

Capital Market Investment and Profitability of Insurance Companies in Nigeria: An Empirical Analysis from 1998 – 2024

Henry Chinedu Dim^{1*}; Okere Marcellinus Chinedu¹; Onuoha John Kingsley¹

¹*Department of Insurance, Imo State University, Owerri Nigeria.*

*Corresponding Author's Email: henry.dim@imsuonline.edu.ng

Abstract

The research investigates the effect of capital market investments on profitability of insurance companies for the period 1998-2024. The independent variables are: investment in government securities, stocks and bonds, real estate and mortgages, while the dependent variable is profitability measured using return on assets. The research makes use of secondary data obtained from the CBN statistical bulletin. The data are analyzed using econometric techniques: unit root test, cointegration test and Error Correction Model. The analysis indicates that investments in government securities, stocks and bonds have positive and significant relationships with insurance companies' profitability, while investments in real estate and mortgages did not significantly affect insurance profitability. The R-square indicates that a greater percentage of insurance profit is explained by the variables. The study concludes that insurance companies investments in government securities and stock/bonds have yielded improved profitability for the industry while their investments in real estate and mortgages did not have significant effect on their profitability. The implication of these findings is that prudent allocation of insurance funds across capital market instruments can enhance investment income and improve the financial performance of insurance companies. The research recommends that insurance companies in Nigeria should increase the volume of their investment in the capital market as this will lead to more investment returns which improve their overall profitability.

Keywords: Capital market, Insurance companies, Investment, Nigeria, Real estate, Mortgage.

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INTRODUCTION

Insurance firms constitute one of the major segments of the financial system in all economies of the world. As financial institutions, they are involved in financial intermediation, mobilizing financial resources and channeling them into the economy for productive uses (Ndugbu, 2014; Davis et al., 2014). Insurance is a financial contract and risk transfer mechanism suitable for managing consequences of insurable risks associated with personal and business activities (Fadun et al., 2018). The operation of insurance firms is guided by the law of large number. This law enables these enterprises to make an approximate estimate of the level of losses they are likely to suffer every year (Okere, 2015).

Insurance companies often collect more money from the premium than they lose on account of claims, they generally accumulate a large amount of money. As such, they constitute a major source of funds for investment (Iwuafor et al., 2016). An investment is a sacrifice of current money or other resources for future benefits. Insurance companies invest in the capital market in order to make returns on investments, and it is these returns that increase their profit portfolio (Ndugbu, 2014). The Insurance industry mobilizes savings and investible funds, accumulated from premiums and underwriting profits, thereby making insurance investment funds available to the capital market (Olayungbo, 2015). The remaining part of the paper is divided into problems of the study, objectives, research questions, hypothesis, literature review, research methodology, data analysis and discussion, conclusion, summary, and implication of findings.

The Nigerian insurance industry deals primarily with transferred risk evidenced in the form of premium paid by the insured to insurers. Given the uncertainty in the time of occurrence of risks, Fadun (2013) asserted that it proves very risky for insurers not to have money of sufficient value to match the loss incurred at any time by the insured. This sort of risk facing the insurance industry can be influenced by capital market investment. There exist a lot of studies on a wide number of investments in capital markets. However, the most prominent in capital market investments studies are government securities, stocks and bonds, real estate, and mortgages. By nature, the level of risk existing in insurance industry basically encourages investments. On the other hand, the level of investment depends on the amount of premium collected by insurance companies. They collectively fundamentally influence profitability of insurance industry.

A further look at the effect of capital market investment shows that when increased, profits tend to fundamentally rise due to improved access to long-term financing, enhanced productive capacity, and increased investment opportunities (McKinnon, 1973; Shaw, 1973). Lots of available empirical studies on capital market investments show minimal interest in the insurance industry (Fan et al., 2025; OECD, 2025; Muritala, 2024). These studies dealt largely with a combination of investment variables that were fundamentally unrelated in nature and effect. For example, Fan et al. (2025) focused on the relationship between stock market development, bond market expansion, and economic growth, without specifically examining how capital market investments influence the financial performance of insurance firms. Similarly, the OECD (2025) examined institutional investment patterns, capital market efficiency, and sustainable finance across member countries, with little attention given to the investment behaviour and profitability of insurance companies. Likewise, Muritala (2024) investigated the effects of capital market development on macroeconomic performance, emphasizing market capitalization, stock market liquidity, and investment flows rather than the returns generated from capital market investments by insurance firms. Consequently,

empirical evidence on the effect of capital market investments on the profitability of insurance companies, particularly in developing economies such as Nigeria, remains limited, thereby creating an important gap in the literature.

