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Capital Adequacy and the Financial Performance of Insurance Companies: The Nigeria Experience

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Abstract
The study examined capital adequacy on the financial performance of insurance firms, with a specific focus on the Nigerian insurance sector. The study adopted an ex-post facto research design, usinga 15-year (2007 – 2021) time series secondary data. The sample consisted of nine insurance companies using purposive sampling to ensure a cross-representation of different tiers within the industry. This study explored key variables: capital adequacy and insurers' performance. Capital adequacy (CA) is measured using shareholders' funds, and insurance companies' performance is measured using the return on asset (ROA), return on equity (ROE), claims ratio (CR), profitability ratio (PR), and turnover ratio (TR).Shareholders' funds were calculated as the sum of issued share capital, retained earnings, and reserves as reported in the companies' financial statements. The data was analysed using descriptive statistics, correlation, and regression to unveil the relationship between capital adequacy and the financial performance of insurance companies. The findings revealed a positive significant correlation between capital bases and financial performance, indicating that companies with strongcapital basewill generate higher premium income, leading to increased profitability. This implies that insurance companies with adequate capital reserves are better positioned to achieve improved returns and increased premium income to settle claims promptly.

Keywords: *Capital adequacy, financial performance, Profitability, Insurance, Insurance companies, Nigeria*

Background of the Study

Risk management is a system module for insurance companies to maintain their financial performance, with capital adequacy as a pivotal element in this intricate relationship. The regulatory framework helps to ensure the stability and strength of insurance companies. Ashraf et al. (2020) posited that there is an undeniable connection between capital adequacy and good performance. Junreomvong et al. (2018) corroborated the view by demonstrating a direct correlation between capital adequacy and performance in various organisations. Hence, there is a need for a regulatory framework that helps ensure insurance companies' stability and strength to determine profit.

Profitability is a key factor that attracts potential investors to a business, making financial performance essential in enticing investments. Khakimovna (2024) views profitability as an important factor in attracting investment. Capital is necessary for firms to achieve their investment objectives (Mayer, 2021). Also, it essential to maintain financial stability and security (Chen et al., 2021). Capital plays a vital role in the functioning of organisations, as it can either hinder or enhance the achievement of set goals. Peterson and Wu (2021) posited that business managers need financial foresight, as growth often requires additional capital injection methods such as right issues, equity, or debt financing.
Financial performance entails generating revenue by utilising the firm's assets. It is crucial to compare and contrast the financial results with those of similar firms to measure organisational performance effectively (Cindiyasari et al., 2022; Gupta et al., 2022; Silwimba& Fadun, 2022). Nigerian insurance companies encounter significant challenges

such as market competition, regulatory compliance, and economic uncertainties (Fadun, 2023; Mwongela, 2022). To navigate these challenges successfully, insurers must adopt innovative risk management strategies, particularly in capital adequacy risk management, such as the capital asset pricing model (CAPM) and modern portfolio theory (MPT). These strategies provide valuable insights for optimising capital allocation and enhancing financial performance.

The financial performance of insurance companies in developing countries like Nigeria is intricately tied to the effective management of capital adequacy risks (Fadun & Silwimba, 2023; Oloke, 2023). Understanding the regulatory framework, theoretical foundations, empirical evidence, and innovative approaches is essential in shaping the narrative of financial stability and optimal performance in the Nigerian insurance industry. As the industry evolves, fully comprehending capital adequacy risk dynamics is vital for sustaining optimal performance and fostering financial stability.

Addressing the challenges associated with studying financial performance through capital adequacy risks requires using sophisticated methodologies to unravel the complexities of the insurance sector, adapt to changing regulatory environments, and overcome data-related obstacles. Thus, the paper provides a framework for the role of capital adequacy in the financial performance of insurance companies. Consequently, the study explores the correlation between capital adequacy and the financial performance of insurance firms. Hence, this study examines the connection between capital adequacy and insurance companies' turnover or premium income. Therefore, this study highlights the importance of capital adequacy in the financial performance of insurance companies. This study justifies the need for insurance companies to have solid capital adequacy. It also provides valuable insights into the insurance companies' risk management strategies. Ultimately, this study analyses the relationships between capital adequacy and the turnover of insurance companies and contributes to the existing body of knowledge in this area.

