial reforms period. The study therefore recommended that government should launch new financial reforms capable of enhancing the accessibility of manufacturing sector to credit and ensure adequate implementation and monitoring of the existing policies on financial reforms in Nigeria with a view to deepening the Nigerian financial system and thereby promoting manufacturing firms' performance in Nigeria.

Ahmed, Awonusi, Adebanjo and Ewunuga (2017), examined the impact of financial sector reforms on savings mobilization in Nigeria between the period of 1980 and 2013. It specifically examined the effects of financial sector reforms variables namely ratio of domestic credit given to the private sector to gross domestic product, prime lending rate, ratio of broad money supply to gross domestic product. Others include percentage contribution of financial sector to gross domestic product, Inflation and Dummy variable (a measure of pre-reform and post reform periods) on savings mobilization (measured by domestic savings ratio) in Nigeria. Using the ordinary least squares (OLS) estimation technique, the result confirmed that financial sector reforms variables used in the study have been effective in enhancing savings mobilization in Nigeria. Hence the need for policy makers and regulators to initiate policies that will ensure stability of the financial sector, reduce lending rates and increase credit to the private sector.

Methodology
This study adopted an *ex-post facto* research design. The scope of the Study covered the post consolidation period of the insurance sector. This study used panel data for the period of 2010-2019 to examine the effect of financial deepening on financial performance of quoted insurance companies in Nigeria. The scope was selected as it takes into consideration the post consolidation era which was occasioned by the recapitalization of the insurance sector in Nigeria. The data were sourced from the financial reports of the selected insurance companies quoted in Nigeria. The population of the study consists of all the twenty-six (26) insurance companies in Nigeria quoted on the Nigerian Stock Exchange as at 31st December 2019. The purposive sampling technique was adopted to select ten (15) insurance companies from the population. The fourteen (14) insurance companies selected were based on the market capitalization values of the companies as at 2018. The fourteen (14) insurance companies with large market capitalization values are AIICO Insurance Plc, AXA Mansard Insurance

Plc, Consolidated Hallmark Insurance Plc, Cornerstone Insurance Plc, Custodian Insurance Plc, Lasaco Assurance Plc, Law Union and Rock Insurance Plc, Mutual Benefit Assurance Plc, NEM Insurance Plc, Niger Insurance Plc, Royal Exchange Insurance Plc, Sovereign Trust Insurance Plc, Sunu Assurance Plc, and WAPIC Insurance Plc.

Model Specification
The model in this study followed the work of Ezema and Ezekwe (2016) which examined the impact of financial deepening reform on insurance companies in Nigeria. Specifically, the insurance companies' financial performance variables will be defined as return on capital employed, premium to shareholders surplus ratio, reserves to shareholders' surplus ratio and return on asset while indicators for financial deepening will include ratio of insured claims to earned premiums, insurance companies' firm size, premium growth rate and ratio of operating expenses to net earned premium. Taking cognizance of their models, the model for this study was coined and modified in respect to the objectives of the study and giving as:

This takes the form of a mathematical function:

$$Y = f(X).$$

The functional form of the model is as follows:

$$ROA = f\ (RCEP_{it},\ IFS_{it},\ PGR_{it},\ RENP_{it}) \tag{1}$$

$$ROA_{it} = \beta_0 + \beta_1 RCEP_{it} + \beta_2 IFS_{it} + \beta_3 PGR_{it} + \beta_4 RENP_{it} + \mu_{it} \tag{2}$$

$$RSR_{it} = f\ (RCEP_{it},\ IFS_{it},\ PGR_{it},\ RENP_{it}) \tag{3}$$

$$RSR_{it} = \beta_0 + \beta_1 RCEP_{it} + \beta_2 IFS_{it} + \beta_3 PGR_{it} + \beta_4 RENP_{it} + \mu_{it} \tag{4}$$

Where:
ROA = Return on Asset
RSR = Reserves to shareholders surplus ratio
RCEP= ratio of insured claims to earned premiums
IFS = insurance companies' firm size
PGR = premium growth rate
RENP= ratio of operating expenses to net earned premium
β_0 = intercept or slope
$\beta_1 - \beta_4$ = regression coefficients
μ = Error term

Discussions of results
Summary Statistics
The summary of the series under consideration which constitute the number observation, mean, standard deviation, minimum and maximum are presented in Table 1 below. The observation gives the numerical figure of the number of observations considered in this study while mean, standard deviation, minimum and maximum are the core distribution measures used.

