

Predictors of Profitability in the Nigerian Insurance Industry



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ABSTRACT: This study examined the predictors of profitability in Nigeria Insurance Industry between 2011 and 2020. It looked into the effect of financial leverage, solvency margin, financial liquidity and risk underwriting on Profitability of insurance industry in Nigeria. In the study, descriptive research design was employed with the population of thirteen (N=13) composite insurers from which a sample of six (n=6) were randomly selected. Four hypotheses were tested using e-view. Findings showed that SOVEREIGN TRUST plc has the highest ROE with mean value of 0.058489 followed by LEADWAY Insurance Plc with 0.043822 mean value on ROE. Mutual Benefit plc covers 0.038811 and PRESTIGE insurance has ROE of 0.028478. LASACO Assurance Plc with 0.025744 while Cornerstone plc has the lowest mean value on ROE: 0.0112 in the distribution. Thus it is evident that SOVEREIGN TRUST plc and LEADWAY Insurance Plc are the leaders in the Nigerian Insurance industry for the period, with positive effect of financial leverage, solvency margin, financial liquidity and risk underwriting on profitability of the insurance companies in Nigeria. The study therefore concluded that there is statistically significant relationship between the four independent variables (financial liquidity, solvency margin, risk underwriting and financial leverage) on the dependent variable, profitability, proxied by return on equity of insurance companies in Nigeria. The study recommended that stakeholders in the Nigerian insurance industry in collaboration with their regulatory body; National Insurance Commission (NAICOM), should maximize the contributions of the various predictors of profitability in the composite insurance industry across the nation.

KEYWORDS: Profitability, financial leverage, solvency margin, financial liquidity risk underwriting

INTRODUCTION

Every firm is most concerned with its profitability which is one of the most frequently used financial performance measures. Profitability ratios are used to determine the firm's bottom line. Insurance industry profitability has attracted scholarly attention in recent studies due to its importance in profitability measurement. However, in the context of the Insurance sector particularly in developing countries or emerging markets like Nigeria, it has received little attention (Eric, Samuel & Victor, 2013). The profitability of the industry has always been difficult to measure as compared with other financial institutions or corporations. For insurers, profitability is affected by a host of factors including actual mortality experience, investment earning, capital gains or losses, the scale of policy holder dividends, and federal and state taxes (Wright, 1992).

Firm's profitability enables the firm to withstand competition and the challenges emanating from the industry. Profitability is one of the reasons for firm's existence, and it is one of the most important objective of the firm. This is true because financial management focuses on the maximization of the owner's wealth, and profitability is employed as one of the parameters to measure firms' performance in this regard. Profit earnings help firms to survive and expand over time (Akpan, Nnamseh, Etuk, Edema, & Ekanem 2020). The profitability of insurance firms in financial terms is normally expressed in net premium earned, profitability from underwriting activities, annual turnover, return on investment and return on equity. These measures can be classified as profitability measures and investment profitability measures (Akpan, Nnamseh, Etuk, Edema, & Ekanem 2020). Profitability provides a well-organized insight into the performance structure of insurers, using the published data from the financial statement (Mirie & Jane, 2015).

However, at the earlier stages of the insurance industry, it was to provide the mechanism for risk transfer but now the industry has been helping in channeling funds in an appropriate way to support the business activities in the economy and at the same time, making profit and contributing to nation building through income contributions. Insurers' profitability is influenced by both internal and external factors. Whereas, internal factors focus on an insurer's specific characteristic, the external factors concern both industry features and macroeconomic variables (Adams, & Buckle, 2000). Successful operation of the insurance

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industry would therefore help provide financial support for other industries and development of the country. For doing so, the industry is expected to be financially sound enough and profitable in its operations.

STATEMENT OF THE PROBLEM

Prior to the 2006 recapitalization of Nigerian insurance companies, the National Insurance Commission (NAICOM) identified some factors and challenges, among others, that limited the Nigerian insurance industry's ability to perform significantly. These difficulties include undercapitalization of existing industry players, scarcity of appropriate human capital, low returns on capital, the presence of too many fringe players, and poor asset quality. Other challenges include the prevalence of unethical practices, significant corporate governance issues, insurance premium flight, inadequate business infrastructure, particularly in the area of ICT, a lack of innovation in product development, a lack of consumer awareness of the uses and suitability of insurance products, a low contribution to the Gross Domestic Product (GDP), and poor corporate governance structures (Busayo, 2014). In response to the problems identified by NAICOM, reform was implemented on September 5, 2015, and ended on February 28, 2007.

