RISK MANAGEMENT PRACTICES AND FINANCIAL PERFORMANCE OF NON-LIFE BUSINESS IN NIGERIA

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ABSTRACT

This study examined the influence of risk management practices (actuarial, underwriting, and investment) on the financial performance of the non-life insurance companies in Nigeria.Anexpost facto research design was employed, utilizing a census sampling taking into cognizance all forty-one licensed non-life insurance companies in Nigeria as of January 2023. Secondary data were collected from the companies' financial reports covering twenty-year period of 2008-2023. The data obtained was analyzed using both regression and correlation analysis. The result of the study revealed that underwriting practice has significant positive effect on profitability of non-life insurance companies in Nigeria. Also, the study revealed that underwriting, actuarial, and investment practices have a joint significant effect on the profitability of non-life insurance companies. The findings implied that non-life insurance companies in Nigeria should refine their underwriting processes, adopt actuarial models, rather than the "the rule of the thumb" and focus more on investment strategies to mitigate potential and catastrophic risks. These on a long run could help non-life insurance companies capitalize on opportunities. This study is only limited to non-life, thereby neglecting the life insurance companies. The study proves the paradigm shift of over reliance of reinsurance as a main risk management technique for insurance companies. The study shows the importance of risk management practices on the performance of non-life insurance companies in Nigeria.

Keywords: *Actuarial Practice, Investment Practice, Risk Management Practices, Underwriting Practice, Profitability.*

1. INTRODUCTION

Risk management is a vital component in any economy due to its significant impact on various businesses and industrial sectors. Effective risk management minimizes economic losses, prevents workplace accidents, and ensures sustainable development (Lupu, 2023). Amidst economic liberalization and market-driven economies, managing risks is essential for the long-term success of institutions (Kishanrao, 2023). Risk management becomes even more critical, in politically and economically unstable environments, aiding goal achievement, cost reduction, and the avoidance of potential obstacles that could impede business success (Rahmanova, Hruscheva & Popova, 2022). The economic security and financial potential of enterprises are heavily dependent on the efficient identification, management, and mitigation of risks. Thus, risk management is crucial for reducing firm's risk to sustainable levels (Hankins &Hoberg, 2024). Moreover, with globalisation and intense competition, the prevalence of risks

is increasing, making risk management integral to the success of every organisation. Management of risk is more pronounced in insurance business model, where insurance companies manage their risk exposures and those of their clients due to the high-risk nature of the business (Kokobe & Gemechu, 2016). Additionally, Ugli (2023) further emphasizes the importance of risk management on the performance of insurance companies as it directly impacts their financial stability and competitiveness. This study aims toassess the extent to which risk management practices (underwriting, actuarial, and investment) practices have a joint significant effect on the profitability of non-life insurance companies.

1.1 Statement of the Problem

Following events like the COVID-19 outbreak, effective risk management is even more critical to mitigate losses from decreased demand, lower investment returns, and increased claim settlements (Trivedi, 2022). Hence, there is need for insurance companies in Nigeria to focus more on other risk management practices like actuarial analysis, investment management and underwriting management as well as the reduction of over reliance on reinsurance (Angima, Nwangi & Ogutu, 2017; Trivedi, 2022; Efuntade & Efuntade, 2022).Despite contributing less than 1% to Nigeria's Gross Domestic Product (GDP), the insurance industry is crucial to the economy, controlling large sums of money and protecting businesses from various risks (Soladoye et al., 2024). However, the industry faces numerous challenges, including underwriting losses, high operating expenses, and reduced income (Epetimehin, 2012). Underwriting is a key determinant of success in the insurance business. For Nigerian insurance companies to achieve profitability comparable to other financial sectors, particularly the banking sector, they must improve their underwriting practices. The underwriting capacity of Nigerian insurance companies is relatively limited when compared to the total gross premiums they generate. This limitation becomes particularly apparent in their struggle to manage larger, unforeseen risks, particularly in sectors such as energy and aviation (Falana & Adejuwon, 2022; Oyetayo & Abass, 2020). Additionally, insurers encounter fundamental actuarial risks, such as underpricing, where premiums are insufficient to cover claims and operational cost. In the same vein, underwriting risk also emerges from inaccurately estimated premiums, often due to actuarial inefficiencies. These underestimations can lead to financial instability within insurance firms. (Angima, et al, 2017; Fali, Nyor, & Mustafa, 2020). Also, the insurance industry contributes to the economy and financial stability through risk reallocation and long-term investment horizons. Therefore, investing accumulated fundscannot be overemphasized. The investment strategies of insurance firms significantly affect their financial performance, as insurance companies increasingly participate in equity and debt markets.

However, the Nigerian investment environment poses significant challenges for fixed-income securities due to persistently low yields driven by high inflation rates and the vulnerability to mark-to-market losses as interest rates continue to rise (Efuntade & Efuntade, 2022; Soye & Adeyemo, 2018).