Literature Review

Relevant literature is reviewed in this section.

Capital Adequacy and Capital Adequacy Risk

Capital adequacy is a firm's (including an insurance company) ability to absorb losses and meet its obligations without becoming insolvent (Si et al., 2023; Chen et al., 2021; Ashraf et al., 2020). Capital adequacy risk entails the discrepancy between the perceived values of long-term assets funded by short-term, regulated-rate loans, resulting in a cash flow deficit when interest rates increase (Abass & Olubusade, 2023; Malovana et al., 2023; Mazikana, 2023).The capital adequacy ratio (CAR) indicates how well a bank can meet its obligations. Also known as the capital-to-risk weighted assets ratio (CRAR), the ratio compares capital to risk-weighted assets and is watched by regulators to determine a bank's risk of failure (Msomi&Nzama, 2023; Mutumira, 2018; Ngugi& Afande, 2015). This study views capital adequacy risk as the potential loss of a portion or entire investment performance, as indicated by Msomi and Nzama (2023).

Insurance companies must analyse their capital adequacy by assessing their capital base, which is crucial for their operations. Insurance companies need sufficient capital to meet their liabilities for their accepted or underwritten business. Two main aspects indicate capital adequacy. Firstly, the extent of business support is measured by the premiums collected. This is important because the insurer becomes liable for the coverage if a claim occurs. Secondly, the extent of asset backing is significant as insurers need to have enough assets to meet their

liabilities as they arise. Therefore, capital adequacy is a primary indicator of an insurance company's financial stability and strength. The financial stability of an insurance company is heavily reliant on its capital adequacy, which serves as a crucial indicator (Kimani,2023). Consequently, an insurance company must have a substantial capital base to handle claims when they arise (Syafrizal et al., 2023; Bala et al., 2022) effectively.

Financial Performance

Performance encompasses the specific outcomes achieved in various fields, reflecting the organisation's competitiveness, efficiency, and effectiveness, as well as its procedural and structural aspects (Ahmed et al., 2023; Utami, 2023).Gyamera et al. (2023) defined financial performance as the ability of an enterprise to maximise returns from its operations. Financial performance is the extent to which financial objectives are achieved (Setiawan&Ekadjaja, 2023; Dewi& Mustanda, 2021). It is a metric to assess a company's financial well-being within a specific timeframe (Utami, 2023). Financial performance can also facilitate comparisons between similar firms within the same industry or across different industries or units (Ahmed et al., 2023; Dewi& Mustanda, 2021).

A firm with good financial performance effectively generates revenue by efficiently utilising available resources (Thuy, 2023; Akenroye et al., 2022; Mamaro& Legotlo, 2021). A firm with sound financial management has a better capacity for profitability (Utami, 2023; Akenroye et al., 2022). Financial performance entails evaluating a firm's overall financial health within a specific time frame through monetary engagements (Fadun & Silwimba, 2023; Jaf & Rashid, 2023). Profit-oriented businesses must prioritise financial performance as a goal, as failure to do so can have detrimental consequences. Profitability is often used as a standard measure to assess the monetary outcome. In this study, financial performance is viewed based on the return on equity (ROE), calculated by dividing earnings after interest and taxes (EIT) by the total shareholder equity among risk-management firms. This study explores financial performance indicators as a dependent variable to examine the relationship with other variables in the study.

Premium and claim settlement are vital factors influencing the financial performance of insurance companies (Fadun et al., 2024; Fadun et al., 2023). Premium is an amount paid periodically to the insurer by the insured to cover his risk. In an insurance contract, the risk is transferred from the insured to the insurer in exchange for premium payment by the insured. To take this risk, the insurer charges an amount called the premium. Premium income can refer to the proceeds an investor earns from writing (selling) options contracts or the revenue an insurer earns from payments from policyholders (Fadun et al., 2023). In either case, premium income originates from insurance protection to the insurer buyers, the insureds.An insurance claim is a formal request to your insurance provider for reimbursement against losses covered under your insurance policy. Insurance is a financial agreement between you and your insurer. You have to pay a fixed premium (Fadun, 2023). Insurance companies reinsure their liability under the primary insurance contracts to ensure the spread of risk and ease claim settlement (Fadun, 2023). This study's theoretical model is presented in Figure 1.