Furthermore, eight (8) years after the reform was completed, an official report revealed that the profitability of insurance companies in Nigeria remains below average (NAICOM, 2014). To support this, it is important to note the variation in insurance contribution across the world's economies. South Africa, for example, has a population of 40 million people and the largest insurance market in Africa, accounting for 78.13 percent of the continent's premiums (Daniel, 2015). The South African insurance industry contributed 16% of the country's GDP, whereas Nigeria, with over 170 million people, contributed only 2.3 percent of the continent's total premium and 0.3 percent of the overall country's GDP in 2014, in terms of the value of gross premiums written (Aliero, & Shuaibu, 2013).

Furthermore, despite the fact that the nation's GDP was rebased in 2014, placing Nigeria first in Africa and 26th in the world, the contributions of the insurance industry to the rebased GDP decreased from 0.7 percent to 0.6 percent (Aliero, & Shuaibu, 2013). In developed economies such as the United States and Japan, 70 percent to 90 percent of citizens typically have one or more insurance policies. On the contrary, in developing countries, insurance service is limited to a few wealthy individuals and businesses, resulting in a negligible contribution to the economy. To address these issues, it is necessary to empirically investigate and identify the predictors of insurance profitability in Nigeria in order to make recommendations as a result of the following issues: first, there has been a question of available and sufficient data for empirical studies that suggest the predictors of insurance profitability in Nigeria in recent years. Second, to the best of our knowledge, there are few studies that focus on the predictors of insurance profitability in Nigeria. Furthermore, even the few studies conducted in Nigeria have limitations. For example, such studies in Nigeria have focused their data collection on states or geopolitical zones of the country rather than the entire country. As a result, little effort was expended to justify the profitability of insurance companies throughout the country. This study has therefore extended the geographical scope to cover the activities of the selected insurers in the Nigeria.

Third, the focus of such studies was primarily on life insurance; they did not examine the full range of insurance services offered by the Nigerian insurance industry (Life Insurance, General Insurance and Reinsurance). Based on the aforementioned research problems, it is critical to investigate the factors influencing insurance profitability in Nigeria.

AIM AND OBJECTIVES OF THE STUDY

The main objective of the study is to examine the predictors of insurance firms' profitability in Nigeria, using listed insurance firms as study case.

The specific objectives of this research study are:

- i. To examine the effect of Financial Liquidity on Profitability of insurance industry in Nigeria
- ii. To investigate the relationship between Solvency Margin and Profitability of insurance industry in Nigeria
- iii. To assess the influence of Financial Leverage on Profitability of insurance industry in Nigeria
- iv. To examine the relationship between Risk Underwriting and Profitability of insurance industry in Nigeria

Research Hypotheses

- H01: Financial Liquidity has no significant effect on Profitability of insurance industry in Nigeria
H02: Solvency Margin has no significant relationship with Profitability of insurance industry in Nigeria
H03: Financial Leverage has no significant influence on Profitability of insurance industry in Nigeria
H04: Risk underwriting has no significant relationship with and Profitability of insurance industry in Nigeria

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SIGNIFICANCE OF THE STUDY

It is believed that this study would be informative to stakeholders and prospective investors to design plans that would be used to improve upon the short-comings from reforms and other regulations in insurance business in Nigeria. The results generated from this study would provide decisions on qualitative and quantitative measures to be used in selecting the predictors of the profitability of insurance companies in Nigeria. This in turn, would allow managers, owners, and outside investors to be better informed about these predictors and how stakeholders may use these to allocate their resources so that the carriers in this sector could become more profitable when alternatives are available to them.

SCOPE OF THE STUDY

The focus of this study is on listed insurance companies in Nigerian. The listed insurance companies were chosen because of the fact that their financial reports and accounts over the period of study (2011-2020) were published under strict supervision of NAICOM. In addition, the financial report which is among our sources of data collection is available in the Nigerian Insurance Digest published fact book. The listed insurance companies are therefore considered as representatives of other insurance companies that were not listed on the floor of Nigerian Stock Exchange market.

LITERATURE REVIEW

Conceptual review

Profitability in Insurance Industry

Profitability is an undeniable factor for the continued existence of business globally, this is because, and no business owner goes into business with a setback and loss-control mindset, therefore, the sole aim of entering into the business arena is to make profit. Without profit, a business will not be able to grow and meet some of its short term obligations and goals (Okoli, 2011). Profit serves as a source of dividends and growth to an investor and management, whereas, it serves as additional security against insolvency to the insured and regulators (Ayele, 2012). Profitability has a golden ring to investors and insurers, whereas, to policyholder of a stock insurer, it appears like a mark-up, and to the policyholders of a mutual company, it is neutral. Regulatory bodies of insurance companies either encourage profitability when faced with solvency, or try to reduce it when regulating rates.