Also, with respect to the insurance industry, in particular its profits, most studies focused on firm-specific determinant, largely ignoring the impact of related investment variables (Olawaju et al., 2018; Odufisan et al., 2025). Therefore, there is a need for a quantitative study to investigate how insurance investment in capital markets (government securities, real estate and mortgages, stocks and bonds) affects profitability of the Nigerian insurance industry. It is against this scenario that this study is undertaken.

The main objective of this research is to evaluate the effect of insurance companies' investment on their profitability. However the achievement of the main objective is guided by the following specific objectives which are to:

1. evaluate the effect of insurance companies investments in real estate and mortgages on their returns on asset;
2. ascertain the extent to which insurance companies' investment in government securities affect their returns on asset;
3. examine the effect of insurance companies' investment in stocks and bonds on their return on assets.

The following hypotheses (stated in null forms only) are formulated to achieve the research objectives.

H₀₁: Insurance investment in real estate and mortgages has no significant effect on their returns on assets.

H₀₂: Insurance investment in government securities has no significant effect on their returns on assets.

H₀₃: Insurance investment in stocks and bonds has no significant effect on their returns on assets.

LITERATURE REVIEW

Insurance is a risk transfer mechanism that works based on law of large numbers. It is designed to protect the financial well-being of individual, households, companies and other entities in the case of an expected loss. Insurance has also been described as the cornerstone of modern-day financial services (Duru, 2015). Obi and Osuagwu (2014) argued that insurance is vital to a financial system due to its role in assisting people and businesses to manage their resources and mitigate risks. According to Iyiegbuniwe (2016), insurance firms are contractual financial institutions that specialize in providing insurance cover to their customers against insurable risk. They mobilize large amounts of financial resources from the premium and invest some percentages of the premium. Onoh (2017) opined that various reforms in the financial sector have expanded the scope of investment of insurance companies. Hence, insurance companies have assets in government securities, stocks, shares and bonds, mortgages and loans etc.

By way of conceptual clarification, insurers' investment refers to investment of premium income on accumulating policies into financial and real assets to produce income, to protect capital and to pay their policyholders over the term of policies (IAIS, 2023; OECD, 2024). Investment in real estate and mortgages refers to the purchase of property asset and mortgage-backed investments that provide insurance companies with long-term income, capital return and a portfolio diversification (OECD, 2024; Swiss Re Institute, 2024). Investment in government securities refers to insurers' holdings of treasury bills, treasury bonds, and other sovereign debt instruments issued by governments to provide relatively safe and liquid investment opportunities (OECD, 2024; International Monetary Fund, 2024). Additionally, stocks and bonds investment involves allocating funds to equity shares and corporate debt securities to achieve income generation, capital appreciation, and portfolio diversification (Swiss Re Institute, 2024). While equity investments offer higher expected returns with greater volatility, bond investments provide relatively stable income and lower investment risk, enabling insurers to balance profitability with financial stability (International Monetary Fund, 2024; International Association of Insurance Supervisors, 2023).

The returns generated from these investment portfolios of insurance companies are expected to increase their earnings relative to the asset base, thereby influencing the companies' Return on Assets (ROA), which is one of the most widely used indicators of profitability and managerial efficiency (International Association of Insurance Supervisors, 2023). Return on Assets (ROA) is a profitability ratio that measures how efficiently a firm utilizes its total assets to generate net income (Corporate Finance Institute, 2024). It is calculated as net income divided by total assets and indicates the effectiveness of management in converting invested resources into profits (Swiss Re Institute, 2024). Figure 1 below shows the conceptual framework of the study:

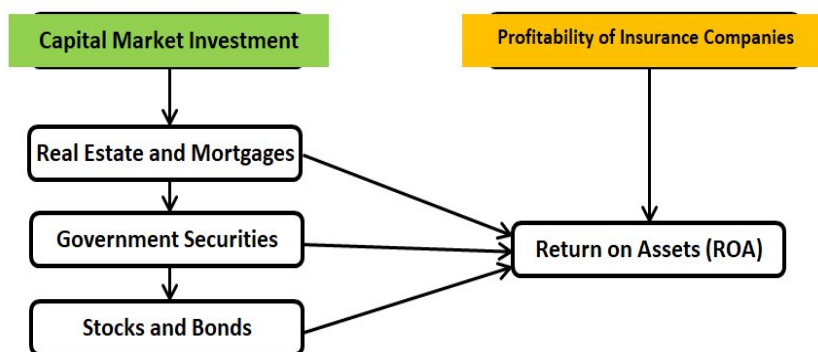


Figure 1: Operational Conceptual Framework (Source: Researcher's Desk, 2026)

Figure 1 presents the conceptual framework of the study, illustrating the hypothesized relationship between capital market investment and the profitability of insurance companies. Capital market investment is the independent variable and is represented by three major investment components: real estate and mortgages, government securities, and stocks and bonds. These investment instruments constitute the principal avenues through which insurance companies invest their accumulated funds to generate investment income and preserve capital.

The theoretical foundation of this study is the modern portfolio theory developed by Harry Markowitz in 1952 (Markowitz, 1952). The theory originally posits that rational investors can

maximize expected returns while minimizing investment risk by holding a diversified portfolio of assets whose returns are not perfectly correlated (Markowitz, 1952). Modern portfolio theory emphasizes that investment performance depends on the overall composition of the portfolio rather than the performance of individual assets, making diversification a key strategy for achieving optimal returns (Bodie, et al., 2021). The theory further argues that investors should allocate funds across different asset classes based on their risk-return characteristics to achieve an efficient portfolio that offers the highest possible return for a given level of risk (Elton, et al., 2014). In the context of this study, insurance companies invest in real estate and mortgages, government securities, and stocks and bonds to diversify investment risk while maximizing returns from their asset portfolios (OECD, 2024; Swiss Re Institute, 2024).

The conceptual framework in figure 1 above assumes that efficient allocation of funds to real estate and mortgages, government securities, and stocks and bonds enhances investment returns, improves asset utilization, and ultimately increases the insurers' Return on Assets (ROA). Therefore, it is expected from this theory that an optimal mix of investment assets can enhance the profitability of insurance companies as measured by Return on Assets (ROA). However, this will be empirically examined using data specific to Nigeria.

There has been extensive research by many scholars on the effect of capital market investments on the profitability of insurance companies in Nigeria and outside of Nigeria. Each of these studies has been distinguished by a difference in research settings, a difference in definition of the explanatory variables, a difference in the indexing procedure and difference in statistical analytical method. (Oloke et al., 2015) surveyed the real estate investment activities of Nigerian insurance companies'. Real estate investment was found to add to portfolio diversification and long-term investment returns, but constrained liquidity prevented it from having a full impact on profitability. (Morara et al., (2021) found that there was a positive relationship between insurer financial performance and size. The study also discovered that financial performance of insurers was negatively associated with the age variable. The research also found that better-performing insurers were more highly geared towards capital market investments.

(Kasee et. al., 2024) found that real estate investments have a weak but positive correlation with ROA, implying that although real estate investments add value to the insurers, they may not necessarily enhance the insurers' short-term profitability due to lack of liquidity. Iregi and Okeyo (2017) reported that high levels of real estate investment may be less liquid and profitable, suggesting diversification into more liquid assets despite the value of real estate investments in the long run. Findings from Cotter and Roll (2011) indicate that real estate investments offer moderate returns with low volatility and hence may be suitable for long-term investors (such as insurers), but may underperform equities in the short term.

Sunday et al. (2020) show that insurance investment in government securities had a positive but statistically insignificant effect, which suggests that they are safe but with low returns. OECD (2025) reports that fixed-income securities (mostly government bonds) are the main source of insurers' returns around the world, particularly when interest rates are high. Fan et al. (2025) noted that insurers accumulate bonds (including government securities) to generate more earnings from interest income and increase profits.