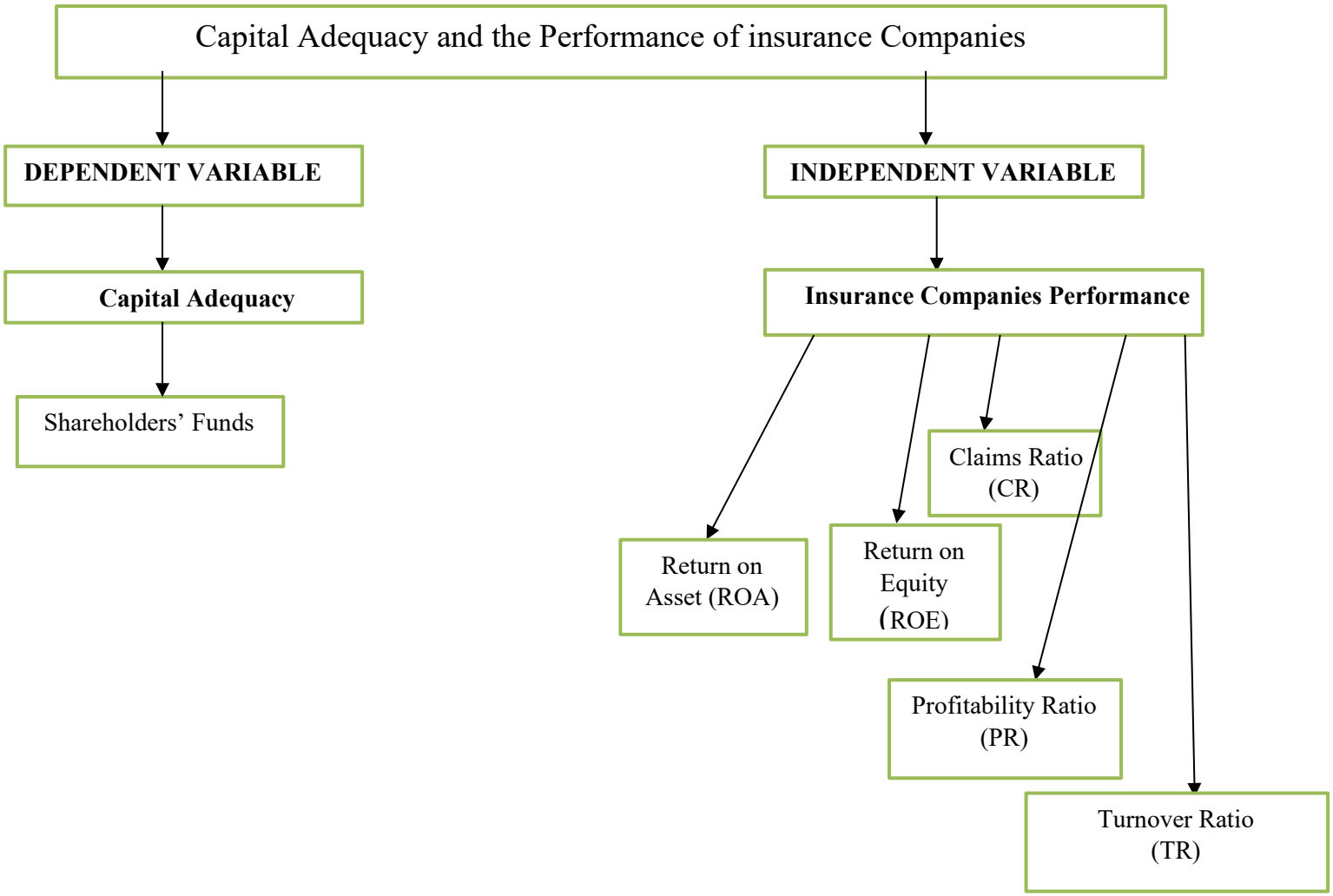

Figure 1:The Study Theoretical Model (2023)