In recent times, profitability of insurance companies has been debated against her sister (banking) industry, however, for insurance companies to stand out profitably like the banking sector, it must be adequately functional in underwriting practices. This indicates that underwriting is a key determinant amongst other aspects of insurance business. It also embraces that profitability is regarded as a very essential goal of financial management because the principal aim of financial management is to maximize the owner's wealth, because of this; profitability is an essential determinant of profitability (McClenahan, 2015). However, insurance is designed to protect the financial wellbeing of an individual, company or other entity in case of unexpected loss. Some forms of insurance are required by law, while others are optional. Agreeing to the terms of an insurance policy and paying the premium create a contract between the insurer and the insured (Adams, M., & Buckle, 2000). Insurance is a complicated issue which involves economic and social devices for the handling of risks to life and property and it is social in nature because it represents the cooperation of various individuals for mutual benefits by working together to reduce the consequence of similar risks (Okoli, 2011). As every new area of risks, and since new insurance package is mounted to take care of more and more areas of risks, the insurance industry flourishes (McClenahan, 2015). Insurance companies could prosper by taking reasonable leverage risk or could become insolvent if the risk is out of control. It provides evidence that insurance companies with high leverage have better operational performance than insurance companies with low leverage (Adams, & Buckle, 2000). Furthermore, studies have shown it that firms with more liquid assets are less likely to fail because they can realize cash even in very difficult situations. It is therefore expected that insurance companies with more liquid assets will outperform those with less liquid assets.

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Financial Leverage

Traditionally, firms borrow funds to raise cash for operations. The central issue at this point of literature is the influence of financial leverage on corporate profitability because leverage allows a financial institution to increase the potential gains or losses on a position or investment beyond what would be possible through a direct investment of its own funds. The findings of the effect of financial leverage on corporate profitability has been quite disputed and related in the corporate finance literature. When the insurance company injects debt capital to the business, it is leading to financial leverage because of a tax shield, although the company can be subject to default risk (Anaesoronye, 2010).

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Financial Liquidity

Liquidity is the capacity of a firm to meet the immediate financial obligation, and it is expressed as current assets to current liabilities. Profitability is driven by more liquid assets. There are many theoretical reasons for assuming that liquidity directly affects the profitability of the company. Thus, a positive relationship between liquidity and profitability would not be far-fetched. Because stock shares are the currency which commands both cash flow and control rights, the tradability of this currency plays a central role in the governance, valuation, and profitability of firms. Thus, a priori, a positive relation between liquidity and profitability is quite plausible.

Solvency Ratio

The solvency of an insurance company corresponds to its ability to pay claims. The Solvency ratio is also a way investors can measure the company's ability to meet its long term obligations. An insurer is insolvent if its assets are not adequate (over indebtedness) or cannot be disposed of in time to pay the claims arising. Solvency margin is one of the indicators of financial soundness. Insurance companies with higher solvency margin are considered to be sound financially. Financially sound insurance companies are better able to attract prospective policyholders and are better able to adhere to the specified underwriting guidelines. By adhering to these guidelines, the insurance companies can expect a better underwriting result. Therefore, it is expected that the relationship between profitability and solvency margin would be positive (Kishor & Temesgen, 2020).

Solvency ratios measure the company's ability to survive over a long period of time. Current and potential investors will be interested in a company's financing arrangements and also its risk. A company that has borrowed money, obviously has a commitment to pay future interest charges and make capital repayments. This can be a financial burden and possibly increase the risk of insolvency. The solvency margin is calculated as ratio of net assets to net written premiums, and represents a key indicator of the insurer's financial stability. A positive linkage between this variable and the insurer's profitability is expected, since the insurer's financial stability is an important benchmark to potential customers (Ryan & Julius, 2022).

THEORETICAL REVIEW

Two relevant theories are used to underpin this study. These are the Resource Based View and the Contingency Planning Theory.

Resource-Based View Theory

The Resource-Based View (RBV) theory was discovered to be relevant to this study. The resource-based view of the firm has established itself as a promising contemporary theory that combines strategic insights on competitive advantage with organizational insights on firm existence. The resource-based perspective views the firm's resources as the primary determinants of competitive advantage and profitability.

The resource-based view theory of the firm's foundations envisioned the firm as an administrative organization and a collection of productive resources, both physical and human. The RBV's distinguishing features are:

- Its focus on the resource endowments of firms as the basis of firm heterogeneity,
- Its claim that differential profitability among firms can be explained by differences in their resource endowments, and
- Its resulting suggestion that building up stocks of strategically valuable resources is the key to achieving competitive success and the generation of economic profits referred to as rents (Madhani, 2010).