Summary Statistics for the selected Dependent variables
In this subsection, we focused on the presentation of summary statistics of the selected dependent variables which are return on asset (ROA) and reserves to shareholders surplus ratio (RSR)

Table 1: Dependent Variables - Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
RSR	139	0.48	0.30	-1.50	0.91
ROA	139	0.04	0.05	-0.20	0.21

Source: Authors' Computation, 2020.

Reserves to Shareholders Surplus Ratio (RSR): RSR had 0.48 as an overall average value, with relatively wide disparity; this is shown by the standard deviation value which is seen to be 0.30. The lowest and the highest RSR values are – 1.50 and 0.91 respectively. Overall, the average value of 0.48 indicated that during the years; the companies on average have an adequate reserve with which unforeseen expenses can be covered. *Return on Asset (ROA)*: the average value of ROA was found to be 0.04 with standard deviation equals 0.0.05 which showed that the series are relatively closed to the mean. The minimum and maximum values of the series are -0.20 and 0.21 respectively. The average value of 0.04 indicated the companies achieved a return of about 4% on the total asset during the years under study.

Summary Statistics for the selected Independent variables
In this subsection, we focused on the presentation of summary statistics of the selected independent variables which are Ratio of Insured Claims to Earned Premiums (RCEP), Insurance Companies Firm Size (IFS), Premium Growth Rate (PGR) and Ratio of Operating Expenses to Net earned Premium (RENP).

Table 2: Independent Variable – Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
RCEP	139	0.49	0.41	0.03	3.59
IFS	139	16.70	0.82	15.50	18.89
PGR	139	0.30	1.56	-0.63	18.09
RENP	139	0.55	0.32	0.06	2.06

Source: Authors' Computation, 2020.

Ratio of Insured Claims to Earned Premiums (RCEP): across the selected companies and during the year under study RCEP had standard deviation of 0.41; the mean which is the average value amounts to 0.49. These values were computed from the number of series that have minimum and maximum values as 0.03 and 3.59 respectively. On average, this depicts that the insurance companies are not unprofitable and they are in good financial health owing to the fact that they are paying out less in claims than the earned premiums.

Insurance Companies Firm Size (IFS): The IFS had a range of value that spring from 15.50 to 18.89, the average value is found to be 16.70 and it's having 0.82as the standard deviation, which determines how these series are spread out to the mean. From the computed values it can be inferred that the selected firms are relatively big in size.

Premium Growth Rate (PGR): PGR had an average value of 0.30 with standard deviation of 1.56 that shows that these variable values are not close to the mean but are considerably spread out. The highest and the lowest values of PGR are found to be -0.63 and 18.09 respectively. The average growth rate of 30% is relatively good and it shows that the insurance companies are not unprofitable and they are in good financial health.

Ratio of Operating Expenses to Net earned Premium (RENP): the average RENP value is0.55 with standard deviation of 0.32. The standard deviation showed that series are not close to the mean and are relatively spread out. The highest and the lowest values of RENP are found to be 0.06 and 2.06 respectively. The average value of 55% indicates that the firms spend less on operating activities than the earned premiums.