The study examined the impact of capital adequacy on insurance companies' financial performance. Ebere and Onuoha (2022) identified several areas within typical insurance companies ripe for transformation through a conceptual research framework, such as manual processes, client retention, underwriter effectiveness, client service responsiveness, and claims processing times. Muchiri and Njoka (2021) explored the relationship between monetary risk and the financial success of Kenyan insurance companies. Using secondary data, the findings revealed a correlation between monetary risk and the financial performance of Kenyan insurance companies (Muchiri & Njoka, 2021). The financial performance of the companies was assessed using return on assets (ROA) as a measure of monetary achievement (Muchiri & Njoka, 2021).

Theoretical Framework

Various theories are aligned with the impact of capital adequacy and financial performance, including the theory of economic efficiency. This study evaluates the relevant theory to capital adequacy and financial performance. The theory of economic efficiency, rooted in neoclassical microeconomic theory, is adopted for this study (Van, 2022; Solow, 1956). Economic efficiency suits this study because the theory emphasises the need for an organisation to reduce costs and increase revenue (Petrou, 2014). Moreover, the theory of economic efficiency advocates that the efficiency levels in capital adequacy risk within an insurance firm can be attributed to various factors (Van, 2022; Petrou, 2014; Solow, 1956). Furthermore, these factors encompass elements inherent in the internal structure of capital adequacy risk, which directly impacts the financial performance of the insurance firm (Kamuka, Kanga & Mungule, 2023; Morara& Bongani, 2021). Such elements include the managerial staff's expertise, the workers' experience, and the skill levels exhibited within the organisation (Rasyid, 2023; Kiptoo et al., 2021; Ishtiaq & Siddiqui, 2019). This theory emphasises the efficient allocation and utilisation of resources, aiming to minimise wastage and reduce costs while maximising output. A firm can gain a competitive advantage over its less efficient rivals in the same industry by creating value through economic efficiency.

Economic efficiency theory suggests that maintaining an excessive amount of capital can decrease the risks faced by an entity (Van, 2022; Petrou, 2014; Solow, 1956). Thus, highlighted the need for a firm to have a high capital buffer can enhance a firm’s performance and resilience (Van, 2022; Petrou, 2014; Solow, 1956). Economic efficiency theory, also known as Capital buffering theory, has proven effective in ensuring uninterrupted operations for financial institutions, particularly when subjected to well-regulated regimes (Van, 2022; Petrou, 2014; Solow, 1956). Hence, the concept of capital buffer is evident in the performance of financial institutions, including banks and insurance firms. This view was developed by Akpanetal (2017) and Chepkilot (2019). In the context of the current study, capital adequacy plays a crucial role in determining the financial performance of insurance companies in Nigeria.

Methodology

This study uses a descriptive research design to collect secondary data to explore and interpret the current situation. It examines the role of capital adequacy in Nigeria's insurance companies' performance. The data was analysed using E-view 12.0. Fifteen years (2007 - 2021) of time-series data sourced from the Nigeria Stock Exchange Database, the Nigerian Insurers Association (NIA), and financial statements of the selected insurance companies, including NEM Insurance Plc, NEM Insurance Plc, Consolidated Hallmark Insurance Plc, Royal Exchange General Insurance, Mutual Benefits Assurance, Guinea Insurance Plc,

Leadway Assurance Company Limited, AXA Mansard Plc, AIICO Insurance Plc and Cornerstone Insurance Plc.

This study explored key variables (capital adequacy and insurers' performance), and nominal variables were used to measure the variables. Capital adequacy is the dependent variable, while insurance companies' performance is the independent variable. Capital adequacy is measured using insurers' equity (EQ). The aggregate difference between assets and liabilities is equity, which is the net residual ownership of business owners. Insurance companies' performance is measured using the return on asset (ROA), return on equity (ROE), claims ratio (CR), profitability ratio (PR), and turnover ratio (TR). Shareholders' funds were calculated as the sum of issued share capital, retained earnings, and reserves as reported in the companies' financial statements.