According to the RBV, material resources as well as human resources, can provide the firm a variety of services. The same resources can be put to use in different ways, according to the ideas of the firms on how to apply them and extended this view by claiming that profitability and profit are equal factors in expanding decisions. In recent years, many studies on the status, evolution, and/or trends of the resource-based view (RBV) have been published. The issue of firm profitability has been central in strategy research for decades and encompasses most other questions that have been raised in the field, for instance, why firms differ, how they behave, how they choose strategies and how they are managed.

In the 1990s, with the rise of the resource-based approach, strategy researchers' focus regarding the sources of sustainable competitive advantage shifted from industry to firm specific effects (Madhani, 2010). A central premise of the resource-based view is that firms compete on the basis of their resources and capabilities. The resource-based view theory, therefore, focuses specially on the inside of the firm, its resources and capabilities, to explain the profit and value of the organization. This theory is applied to explain differences in profitability within an industry. The RBV of the firm states that differences in profitability happen when successful organizations possess valuable resources that others do not have, allowing them to obtain a rent in its quasi-monopolist form. Thus, the need for insurers to identify the resource-predictors and effectively put these resources of the firms to use and generate profit is key.

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Contingency Planning Theory

Contingency planning (CP), also referred to as business continuity planning, is an essential component of risk management. The fundamental premise of Contingency Planning (CP) is that, because no risk can ever be completely eliminated in practice, residual risks always exist. Incidents will occur despite the organization's best efforts to avoid, prevent, or mitigate them. Particular circumstances, combinations of adverse events, or unexpected threats and vulnerabilities may combine to circumvent or overwhelm even the best information security controls designed to ensure the confidentiality, integrity, and availability of information assets.

CP is defined in the context of this study as the totality of activities, controls, processes, plans, and so on relating to major incidents and disasters. It is the act of preparing for major incidents and disasters, developing flexible plans, and mobilizing appropriate resources that will come into play in the event of whatever happens. The term "contingency" implies that the activities and resources that will be required in the aftermath of major incidents or disasters are contingent (depend) on the specific nature of the incidents and disasters that occur. In this sense, CP entails planning for the unexpected as well as preparing for the unknown. The primary goal of CP is to reduce the negative consequences or impacts of incidents and disasters. This theory is germane to the insurance industry which, itself, is a risk-based business. All hands must therefore be on deck to plan for, and reduce, the negative consequences of the unexpected.

Empirical Review

Various studies have been done on the subject and one of them investigated the relationship between firm specific factors and macroeconomics on profitability in Taiwanese property-liability insurance industry using the panel data over the 1999 through 2017 time period. The study also used operating ratio and Return on equity (ROE) for the two kinds of profitability indicators to measure insurers profitability. The results showed that underwriting risk, reinsurance usage, input cost, return on investment (ROI) and financial holding group have significant influence on profitability in both operating ratio and ROE models. The insurance subsidiaries of financial holding group compared with other insurance companies, showing lower profitability (Lee, 2017). Also a study conducted in Nigeria to investigate the determinants of profitability in insurance companies using a panel data set consisting of financial data of nine insurers over the period of 2015 to 2020 found that insurers' size, tangibility and leverage are statistically significant and positively related with return on total asset; however, loss ratio (risk) is statistically significant and negatively related with ROE. Thus, insurer size, Loss ratio (risk), tangibility and leverage are important determinants of profitability of insurance companies in Nigeria. But, growth in writing premium, insurer's age and liquidity have statistically insignificant relationship with ROE (Eze, & Victor, 2013).

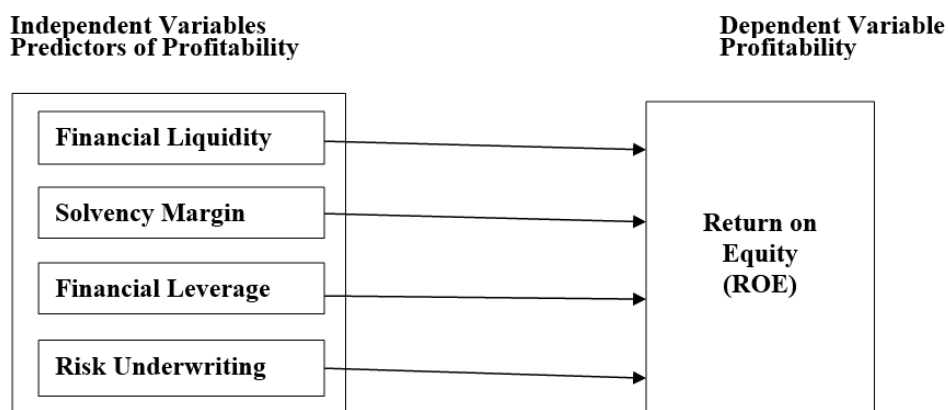
A study to examine the impact of insurance practice on the growth of Nigerian economy using insurance premium income, total insurance investment and income of insurance development as determinants of insurance practice. The study observed that the insurance premium has significantly impacted on economic growth in Nigeria and that there is causal relationship between insurance sector development and economic growth in Nigeria (Muhaizam, 2013). The Determinants of Profitability: The Case of General Takaful and Insurance Companies in Malaysia using panel data over the period of 2004 to 2007, using investment yield as the profitability measure. This measure is related to a number of economic and firm specific variables, which are the profit/interest rate levels, equity returns, size of company, reinsurance dependence, solvency margin, liquidity, and contribution/premium growth, chosen based on relevant theory and literature. Based on the empirical results, this study found that size of the company, reinsurance dependence and solvency margin are statistically significant determinants of the investment profitability of the general Islamic insurance companies in Malaysia. For conventional insurance, all factors are statistically significant determinants of investment profitability, except for equity returns (Eric, Samuel & Victor, 2013).