Moreover, Poufinas and Siopi (2024) examined the effects of bond investments (including government securities) on insurance companies' financial performance. The research used panel data on European insurance groups and demonstrated that government bonds are a

major component in insurers' portfolios and affect insurers' financial performance, but too much investment may have a negative effect because of low yields from fixed-income assets. Using empirical evidence, Brisker, Wang, and Wang (2024) analysed insurers' bond investment strategies. The research demonstrates that insurers invest largely in bonds (including government type and regulated securities) because the bonds and securities provide stable cash flows that help meet profitability objectives. The results confirm bonds are important for the stability of insurance earnings.

A related study by Mutia, Agong and Ochieng (2025) showed a positive and significant influence of equity investments on the financial performance of insurance companies in Kenya. Chache *et al.* (2020) found that there is a positive and significant effect between the risk-based capital and investment returns, thereby giving investment portfolio managers in insurance companies leeway to invest in risks that may incur a high capital charge. Ladan *et al.* (2025) found that equity investments, fixed-income securities (government and corporate bonds), real estate investments, cash and cash equivalents, and investment portfolio diversification are key factors that affect the performance of insurance firms in Nigeria.

Muritala (2024) applied panel regression and found that investment decisions (such as investment in equities and bonds) impact ROA, while excessive risk-taking in investment decisions may in some cases negatively impact profitability. Krišto, Žaja, and Jakšić (2023) analysed the impact of insurance investment portfolios on performance in Europe. The panel data analysis indicated that insurance companies' investment in equities and bonds affects profitability and risk, with low-risk portfolios (more bonds, less equity) being more stable but less profitable. Solomon and Ezema (2026) studied the impact of capital structure (equity and debt capital) on insurance companies' profitability in Nigeria using ARDL. Their results indicated that equity capital (related to capital market activities) positively influences profitability while debt financing hampers it.

Given the literature reviewed, some gaps are identified. Although numerous studies have examined the relationship between insurance companies' investment decisions and financial performance, most studies adopt aggregated investment measures rather than disaggregating investments into specific components such as real estate and mortgage, government securities, and stocks and bonds. Again, many of the existing studies are geographically limited, with a significant concentration on developed economies and a few emerging markets such as Kenya. There is a paucity of empirical studies focusing specifically on Nigeria. Additionally, none of the reviewed studies extends analysis to a long historical period such as 1981–2024.

RESEARCH METHODOLOGY

This study adopted an analytical ex post facto research design, which is appropriate because it relies on historical data to examine the effect of insurance companies' capital market investments on their profitability without manipulating the variables. Secondary data sourced from the Central Bank of Nigeria Statistical Bulletin and National Insurance Commission (NAICOM) Annual publications for various years.

Data retrieval was largely successful because both the CBN Statistical Bulletin and the National Insurance Commission Annual Statistics are recognized official sources of financial and insurance sector statistics. However, some challenges were encountered during data collection. Specifically, data on insurance companies' investment portfolios were not

consistently reported in a single publication for all years covered by the study. Consequently, the data were compiled by cross-checking successive editions of the NAICOM bulletin to ensure completeness and consistency. The data were analyzed using EViews 13 statistical software.

The Augmented Dickey-Fuller (ADF) unit root test was conducted to determine the order of integration of the series, while the Johansen co-integration test was used to ascertain the existence of a long-run equilibrium relationship among the variables. Thereafter, the Ordinary Least Squares (OLS) regression technique (Error Correction Model) was employed to estimate the effect of insurance companies' investments on Return on Assets (ROA). Diagnostic tests, including tests for serial correlation, model fitness and joint test, were conducted to ensure the reliability, validity, and robustness of the estimated model.

Model Specification

The model is a modification of the model specified in Chache (2020). However, while Chache (2020) focused on aggregated investment measures, this study improves on the existing specification by disaggregating insurance investments into real estate and mortgages, government securities, and stocks and bonds in order to capture their individual effects on profitability. The model is specified in functional form as follows:

$$IP = f(IIREM, IIGS, IISB) \quad (1)$$

Where

IP = Insurance profit (returns on asset)

IIREM = Insurance investment in real estate and mortgage

IIGS = Insurance investment in government securities

IISB = Insurance investment in stocks and bonds

The linear estimated form of the model is as given below:

$$IP = \beta_0 + \beta_1 IIREM + \beta_2 IIGS + \beta_3 IISB + \mu_t \quad (2)$$

Where β_0 is the intercept of the model, $\beta_1 - \beta_3$ are the unknown parameters to be estimated, and μ_t is the stochastic error term. The a-priori expectation is positive, i.e. $\beta_1, \beta_2, \beta_3 > 0$.