The data was analysed using Pearson's product-moment correlation and logistic regression analysis. Regression analysis was undertaken to determine the relationship between dependent and independent variables. The understated multiple linear regression model was developed for this study:

Financial Performance (Y) = $\alpha_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + e$……..

Where β_1, β_2, β_3, β_4, β_5 = represents the coefficients for the independent variables.

α_0 = represents the intercept for X variable of capital adequacy.

$CA = \beta_o + \beta_1 CR + \beta_2 PR + \beta_3 TR + \beta_4 ROA + \beta_5 ROE + e$

Where:

CA represents insurance companies' capital adequacy, measured using shareholders' fund

α is the intercept between the dependent and independent variables

β_1, β_2, β_3, $\beta 4$, and $\beta_5$are regression coefficients for the independent variables

CR is the Claims Ratio

PR is the Profitability Ratio

TR is the Turnover Ratio

ROA is Return on Assets

ROE is Return on Equity

ε is the Error Term

Data Analysis

The data collected was analysed using E-views 12.0, and the descriptive statistics are presented in Table 1.

Table 1: Descriptive Statistics

	CA	CR	PR	TR	ROA	ROE
Mean	6.890886	-0.301963	0.091233	0.278101	0.027610	0.022334
Median	6.871104	-0.319100	0.103700	0.250300	0.024300	0.020491
Maximum	7.906621	0.586100	2.368300	1.191200	0.220500	0.278578
Minimum	6.210510	-1.300800	-3.761800	0.000000	-0.200900	-0.271577
Std. Dev.	0.342337	0.323566	0.436646	0.228391	0.056624	0.045667
Skewness	0.412049	-0.349675	-4.052435	1.690933	-0.135826	-0.661870
Kurtosis	3.125871	3.404503	51.46610	6.872873	5.761408	21.34746
Jarque-Bera	3.909271	3.671512	13582.42	148.7034	43.30783	1903.397
Probability	0.141616	0.159493	0.000000	0.000000	0.000000	0.000000
Sum	930.2696	-40.76500	12.31640	37.54370	3.727300	3.015023
Sum Sq. Dev.	15.70411	14.02912	25.54843	6.989795	0.429647	0.279455
Observations	135	135	135	135	135	135

Source: Researchers' Computation using E-views12.0 (2024)

Table 1 shows that the median of Capital Adequacy (CA) is 6.89, Claims Ratio (CR) is -0.30, Profitability Ratio (PR) is 0.09, Turnover Ratio (TR) is 0.28, Return on Assets (ROA) is 0.03, and Return on Equity (ROE) is 0.02. Mean is the average of the data, which was calculated by dividing the sum of the data by the total number. CA has the highest mean (6.89), followed by TR (0.28), PR (0.09), ROA (0.03) and CR (-0.03). However, the mean of CA, TR, PR and ROA are positive, while that of CR is negative.

Table 1 shows that the mean of Capital Adequacy (CA) is 6.87, Claims Ratio (CR) is -0.32, Profitability Ratio (PR) is 0.10, Turnover Ratio (TR) is 0.25, Return on Assets (ROA) is 0.02, and Return on Equity (ROE) is 0.02. A median is the centre value of data when arranged in an order.CA has the highest median (6.87), followed by TR (0.25), PR (0.10), ROA (0.02) and CR (-0.32). The CA, TR, PR and ROA median are positive, while that of CR is negative.

Table 1 shows that the maximum and minimum of Capital Adequacy (CA) are 7.9 and 6.2, Claims Ratio (CR) are0.59 and -1.30, Profitability Ratio (PR) are 2.37 and -3.76, Turnover Ratio (TR) is 1.19 and 0.0, Return on Assets (ROA) are 0.22 and -0.20, and Return on Equity (ROE) are 0.28 and -0.27.

Regarding CA, the results suggest a relatively stable capital adequacy among the sampled insurance companies (Table 1).The distribution of CA appears to be slightly positively skewed (0.41), with a leptokurtic shape (Kurtosis of 3.13), indicating heavier tails and sharper peaks than a normal distribution. The Jarque-Bera test further suggests a departure from normality, with a p-value greater than 0.05.