A research on determinants of profitability of insurance firms in Nigeria using secondary data from financial reports were collected from sixteen insurance firms in Nigeria for the period 2015 to 2020. The study was quantitative in nature and adopted the longitudinal time dimension, specifically, the panel method and ordinary least square regression. The study discovered that, apart from tangibility which has a negative relationship, there was a positive relationship between leverage, liquidity and profitability of insurance firms in Nigeria. It was also concluded that, the profitability model adopted has been explained in respect to all the independent variables and that the degree of error is less than 20%. The model used for this study was statistically fit as the result of the study presents variations in r square as 81%. The result of the study was also sound as the Multicollinearity of the data was checked (Waqas, Imran, Hafiz, Jawad & Zahid, 2013).

Conceptual Model

The relationship between the independent variables (financial leverage, solvency margin, financial liquidity and risk underwriting) and the dependent variables of profitability of insurance companies is shown below:

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SOURCE: Researcher's View (2022)

METHODOLOGY

Research Design

The descriptive research design was used in this study. This type of research is conducted after the events have occurred and the data is already available (Madhani, 2010). Moreover, because the situation has already occurred, the researcher has no control over or manipulation of the variables and thus cannot therefore be subjected to any form of manipulation. This method provides the study with data that was used to draw conclusions about the predictors of listed insurance profitability in Nigeria. This study employs an analytical survey design to collect data from insurance companies in Nigeria and, more specifically, to investigate the relationship between various variables in the sample group. It is important to note that, survey research design is a very valuable tool for assessing opinions and trends.

Population of the Study

The target population of this study is the thirteen (N=13) composite insurers in the industry as at 31st December, 2020.

Sample and Sample Size Determination

The study employed only six (6) selected composite insurance firms in Nigeria. These insurance companies have their headquarters in Lagos where adequate and relevant statistics about their operations can be obtained. Also, these composite insurance firms in the industry have complete 10 years audited financial statements from period 2011 to 2020. These, being 53.85% of the currently composite insurance companies in Nigeria, are considered representative of the remaining general insurance companies in the country.

Data Collection Method

For purpose of this study, secondary source of data were the composite insurers report of financial statements obtained through the Nigerian Insurers Association digest between the periods of 2011 -2020.

Model Specification

Based on the reviewing of both empirical and theoretical review, the following mathematical model is formed to show the predictors of profitability in insurance industry in Nigeria. This is as follows:

$$ROE = \beta_0 + \beta_1(L) + \beta_2(SM) + \beta_3(FLe) + \beta_4(R) + \text{rit}$$

Where:

FL = Financial Liquidity

SM = Solvency Margin

FLe = Financial Leverage

RU = Risk Underwriting

rit = is the error component for company *i* at time *t* assumed to have mean zero.

$\beta = 1, 2, 3, 4$ are the slopes of the coefficient or parameters that will be estimated

Presentation and Analysis of Result

This aspect deals with the presentation and analysis of the data collected. To test the hypotheses of this study, a multiple regression model is used. This is deemed as suitable due to the nature of the variables which are continuous rather than dichotomous categorical variables. The table that follows contains the data extracted from the selected Nigerian Insurance Companies' Annual Reports which is used in running the regression and obtaining the results of the study. Multiple regressions

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have been used to estimate the relation between the independent variables of financial leverage, solvency margin, financial liquidity and risk underwriting and the dependent variable of Profitability (Return on equity). The technique of ordinary least square was used to estimate the regression coefficient in the model of the study.