DATA ANALYSIS AND DISCUSSIONS

Table 1: Augmented Dickey Fuller (ADF) Unit Root Test

Variables	ADF Test statistic at level	ADF test statistic at 1 st difference	5% critical value	Order of stationarity
IP	-2.2323	-4.6407	-3.5742	1(1)
IIREM	-2.3526	-5.3304	-3.5742	1(1)
IIGS	-1.7315	-4.2441	-3.5742	1(1)
IISB	-2.5513	4.8620	-3.5742	1(1)

Source: Extracted from Eviews 13 output

Table 1 shows that insurance profit (IP) and insurance investment variables (IIREM, IIGS and IISB) achieved stationarity after first differencing. This means that their order of stationarity is a $I(1)$ process.

Table 2: Johansen Cointegration Test Result

No. of CEs	Trace Statistic	Prob.**	Max-Eigen Statistic	Prob.**
None *	162.6069	0.0000	56.96557	0.0003
At most 1 *	105.6414	0.0000	44.83184	0.0017
At most 2 *	60.80954	0.0019	24.19089	0.1282
At most 3	36.61865	0.1170	20.39135	0.0632

Source: Extracted from Eviews 13 output

Table 2 shows a summary of the Johansen cointegration test. The trace test indicates three (3) cointegrating equations at 5% level. Since three of the Trace Statistic probability values are less than the 0.05 critical value, we reject the null hypotheses of no long-run relationship and accept alternative hypotheses that there is cointegration amongst the variables.

Ordinary Least Square Regression Result

Table 3: Summary of Error Correction Model Result

Variable	Coefficient	Std Error	t-statistic	p-value	Decision
IIREM	0.180715	0.165579	1.091409	0.2949	Accept Null
IIGS	0.403317	0.073898	5.457753	0.0183	Reject Null
IISB	5.947706	2.135540	2.785106	0.0276	Reject Null
Constant	-2.188542	14.09233	-0.155300	0.8790	--
ECM(-1)	-0.315440	0.061199	-5.154333	0.0010	--
R-square = 0.987417			F-statistic = 43.324		
Durbin Watson = 1.9907			Prob. F-Stat = 0.0000		

Source: Author's computation from Eviews 13

The model estimation in Table 3 reveals that insurance investments in government securities, real and mortgage and stock and bonds, are positively related to insurance profit. The coefficients of the three variables are +0.1807, +0.4033 and +5.9477, which means that for every unit increase in the variables, insurance profit increases by 0+0.1807, +0.4033 and +5.9477 units, respectively. This shows a direct and positive linear relationship. The constant shows that insurance profitability decreases by 2.1885 units when the investment variables are held constant at zero. The speed of adjustment is estimated at -0.3154 and it means that approximately 31.54% of any short-run disequilibrium is corrected each year, and the adjustment is statistically significant.

Fitness of the model: The R-square is estimated at 0.9874, which means that about 98.74% of the variations in insurance profit are explained by the capital market investment variables.

Test of hypotheses: Table 3 shows that insurance investments in government security (IIGS) and stocks and bonds (IISB) are both significant at 5% level; hence, the rejection of their null hypotheses. Furthermore, insurance investment in real estate and mortgages (IIREM) is not significant; hence, the acceptance of the null hypothesis. The conclusion from the hypothesis test is that insurance investment in real estate and mortgages has no significant effect on their returns on assets. However, insurance investments in government securities and stocks/bonds have positive and significant effect on returns on assets.

Joint test: The F-statistic value of 43.324 has a corresponding probability value of 0.0000. Therefore, we reject the null hypotheses and conclude that the capital market investment variables have a joint effect on insurance profit (ROA).