Test of Hypotheses

The main objective of this study was to examine the effect of financial deepening on ROA of selected quoted insurance companies in Nigeria. Nevertheless, the nature of the data used in this study informed the decision to use panel regression approach with the aid of Stata 15 and the results are discussed in this sub-section. The regressions models which produced the results discussed here are chosen using Breusch and Pagan Lagrangian multiplier and Hausman tests. Empirically, LM test with the null hypothesis that variance across entities is zero tests whether the data used in this study is poolable or not while Hausmantests whether the unique errors are correlated with the explanatory variables; the null hypothesis is they are not. In other words, it tests whether Random or Fixed Effect regression is appropriate after LM test must have established that the data is not Poolable. Furthermore, in line with the specific objective of this study, four (4) different regression models are estimated and in each of these models and Ratio of Insured Claims to Earned Premiums (RCEP), Insurance Companies Firm Size (IFS), Premium Growth Rate (PGR) and Ratio of Operating Expenses to Net earned Premium (RENP) are used as explanatory variables. Prior to the regression analysis, correlation analysis and variance inflation factor are considered to check whether each of the models is free from multicollinearity problems.

Correlation Matrix

The results of the correlation analysis gives insight into the association that exists among the dependent variables return on asset (ROA) reserves to shareholders' surplus ratio (RSR); and independent variables Ratio of Insured Claims to Earned Premiums (RCEP), Insurance Companies Firm Size (IFS), Premium Growth Rate (PGR) and Ratio of Operating Expenses to Net earned Premium (RENP) is summarily given in Table 3 below.
RENP) is summarily given in Table 3 below.

Table 3: Correlation Matrix

Variable	RSR	ROA	RCEP	IFS	PGR	RENP		
RSR	-0.017	-0.354	1					
ROA	0.748	0.074	0.051	1				
RCEP	-0.077	-0.205	0.122	-0.159	1			
IFS	0.241	0.270	0.392	-0.023	0.343	1		
PGR	0.068	-0.068	0.115	0.139	-0.018	0.044	1	
RENP	-0.146	-0.116	0.088	-0.189	0.451	0.119	-0.059	1

Source: Authors' Computation, 2020.

The result of the correlation analysis in Table 3 is presented to examine the nature of the association among the variables considered for our estimated models and to ensure that the associations among the explanatory variables are not so high to the extent of posing multicollinearity problems. From the result, correlation coefficients among the dependent variables range from - 0.205 and 0.748 while the correlation coefficients among the independent variables range from- 0.059 and 0.451. The associations among the independent variables were all positive except that of PGR with RCEP and RENP with PGR. Based on the result of the associations among the explanatory variables, it is not certain that multicollinearity probleme xists in the subsequent regression analysis.

Variance Inflation Factor {VIF}
To further check whether the degrees of associations among the explanatory variables is not capable of causing multicollinearity problem in the subsequent analysis, Variance Inflation Factor is employed.

Table 4: Variance Inflation Factor {VIF}

Variable	VIF	1/VIF
RCEP	1.41	0.711309
RENP	1.26	0.792659
IFS	1.14	0.87812
PGR	1.01	0.99381
Mean VIF	1.2	

Source: Authors' Computation, 2020.

The result presented in table 4 showed that the average VIF values for the selected independent variables is 1.20 which is below 10. Also, this value with the corresponding tolerance values that are approaching above 1 depict that there is no harmful effectof multicollinearity.

Test of Hypothesis
Hausman and Breusch and Pagan LM Tests for Financial Deepening and Reserves to Shareholders Surplus Ratio (RSR)
To model the effect of financial deepening on reserves to shareholders surplus ratio (RSR) of insurance companies quoted in Nigeria we employed LM and Hausman tests to choose the best estimator among the major three (3) regression approach that can be considered for data set of this nature. The results of the tests are presented in table 5

Table 5: Hausman and Breusch and Pagan LM Tests for Financial Deepening and Reserves to Shareholders Surplus Ratio

	Hausman and Breusch and Pagan Lagrangian multiplier tests	
Variable	**Chibar2** **Prob>Chibar2**	**Decision**
B – P LM Test	49.230***	
B – P LM > P – value	0.000	Random Effect Model
Hausman Test	4.830	
Hausman> P – value	0.305	

Source: Authors' Computation, 2020.
Note: *, ** and *** denote significance at the 1 %, 5 % and 10 % levels.