Measurement of Variables

FL = Financial Liquidity = Current Asset / Current Liability

SM = Solvency Margin = Net Asset/ Net Written Premium

FLe = Financial Leverage = Total Liability / Total Assets

RU= Risk Underwriting = Claim Incurred / Premium Earned

ROE= Return on Equity = Income / Shareholder's fund

Table 1. Descriptive Statistics

		MEAN	MEDIAN	MAX	MIN	STD. DEV.
Financial Liquidity	LEADWAY	0.389567	0.3542	0.5162	0.2873	0.089277
	CORNERSTONE	0.4177	0.3879	0.6044	0.2794	0.096804
	LASACO	0.242289	0.2309	0.7535	-0.171	0.255038
	MUTUAL BENEFIT	0.272711	0.278	0.3788	0.198	0.060043
	PRESTIGE	0.654078	0.5401	1.2551	0.096	0.394659
Solvency Margin	SOVEREIGN TRUST	0.345956	0.3595	0.5149	0.1893	0.097134
	LEADWAY	2092296	1805888	3089539	1523430	510456.4
	CORNERSTONE	1251253	1251238	2198189	665654	539385.4
	LASACO	481811.9	513073	1246956	-36950	414153.2
	MUTUAL BENEFIT	1467216	1354066	2159465	1004168	408352.8
Margin	PRESTIGE	982617.1	1146571	1569158	155806	491397.7
	SOVEREIGN TRUST	1608221	1506511	2181184	920433	470921.6
	LEADWAY	5412219	5381915	6652101	4500457	758677.6
	CORNERSTONE	2890323	3298618	3637019	2085373	677055.5
Financial Leverage	LASACO	1775514	2057280	2381021	216120	806585.2
	MUTUAL BENEFIT	5365768	5283657	6579594	4448312	807307
	PRESTIGE	1668260	1623629	2963063	924893	641032.4
	SOVEREIGN TRUST	4685857	4465718	5950253	3620280	739627.4
	LEADWAY	2092296	1805888	3089539	1523430	510456.4
Risk Underwriting	CORNERSTONE	1251253	1251238	2198189	665654	539385.4
	LASACO	481811.9	513073	1246956	-36950	414153.2
	MUTUAL BENEFIT	1467216	1354066	2159465	1004168	408352.8
	PRESTIGE	982617.1	1146571	1569158	155806	491397.7
	SOVEREIGN TRUST	1608221	1506511	2181184	920433	470921.6
	LEADWAY	0.043822	0.0363	0.1348	-0.0223	0.048506

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Return On Equity	CORNERSTONE	0.0112	0.0535	0.0926	-0.1239	0.07982
	LASACO	0.025744	0.0242	0.0489	0.0095	0.013189
	MUTUAL BENEFIT	0.038811	0.0367	0.1549	-0.0839	0.060688
	PRESTIGE	0.028478	0.0325	0.0622	0.0012	0.018974
	SOVEREIGN TRUST	0.058489	0.0375	0.2076	0.0025	0.062131

Source: Author's computation, 2022 (Eview-9.0)

Table 1 presents the descriptive statistics of the data employed in this study. On ratio data, the minimum and maximum value for the sample of insurance companies considered shows -0.171 and 0.7535 with an average of 0.255038 and standard deviation of 0.255038 respectively. **Hypothesis 1:** The table shows that Prestige insurance plc in terms of Financial Liquidity has significant highest value of 0.654078 with Maximum value of 1.2551, followed by Leadway insurance plc with Financial Liquidity of 0.389567. However, the study shows that Sovereign Trust plc has a strength 0.345956 Financial Liquidity; Cornerstone Plc with 0.4177 and Mutual Benefit Plc has 0.272711 as well as LASACO Assurance Plc with 0.242289. This indicates that Prestige Insurance plc has significant strength in financial Liquidity in the industry.

Hypothesis 2: Also on Solvency Margin, the figure above shows that LEADWAY Insurance Plc shows 2092296 with deviation of 510456.4 followed by Sovereign Trust Plc with Solvency Margin mean value of 1608221 and standard deviation of 470921.6. The Solvency Margin mean value maintains by Cornerstone Insurance shows 1251253 which deviate with 539385.4. However, LASACO Assurance plc with Solvency Margin mean value of 481811.9 with deviates with 414153.2. Prestige insurance plc maintains 982617.1 with standard deviation of 491397.7 and LASACO Assurance Plc with 481811.9 and deviation of 414153.2, while Mutual Benefit plc has the lowest mean value of 1467216 with standard deviation of 408352.8 in the distribution. This evidence shows that LEADWAY Insurance Plc is one of the leading insurance companies in Nigeria.