Test for autocorrelation: No autocorrelation was present in the model since the Durbin-Watson statistic, 1.990, is closer to 2 than to 0. The null hypothesis of no autocorrelation is accepted.

DISCUSSION OF FINDINGS

The coefficient estimates from the regression model indicate that the three independent variables (investment in government securities, real estate and mortgage, and stocks and bonds) have a positive impact on insurance profitability. Specifically, the estimates of coefficients show that a one unit rise in the investment in government securities, real estate and mortgage, and stocks and bonds leads to an increase in insurance profit by 0.4863, 0.0285 and 0.3634, respectively. This gives evidence of the positive linear impact of investment activities on insurance profitability, meaning that insurance firms are likely to do well by diversifying their investments.

However, the findings from the hypothesis testing show that the investment in real estate and mortgages is not significant on return on assets (ROA). This implies that although investments in real estate are positively significant to profitability (coefficient sign), they are not significant on financial performance. This is consistent with the argument put forward by Kasee and Oluoch (2024) that real estate investments are usually illiquid and those investments may not translate into immediate profitability even though they are valuable for the long term. Similarly, Iregi and Okeyo (2017) found that increased investments in real estate may reduce the liquidity of a firm, consequently reducing the impact on profitability in the short term.

In contrast, the findings show investments in government securities significantly and positively affect ROA. This finding is consistent with the portfolio theory, which suggests that low-risk investment instruments such as government securities provide regular cash flow and help to enhance financial performance. This result is consistent with Sunday et al. (2020), who reported a positive association between government securities and the performance of the insurance sector, and the OECD (2025), which noted that bonds are important sources of investment income to the insurance industry globally. The significance of this variable also supports the conclusion of Fan et al. (2025), who found that companies invest in bonds and government securities to smoothen profits and increase profitability.

Furthermore, we find that investment in stock and bonds also has a positive impact on ROA. This finding suggests that investment in the capital market enhances profitability of insurance firms through dividends, interest, and capital gains. The result is consistent with Mutia,

Agong and Ochieng (2025) who concluded that investment in equities has a significant positive impact on the financial performance of insurance firms. It is also in line with Muritala (2024) who found that investment in equities and bonds significantly impact the ROA of insurance firms. It is also consistent with Krišto, Žaja and Jakšić (2023) who concluded that investments in equity and bonds have a positive effect on profitability, though they are subject to various risks.

CONCLUSION

The study concludes that there is a positive relationship between capital market investment and the profitability of insurance companies in Nigeria. The findings indicate that increases in insurance companies' investments in capital market instruments are associated with improvements in profitability, while reductions in such investments are likely to diminish profits. Specifically, investments in government securities and stocks and bonds exert a significant positive effect on Return on Assets (ROA), whereas investments in real estate and mortgages have a positive but statistically insignificant effect. The implication of these findings is that prudent allocation of insurance funds across capital market instruments can enhance investment income and improve the financial performance of insurance companies.

However, the study is limited by its reliance on secondary annual data and its focus on selected categories of capital market investments, thereby excluding other investment instruments and firm-specific factors that may also influence profitability. In addition, the findings are based on Nigerian insurance companies and may not be directly generalizable to other countries with different regulatory and economic environments.

The policy implication of the study is that insurance companies should strengthen portfolio diversification by allocating more funds to efficient and relatively profitable capital market instruments while maintaining prudent risk management practices. Regulators should also promote a stable and transparent capital market environment that encourages long-term institutional investment and supports the profitability and financial stability of the insurance industry. Also, insurance companies should increase the volume of their investments in government securities and bonds in order to reap maximally from these two investment outlets and improve the industry. The Insurance Act of 2003 which puts the maximum investible funds of insurance companies at 30% of premium should be fully utilized by the industry for increased investment returns.

Again, all registered insurance companies should make more of an effort to be listed on the stock exchange. The insurance industry should encourage all insurance companies to be actively listed on the stock exchange and be active players in the capital market by way of investments.

As a way of improving on this literature, future studies should incorporate additional investment classes, firm-specific characteristics, and macroeconomic variables that may influence insurance companies' profitability. Researchers may also employ panel data techniques or comparative cross-country analyses to provide more robust evidence on the relationship between capital market investment and insurance company performance.

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