The LM test result is statistically significant at 5% level (P-value < 0.05) suggesting that the data is not poolable. That is, the effect of Financial Deepening on Reserves to Shareholders Surplus Ratio (RSR) cannot be adequately captured using Pooled (OLS) regression estimator Nevertheless, the insignificant value of Hausman at 5% level (P-value > 0.05) shows preference for Random Effect model. Therefore, Random effect regression estimator is considered the best estimator investigating the effect financial deepening on shareholders surplus ratio of insurance companies quoted in Nigeria.

Regression Result for Financial Deepening and Shareholders Surplus Ratio
The results from the chosen Random effect regression estimator as suggested by LM and Hausman tests are presented in Table 6.

Table 6: Regression Result for Financial Deepening and Shareholders Surplus Ratio

Random Effect Regression with robust standard errors; **Dependent Variable = RSR**			
Variable	**β**	**Aster**	**se**
Constant	-2.654	**	[1.284]
RCEP	-0.075		[0.053]
IFS	0.188	**	[0.077]
PGR	0.013	**	[0.006]
RENP	0.057		[0.076]
Observations	139		
R-squared	0.143		
Adj. R-squared	0.122		
F-stat/Wald chi2 (P – value)	10.22 (0.037)		
Pesaran's test (P – value)	1.092 (0.275)		
Breusch-Pagan test (P – value)	12.26 (0.001)		

Source: Authors' Computation, 2020.
Note: *, ** and *** denote significance at the 1 %, 5 % and 10 % levels.

Interpretation
It can be seen that the preferred regression estimator is statistically significant going by the F-stat/Wald chi2 (P – value) = 10.22 (0.037). Then again, this means that the collective effects selected explanatory variables on Shareholders Surplus Ratio is statistically significant at 5% level. Also, as suggested by the adjusted R-square value which is 0.122 the percentage of variations in Shareholders Surplus Ratio explained by Ratio of Insured Claims to Earned Premiums (RCEP), Insurance Companies Firm Size (IFS), Premium Growth Rate (PGR) and Ratio of Operating Expenses to Net earned Premium (RENP) is 12.2. Moreover, for testing the classical assumptions of heterocedasticity and cross-sectional dependence, Pesaran CD Test and Breusch-Pagan test are employed and the results are presented in the Table. The results show statistically significant values (P-values < 0.05) for Breusch-Pagan test and statistically insignificant value for Pesaran's test. These suggest the rejection of the null hypothesis of homoscedasticity in this model. As a result, we conclude that the regression estimator does not have constant variance. Thus, the Random effect regression approach with *robust standard error* is used.

Looking at the explanatory variables, the results in Table 6 clearly indicate that RCEP takes negative and insignificant coefficient { = - 0.075; P-value > 0.05}. This means that the effect of RCEP on the financial performance (in terms of RSR) of the selected listed insurance companies in Nigeria during the period of this study is negative and statistically insignificant. For IFS, the coefficient is seen to be positive and statistically significant at 5% level { =0.188; P-value < 0.05} indicating that IFS have negative and significant effect on RSR of the selected insurance companies. Similarly, PGR has a coefficient that is found to be positive and significant at 5% level { = 0.013; P-value < 0.05}, which means that the effect of PGR on RSR during the period of this study is also positive and statistically significant. The coefficient of RENP exhibits positive and statistically insignificant value { = 0.057; P-value > 0.05} suggesting that RENP does not significant effect on financial performance (in terms of RSR) of the selected insurance companies during the period of this study.

Decision: Overall, going by the results; the null hypothesis of "no significant effect of financial deepening on reserves to shareholders surplus ratio (RSR) of insurance companies quoted in Nigeria" is rejected. This inference is established on the F-stat/Wald chi2 = 10.22 (P – value = 0.275). Hence, we conclude that there is significant effect of financial deepening on reserves to shareholders surplus ratio (RSR) of insurance companies quoted in Nigeria.

Hausman and Breusch and Pagan LM Tests for Financial Deepening and Return on Asset
To choose a model that adequately captures the effect financial deepening on Return on Asset (ROA) of insurance companies quoted in Nigeria, the result of Hausman and Breusch and Pagan Lagrangian multiplier tests carried out in this study is presented in Table 7.