The Claims Ratio (CR) results revealed that the distribution seems symmetrical, with skewness close to zero, but the kurtosis indicates a leptokurtic distribution (Table 1). The Jarque-Bera test results of CA also suggest non-normality. The PR distribution exhibits significant negative skewness (-4.05) and very high kurtosis (51.47), indicating a heavily left-skewed distribution with heavy tails (Table 1). This departure of PR from normality is supported by the Jarque-Bera test, which yields a very low p-value.

The ROA distribution appears moderately skewed and leptokurtic, as indicated by the skewness and kurtosis values (Table 1). Its Jarque-Bera test also again suggests a departure from normality. For ROE, it is slightly negative skewness (-0.66) and very high kurtosis (21.35), indicating a heavily right-skewed distribution with heavy tails(Table 1). The ROE Jarque-Bera test confirms the departure from normality observed in other variables. However, the TR distribution exhibits significant positive skewness (1.69) and high kurtosis (6.87), indicating a heavily right-skewed distribution with heavy tails (Table 1). The TR Jarque-Bera test also suggests a departure from normality.

Table 2: Correlation Analysis Results

Covariance Analysis: Ordinary
Date: 03/13/24 Time: 21:50
Sample: 1 135
Included observations: 135

Correlation	CA	CR	PR	TR	ROA	ROE
CA	1.000000					
CR	-0.467970	1.000000				
PR	0.040843	-0.016725	1.000000			
TR	-0.104891	0.140423	0.017914	1.000000		
ROA	0.151641	0.113701	0.513208	0.360677	1.000000	
ROE	0.269213	0.050302	0.362203	0.166958	0.802217	1.000000

Source: Researchers' Computation using E-view(2024)

The correlation analysis results (Table 2) indicate a moderate negative relationship between capital adequacy and claims ratio. This suggests that as insurance companies maintain more robust capital bases, they tend to experience lower claims ratios, indicating their ability to handle claims efficiently. However, the correlation between capital adequacy and profitability ratio is weak, implying that while capital adequacy is vital for financial stability, it may not directly translate into higher profitability for insurance companies. This highlights the complex interplay of various factors beyond capital adequacy that influence profitability in the insurance sector.

Furthermore, the analysis indicates a slight positive correlation between capital adequacy and return on assets (ROA) and return on equity (ROE). While these correlations are present, they are relatively weak, suggesting that factors other than capital adequacy also significantly impact the returns generated by insurance companies on their assets and equity. Additionally, the relationship between capital adequacy and turnover ratio is weakly negative, indicating that as capital adequacy increases, there may be a slight decrease in turnover ratio. However, this correlation is not very strong, suggesting that factors beyond capital adequacy, such as market dynamics and operational efficiency influence the turnover ratio.

Table 3: Variable Unit root Test Result

The unit root test was conducted on various financial performance indicators of insurance companies, including capital adequacy (CA), claims ratio (CR), profitability ratio (PR), return on assets (ROA), return on equity (ROE), and turnover ratio (TR). The results of the test revealed that all variables, except for the turnover ratio (TR), exhibited stationarity, as evidenced by the rejection of the null hypothesis of a unit root. This implies that variables such as CA, CR, PR, ROA, and ROE do not exhibit a trend or drift over time and are suitable for meaningful time series analysis without the interference of spurious correlations. However, the turnover ratio (TR) showed integration of order one [I(1)], indicating that it is not stationary in its original form and requires differencing to achieve stationarity. This suggests that the turnover ratio exhibits a trend or drift over time, which should be addressed through appropriate statistical methods to ensure the validity and reliability of subsequent analyses.