Hypothesis 3: Furthermore, the values obtained on financial Leverage shows that LEADWAY Insurance Plc has the highest financial Leverage mean value of 5412219 with deviation of 758677.6 followed by Mutual Benefit plc with financial Leverage mean value of 5365768 and standard deviation of 807307. The financial Leverage mean value maintains by Sovereign Trust shows 4685857 which deviate with 739627.4. However, Cornerstone Insurance plc with financial Leverage mean value of 2890323 with deviates with 677055.5. Prestige Insurance Plc maintains 1668260 with standard deviation of 641032.4 while LASACO Assurance Plc has the lowest mean value of 1775514 with standard deviation of 806585.2 in the distribution. This evidence shows that LEADWAY Insurance Plc is one of the leading insurance companies in Nigeria.

Hypothesis 4: On risk underwriting, the figure above shows that LEADWAY Insurance Plc shows 2092296 with deviation of 510456.4 followed by Sovereign Trust Plc with risk underwriting mean value of 1608221 and standard deviation of 470921.6. The risk underwriting mean value maintains by Cornerstone Insurance shows 1251253 which deviate with 539385.4. However, LASACO Assurance plc with risk underwriting mean value of 481811.9 with deviates with 414153.2. Prestige insurance plc maintains 982617.1 with standard deviation of 491397.7 and LASACO Assurance Plc with 481811.9 and deviation of 414153.2, while Mutual Benefit plc has the lowest mean value of 1467216 with standard deviation of 408352.8 in the distribution. This evidence shows that LEADWAY Insurance Plc is one of the leading insurance companies in Nigeria. Furthermore, the values obtained on risk underwriting shows that LEADWAY Insurance Plc has the highest risk underwriting mean value of 5412219 with deviation of 758677.6 followed by Mutual Benefit plc with risk underwriting mean value of 5365768 and standard deviation of 807307. The risk underwriting mean value maintains by Sovereign Trust shows 4685857 which deviate with 739627.4. However, Cornerstone Insurance plc with risk underwriting mean value of 2890323 with deviates with 677055.5. Prestige Insurance Plc maintains 1668260 with standard deviation of 641032.4 while LASACO Assurance Plc has the lowest mean value of 1775514 with standard deviation of 806585.2 in the distribution. This evidence shows that LEADWAY Insurance Plc is one of the leading insurance companies in Nigeria.

Finally, the measure of profitability using ROE data shows that SOVEREIGN TRUST plc has the highest ROE with mean value of 0.058489 followed by LEADWAY Insurance Plc with 0.043822. Mutual Benefit plc covers 0.038811 and PRESTIGE insurance has ROE of 0.028478. LASACO Assurance Plc with 0.025744 while Cornerstone plc has the lowest mean value on ROE: 0.0112 in the

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distribution. This is evident that SOVEREIGN TRUST plc and LEADWAY Insurance Plc are the leaders in the Nigerian Insurance industry for the last nine years.

DIAGNOSTIC TEST

Unit Root Test

It has been demonstrated that if time series variables are non-stationary, regression results in these time series will lead to spurious and misleading conclusions. To get over this problem, the researcher tested for stationarity of the time series. Augmented Dickey Fuller (ADF) test is used to investigate whether variables used in this study have a unit root or not. The results of the unit root test are presented below.

Table 2. Unit Root Test

Variable	Level (P-VALUE)	First Difference (P-VALUE)	5% Critical value	Order of Integration
ROE	0.9963	0.9655	0.05	I(0)
FL	0.9246	0.7182	0.05	I(0)
SM	0.9966	0.8976	0.05	I(0)
RU	0.8578	0.5384	0.05	I(0)
FLe	0.9462	0.7844	0.05	I(0)

Source: Author's computation, 2021 (Eview-9.0)

Figure 4.2: Unit Root

It can be seen from Table 2 that all variables are non-stationary at level. This is because their P-value of Augmented Dickey Fuller (ADF) is greater than significance value. Therefore, financial liquidity, solvency margin, risk underwriting and financial leverage are non-stationary at level and at first different as the p-value is less than McKinnon 5% critical value respectively. This result shows that all variables are integrated of order one.

Co-integration Test

In this study, the co-integration test for the variables in the models was carried out, using Johansen's test of co-integration. The result of co-integration for the variables is shown in table 3 below. The result shows that there exists four co-integrating equation at 5% level of significance. This result indicates that there is a long run relationship between the dependent and all the independent variables used in both models. Thus, error correction model can be estimated for the models.

Table 3. Co-integration test result for variables used in the two models Unrestricted Cointegration Rank Test (Trace)

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.*
None	0.340647	1.346079	-3.320969	0.9963
At most 1	0.880307	0.384333	-3.320969	0.7844
At most 2	0.134700	3.178539	-3.403313	0.3578

Source: Author's computation, 2022 (Eview-9.0)

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

Interpretation of Model Results

The results of the regression analyses are presented in this section. The results are analyzed one after the others beginning with the result of model one.