Table 7: Hausman and Breusch and Pagan LM Tests for Financial Deepening and Return on Asset

Hausman and Breusch and Pagan Lagrangian multiplier tests		
Variable	**Chibar2** **Prob>Chibar2**	**Decision**
B – P LM Test	20.280***	
B – P LM > P – value	0.000	Random Effect Model
Hausman Test	1.610	
Hausman> P – value	0.806	

Source: Authors' Computation, 2020.
: *, ** and *** denote significance at the 1 %, 5 % and 10 % levels

The LM test result shows a statistically significant value at 5% level (P-value < 0.05) suggesting that Pooled (OLS) regression approach is not capable of modeling the effect of financial deepening on shareholders' surplus ratio (PSR) of insurance companies quoted in Nigeria. However, the significant value of Hausman at 5% level (P-value < 0.05) is suggesting that fixed effect estimator is more appropriate when we choose to use panel regression approach in modeling the effect of financial deepening on shareholders' surplus ratio (PSR) of insurance companies quoted in Nigeria.

Regression Result for Financial Deepening and Return on Asset
The regression results from the chosen Random effect estimator as suggested by LM and Hausman tests are presented in Table 8.

Table 8: Regression Result for Financial Deepening and Return on Asset

Random Effect Regression with normal standard errors; **Dependent Variable** = ROA			
Variable	**β**	**Aster**	**se**
Constant	0.057		[0.106]
RCEP	-0.004		[0.011]
IFS	0.0003		[0.006]
PGR	0.003		[0.002]
RENP	-0.038	***	[0.014]
Observations	139		
R-squared	0.119		
Adj. R-squared	0.111		
F-stat/Wald chi2 (P – value)	13.34 (0.010)		
Pesaran's test (P – value)	-1.548 (1.878)		
Breusch-Pagan test (P – value)	0.390 (0.530)		

Source: Authors' Calculation, 2020.
Note: *, ** and *** denote significance at the 1 %, 5 % and 10 % levels

Interpretation
The results from the selected Random effect regression estimator as presented in Table 8showed a significant F-stat/Wald chi2 = 13.34 (P – value = 0.010). This means that the combine effect of the selected explanatory variables on Return on asset is statistically significant at 5% level. Equally, Adjusted R-squarein this model is 0.111 indicating that the percentage of variations in Return on asset explained by Ratio of Insured Claims to Earned Premiums (RCEP), Insurance Companies Firm Size (IFS), Premium Growth Rate (PGR) and Ratio of Operating Expenses to Net earned Premium (RENP) is 11.1. Besides, to check the classical panel regression assumptions of heterocedasticity and cross-sectional dependence requirements; the results of Pesaran CD Test for cross sectional dependence and Breusch-Pagan test for heterocedasticity are presented. The results show statistically insignificant values (P-values > 0.05). These suggest the acceptance of the null hypothesis of no cross-sectional dependence and homoscedasticity in this model. Consequently, regression model has no cross sectional dependence problem and have constant variance.

Focusing on the explanatory variables, the results in Table 8 clearly depict that RCEP is having negative and insignificant coefficient { = - 0.004; P-value > 0.05} suggesting that RCEP has no significant effect on the financial performance (in terms of ROA) of the selected listed insurance companies in Nigeria during the period of this study. In the case of IFS, the coefficient is having positive but statistically insignificant { = 0.0003; P-value >0.05}, which implies that IFS has no significant effect on ROA of the selected insurance companies. Also, the coefficient of PGR is seen to be positive and statistically insignificant at 5% level { = 0.003; P-value > 0.05} suggesting that the effect of PGR on ROA during the period of this study is positive but statistically insignificant. On the contrary, the coefficient of RENP is found to be negative { = - 0.038; P-value < 0.05} and the negative coefficient is found to be highly statistically significant at 1% level suggesting that RENP significantly affect the financial performance of the selected insurance companies during the period of this study.