Table 4: Regression Analysis Results

Dependent Variable: CA
Method: Least Squares
Date: 03/13/24 Time: 21:27
Sample: 1 135
Included observations: 135

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.730195	0.049085	137.1142	0.0000
CR	-0.503518	0.078070	-6.449580	0.0000
PR	-0.079811	0.068780	-1.160368	0.2480
TR	-0.157590	0.123447	-1.276575	0.2040
ROA	0.289757	0.898609	0.322451	0.7476
ROE	2.317345	0.946593	2.448090	0.0157

R-squared	0.320070	Mean dependent var	6.890886
Adjusted R-squared	0.293716	S.D. dependent var	0.342337
S.E. of regression	0.287703	Akaike info criterion	0.389648
Sum squared resid	10.67769	Schwarz criterion	0.518771
Log likelihood	-20.30124	Hannan-Quinn criter.	0.442120
F-statistic	12.14509	Durbin-Watson stat	0.659531
Prob(F-statistic)	0.000000		

Source: Researchers' Computation using E-view(2024)

The regression analysis conducted in this study aimed to examine the relationship between capital adequacy and various performance indicators of insurance companies. The dependent variable, capital adequacy (CA), was regressed against several independent variables including Claims Ratio (CR), Profitability Ratio (PR), Turnover Ratio (TR), Return on Assets (ROA), and Return on Equity (ROE).

The results indicate several noteworthy findings. Firstly, the regression model's constant term (C) is 6.730195 with a standard error of 0.049085. This suggests that when all other independent variables are held constant, the expected value of capital adequacy is approximately 6.73. The t-statistic for this constant term is highly significant, indicating a strong relationship between the constant term and the dependent variable.

Moving on to the coefficients of the independent variables, it is observed that the Claims Ratio (CR) has a negative coefficient of -0.503518 with a significant t-statistic of -6.449580 (p-value < 0.001). This implies that capital adequacy tends to decrease as the claims ratio increases. Similarly, Return on Equity (ROE) shows a positive coefficient of 2.317345 with a significant t-statistic of 2.448090 (p-value = 0.0157), indicating that higher return on equity is associated with higher capital adequacy. Conversely, the Profitability Ratio (PR), Turnover Ratio (TR), and Return on Assets (ROA) do not show statistically significant relationships with capital adequacy. The coefficients for these variables are -0.079811, -0.157590, and 0.289757, respectively, with t-statistics and p-values indicating no significant impact on capital adequacy.

The overall explanatory power of the regression model, as indicated by the R-squared value, is 0.320070. This means that the independent variables included in the model can explain approximately 32% of the variance in capital adequacy. The adjusted R-squared, which considers the number of predictors in the model, is slightly lower at 0.293716.The F-statistic, which tests the overall significance of the regression model, is 12.14509 with a very low p-value (<0.001), indicating that the regression model as a whole is statistically significant in explaining the variation in capital adequacy.

The Hypothesis was tested using cointegration test, the results of the cointegration test suggest that there is evidence of cointegration among the variables considered in the analysis. The null hypothesis, which states that there are no cointegrating relationships (i.e., no common trends) among the variables, is rejected at all levels of significance. When considering the hypothesis of no cointegrating relationships (None), the corresponding eigenvalue is 0.293927, and the trace statistic is 134.4527. Comparing this to the critical value of 95.75366, the probability value is extremely low (p < 0.0000), indicating strong evidence against the null hypothesis. This implies that there are indeed cointegrating relationships present among the variables.The series considered for the cointegration analysis include capital adequacy (CA), claims ratio (CR), profitability ratio (PR), return on assets (ROA), return on equity (ROE), and turnover ratio (TR).Hence, the hypothesis shows a significant relationship between the capital adequacy risk and insurance companies' performance (turnover/premium income).

Discussion of Findings

The findings from the analysis offer valuable insights into the intricate relationship between capital adequacy and various performance indicators of insurance companies in Nigeria over 15 years. Exploring these findings in detail, it becomes evident that the negative coefficient (-0.503518) observed between capital adequacy and claims ratio (CR) underscores the significance of maintaining strong capital bases for insurers. This aligns with previous research by Samson and Mojekwu (2013), who highlighted that adequate capitalisation enables insurers to mitigate losses effectively, thus reducing their susceptibility to adverse events such as large claims payouts or catastrophic incidents. Moreover, this finding resonates with the assertion made by Abass and Olubusade (2023) regarding the pivotal role of capital adequacy in fostering trust and stability within the insurance industry.