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Table 4: Estimation Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FL	-3.342139	2.573258	-1.298797	0.2507
SM	0.446500	0.404003	1.105190	0.3114
RU	0.413724	0.434136	0.952984	0.3844
FLe	0.46300	0.404303	2.90519	0.1515
R^2	0.724604	Adjusted R-squared		0.7004
F-statistic	44.72934			
Prob (F-statistic)	0.000000			

Source: Author's computation, 2022 (Eview-9.0)

Model Estimation and Interpretation

Re-stating the regression model:

$$ROE = \beta_0 + \beta_1(L) + \beta_2(SM) + \beta_3(FLe) + \beta_4(R)$$

The fitted multiple linear regression model form is;

$$ROE = 0.724604 + -3.342139\beta_1 + (0.446500)\beta_2 + 0.46300\beta_3 + 0.413724\beta_4$$

From the result in Table 4, the fitted regression model indicate that the positive relationship between the dependent (ROE) and explanatory variables Financial Leverage, Solvency Margin and Financial Liquidity. Thus the β_0 is 0.724604 indicates that if all explanatory variables: financial leverage, solvency margin and Financial Liquidity are zero the ROE will be 0.724604 which is constant. The β_1 indicates that for every one unit change in the dependent variable (ROE) the financial liquidity will decrease by -3.342139 and β_2 shows that for every one unit change in the dependent variable (ROE) the independent variables Solvency Margin will increase by 0.446500. And β_3 shows that for every one unit change in the dependent variable (ROE) the independent variables Financial Leverage will increase by 0.46300 as well as β_4 shows that for every one unit change in the dependent variable (ROE) the independent variables risk underwriting will increase by 0.413724.

The R^2 (R-squared) approximately 72.5%, and this shows a very good fit, meaning that there is a strong relationship between the variables used. Thus, it shows that 72.5 percent (72.5%) Changes or variation in ROE is explained by Financial Leverage, Solvency Margin and Financial Liquidity leaving 27.5 percent (27.5%) changes or variations in ROE to the (white noise) error term. The goodness of fit result thus shows that there is a strong positive relationship between financial leverage, solvency margin, financial liquidity and risk underwriting and the profitability Insurance Companies in Nigeria.

Adjusted R^2 shows actual variations in ROE captured by the independent variables introduced in the model after taking into considerations effect of additional explanatory variables on R^2 . The adjusted R^2 , due to data transformation, still explains about 70% of the total variations.

The F-statistics which measures the overall significance of the model shows that the model is statistically significant and as such the study states that Financial Leverage, Solvency Margin, Financial Liquidity and risk underwriting have significant effect on Profitability of Listed Nigerian Insurance Companies. From the above result it was observed that all the variables measured have positive effect on ROE.

CONCLUSION AND RECOMMENDATIONS

The overall result of this study improves the understanding of determinants of insurance companies in Nigeria by providing useful information to insurance companies, investors, regulators and supervisory authorities. The variables used to investigate the predictors of insurance company's profitability in Nigeria are similar to those used in other developing and developed countries as predicted by existing theories of profitability. The findings of the study established the statistical significance relationship between the four independents variables (financial liquidity, solvency margin, risk underwriting and financial leverage) and the dependent variable, profitability, respectively. In the study, descriptive research design was employed with the population of thirteen (N=13) composite insurers from which a sample of six (n=6) were randomly selected. Four hypotheses were tested using e-view. Findings showed that SOVEREIGN TRUST plc has the highest ROE with mean value of 0.058489 followed by LEADWAY Insurance Plc with 0.043822 mean value on ROE. Mutual Benefit plc covers 0.038811 and PRESTIGE insurance has ROE of 0.028478. LASACO Assurance Plc with 0.025744 while Cornerstone plc has the lowest mean value on ROE:

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0.0112 in the distribution. Thus it is evident that SOVEREIGN TRUST plc and LEADWAY Insurance Plc are the leaders in the Nigerian Insurance industry for the period, with positive effect of financial leverage, solvency margin, financial liquidity and risk underwriting on profitability of the insurance companies in Nigeria. The study therefore concluded that there is statistically significant relationship between the four independent variables (financial liquidity, solvency margin, risk underwriting and financial leverage) on the dependent variable, profitability, proxied by return on equity of insurance companies in Nigeria. Based on the findings of the study, it can be concluded that all the independent variables that have been considered during the analysis have significant positive effect on profitability of the selected insurance companies and are therefore major predictors of profitability in the Nigerian insurance industry.

RECOMMENDATIONS

The study recommended that stakeholders in the Nigerian insurance industry in collaboration with their regulatory body; National Insurance Commission (NAICOM), should maximize the contributions of the various predictors (financial leverage, solvency margin, financial liquidity and risk underwriting) to Profitability of insurance industry in Nigeria.

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