Decision: Overall, the results suggest the rejection of the null hypothesis that states that "financial deepening does not have any significant effect on return on asset (ROA) of insurance companies quoted in Nigeria". This inference is based on the value F-stat/Wald chi2 = 13.34 (P – value = 0.010). As a result, we conclude that financial deepening has significant effect on return on asset (ROA) of insurance companies quoted in Nigeria

Discussion of Findings
The relative importance of financial deepening on financial performance of insurance companies was confirmed. While the financial performance of insurance companies was proxied by reserves to shareholders surplus ratio (RSR) and return on asset (ROA). While financial deepening was measured by Ratio of Insured Claims to Earned Premiums (RCEP), Insurance Companies Firm Size (IFS), Premium Growth Rate (PGR) and Ratio of Operating Expenses to Net earned Premium (RENP). Prior to the findings of the study, the model findings indicated that RCEP was negative and insignificant { = - 0.075; P-value > 0.05} to RSR. IFS was positive and statistically significant at 5% level { = 0.188; P-value <0.05} to RSR. Similarly, PGR had a positive and statistically significant at 5% level { = 0.013; P-value < 0.05} to influence RSR. The RENP exhibited positive and statistically insignificant value { = 0.057; P-value > 0.05} of RSR. The study model concluded that there is significant effect of financial deepening on reserves to shareholders surplus ratio (RSR) of insurance companies quoted in Nigeria. The work of Anila (2015) was in line with the findings of the work as the study shows that the insurance premium capital and level of total insurance investment has significantly impacted on economic growth in Nigeria. The second model depict that RCEP posited a negative and insignificant effect on { = - 0.004; P-value > 0.05} return on assets. IFS had a positive but statistically insignificant { = 0.0003; P-value > 0.05} effect on return on assets. Also, PGR had a positive and statistically insignificant at 5% level { = 0.003; P-value > 0.05} to return on assets.

Furthermore, RENP was found to be negative { = - 0.038; P-value < 0.05} and statistically significant to return on assets. The study concluded that financial deepening had significant effect on return on asset (ROA) of insurance companies quoted in Nigeria. The work of Odhiambo (2009), had missed results as the findings revealed that insurers' size, tangibility and leverage were statistically significant and positively related with return on total asset; however, loss ratio (risk) was statistically significant and negatively related with ROA. Thus, insurers' size, loss ratio (risk), tangibility and leverage are important determinants of performance of insurance companies in Ethiopia while growth in writing premium, insurers' age and liquidity have statistically insignificant relationship with ROA. The work of Malik (2011) was not in tandem with the general findings of this study. Malik (2011) retorted that there is no relationship between financial performance and age of the company. However, the study affirmed that there is significantly positive association between size of the company and profitability.

Conclusion
Performance of insurance companies in financial terms is normally expressed in net premium earned from underwriting activities, annual turnover, return on investment, and return on equity. However, in the area of insurance and financial performance revealed that the key

indicator of a firms performance is ROA which is defined as profit after tax divided by total assets. The performance of insurance companies could be affected by both internal and external factors. Such factors include Ratio of Insured Claims to Earned Premiums, Insurance Companies Firm Size, Premium Growth Rate, min the growth rate and Ratio of Operating Expenses to Net earned Premium. However, factors such as growth in money supply, interest rate, inflation rate and gross domestic product are macroeconomic or market-specific factors which are out of control of management. RCEP posited a negative and insignificant effect on return on assets. IFS had a positive but statistically insignificant effect on return on assets. Also, PGR had a positive and statistically insignificant at 5% level to return on assets. Furthermore, RENP was found to be negative and statistically significant to return on assets.

The study concluded that there is significant effect of financial deepening on ROA of insurance companies quoted in Nigeria.

Recommendations

The following recommendations were given:

1. There is overriding need for insurance companies to efficiently manage their risk assets portfolio especially their trading books in order to significantly improve their shareholders' surplus ratio (RSR) of insurance companies quoted in Nigeria.
2. Insurance companies in Nigeria should devise proper strategy to improve the utilization of their assets and reduce operating costs in order to improve the returns on assets of their companies.

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