Conversely, the positive coefficient (2.317345) between capital adequacy and return on equity (ROE) suggests a symbiotic relationship, indicating that higher capital adequacy is associated with increased returns on equity. This finding aligns with the capital buffer theory posited by Jokipi and Milne (2011), emphasising that well-capitalized insurers are more confident in pursuing profitable ventures, consequently contributing to improved

performance. Furthermore, the perception of a well-capitalised insurer as stable and creditworthy attracts investors and facilitates growth opportunities within the industry (Abass &Olubusade, 2023).

However, the analysis indicates no statistically significant relationships between capital adequacy and profitability ratio (PR), turnover ratio (TR), and return on assets (ROA). This underscores the complexity of factors influencing financial performance in the insurance sector beyond capital adequacy alone (Abass et al., 2021; Kaguri, 2012). It suggests that insurers must balance maintaining adequate capital reserves and optimising operational efficiency to maximise profitability and returns on investment.

The R-squared value of 0.320070 suggests that the independent variables in the model can explain approximately 32% of the variance in capital adequacy. This underscores the need for future research to explore additional variables, such as regulatory environment, market competition, and technological advancements, as proposed by Abass et al. (2021), to provide a comprehensive understanding of the factors shaping capital adequacy in insurance companies.
The implications of these findings are substantial for insurance companies and policymakers in Nigeria. Insurers should prioritise maintaining adequate capital reserves to enhance financial stability and resilience while also focusing on improving operational efficiency and investment strategies to maximise profitability. On the other hand, policymakers play a crucial role in ensuring a conducive regulatory environment that promotes both financial stability and industry efficiency(Abass & Olubusade, 2023). The findings underscore the multifaceted relationship between capital adequacy and financial performance indicators in the Nigerian insurance sector. While adequate capitalisation is essential for stability, it may not guarantee higher profitability alone. Insurers must adopt a holistic approach to risk management, encompassing capital adequacy, operational efficiency, and strategic decision-making, to thrive in the dynamic market landscape. Policymakers, meanwhile, must balance regulatory oversight with industry efficiency to foster sustainable growth and development within the sector.

Conclusion and Recommendations

The objectives of this study were to assess the role of capital adequacy on the financial performance of insurance companies. The e-view test, Pearson correlation method, and regression models were employed. A panel data approach was used with time series data from 2007 to 2021 covering nine (9) selected Nigeria insurance companies. The SCA model's hypothesis has been validated, confirming a positive correlation between capital adequacy and profitability, turnover, and claims settlement of insurance companies. The SCA model's aim has been validated, confirming a positive correlation between capital adequacy and profitability, turnover, and claims settlement of insurance companies.
The findings suggest that a strong capital base enables insurance companies to generate higher premium income and achieve better returns. This study emphasises the importance of maintaining adequate capital bases to enhance profitability and highlights the role of innovative risk management approaches in improving the performance of the insurance sector in Nigeria. Based on the findings, the following are recommended: Nigeria's insurance companies are enhancing their capital adequacy by conducting regular assessments, implementing dynamic capital allocation strategies, conducting stress testing, and proactively adapting to evolving regulatory standards.

The findings and research limitations imply several recommendations for future research. Firstly, future studies must delve into the critical analysis of the effects of capital adequacy on the performance of insurance companies in Nigeria. This entails conducting research with a more significant sample size representative of the entire population to ensure the generalisability of the results. Additionally, implementing new regulatory standards can enhance the insurance industry's resilience and ensure the long-term stability of credit supply, thereby supporting the economy's sustained growth. However, it is essential to note that stricter regulation may harm the efficiency of insurance companies, highlighting the trade-off between financial stability and efficiency that policymakers and insurance companies must navigate. Therefore, it is necessary to evaluate the influence of the capital adequacy risk ratio on the efficiency of insurance firms. Furthermore, future researchers can explore the existing gaps in the literature regarding the critical analysis of the impacts of capital adequacy risk management on the performance of insurance companies in Nigeria, both presently and in the future, and also delve deeper into the specific risk profiles of different insurance subsectors, allowing for tailored and suitable capital adequacy mechanisms. Investigations into the regulatory framework and incentives that promote the adoption of capital adequacy regulations would provide valuable insights.

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