Although, various studies have unraveled the nexus between underwriting management and performance, actuarial analysis and performance and investment management and performance in the Nigerian insurance industry separately. It appears that no study has examined the joint effect of these variables on financial performance of insurance companies in Nigeria. Therefore, this study is aimed at exploring the joint influence of underwriting practices, actuarial practices, and investment practices on the performance of non-life insurance companies in Nigeria.

2.   LITERATURE REVIEW

2.1. Conceptual Review
According to Chipa and Wamiori (2017) risk managmenNt involves identifying, analyzing, assessing, monitoring and controlling risks leading to better process of decision making. It is a technique that

manages risks associated with firms' operations, thereby maximizes opportunities and minimizes threats (Fadun, 2013). Insurance is often seen as a multipurpose vehicle to managing risk (Loomba, 2014). Therefore, insurance firms manage risks assumed by them by agreeing to compensate in the event of financial losses (Amaya & Memba, 2015). Risk management practices explored by insurance companies can be conceptualized into actuarial, investment and underwriting practices (Barth &Eckles, 2009; Mwangi& Angina, 2016; Festus, 2014). Actuarial Education Company, (2014) defines actuarial risk as the risk that surfaces when actuaries incorporate assumptions into a model to price on a specific insurance policy that may turn out inaccurate due to wrong speculations. Actuarial risk management practices (ARMP) involve systematic handling of the risks contained in the products offered to customers through various techniques to protect against insurance risk (Angina et al., 2017). Investment is a tool that exercises prudency and accurate balance in resource allocation. Husain and Nikita (2016) posit that the core function of insurance is predicated upon two important functions; underwriting activity and investment activity. Investment practice by insurance companies may be through direct investments, equity shares or deposit money, contribution to a provident fund account, and investment into real estate (Akinwumi, 2009; Festus, 2014; Oloke, Emeghe & Durodola, 2015). Underwriting on the other hand is the process comprising of a set of procedures and actions leading to reasonable decision making based on the risk and the chance to be accepted or rejected with regards to balance and profitable insurance portfolio building. Barth and Eckles, (2009) assert that selective underwriting practices may cut costs leading to improved profitability, but market share may be lost to competitors. Lowering and relaxing of underwriting practices by insurance companies by reducing prices may result in higher claim costs which in turn may lead to poor underwriting results (Harrington & Danzon, 1990).

Financial efficiency depicts how management is prudent and effective in allocation of financial resource to various portfolio in other to yield a positive and better rate of return. Meanwhile, Wani and Dar, (2014) opined that the financial performance of insurance companies may be affected by both internal factors and external factors. Financial performance with regard to insurance companies has been usually expressed in as a function of internal determinants. (Çekrezi, 2015; Ben Dhiab, 2021).

Profitability refers to the capability to create and generate return or profits in each and all business activities of any firm. It reveals how efficient the management will generate profit and returns from their operations as a result of utilizing all resources obtainable in the marketplace. According to Gatot and Ramadhon, (2018), profitability in insurance company can be measured by using return on asset (ROA), which measures the company's ability to generate profits, (Riyanto, 2008). Solvency on the other hand measures the adequacy of assets of a business over liabilities (Stulz, 2010). It demonstrates the ability of an organisation to meet its long-term fixed expenses and realize its expansion (Kaya, 2015). Therefore, the financial efficiency of an insurance companies is hinged on solvency, profitability and liquidity (Outecheva, 2007).

2.2   Theoretical Review

This study is anchored on the Risk-Return Trade-off Theory. The tradeoff between risk and return is essential in providing explanation on the key decisions made by financial institutions (Dhankar, & Kumar, 2006). The theory's central claim revolves around a chance for greater rewards with increasing risk, and a greater degree of uncertainty (Fama & MacBeth, 1973). This theory is employed in explaining how insurance companies operate, especially in terms of how they manage risk across all of their primary responsibilities. A trade-off is apparent for insurance companies in achieving a balance in the areas of investment, actuarial analysis, and underwriting, all of which are crucial in determining general performance. In particular, underwriting management is essential to every insurance company's operation since it involves the assessment of the risk of providing insurance to an entity and figuring out what amount of premiums to charge. Underwriters need to choose between accepting higher-risk

prospects, who may result in larger or more frequent claims but also generate higher premium income, or concentrating on lower-risk prospects, who are less likely to file claims but generate smaller premium income. Similarly, actuarial analysis plays a critical role in the risk-return trade-off by guaranteeing that policyholder premiums accurately represent the degree of risk. When this equilibrium is reached, the insurance company may continue to be competitive and financially stable, which will enhance its overall performance. Before claims must be paid out, insurance firms collect premiums from insureds in advance, creating a pool of financial resources that may be invested to produce extra revenue. Choosing how to allocate these funds in a way that optimizes returns while managing the risk involved is the responsibility of the company's investment managers (Ghysels, Santa-Clara &Valkanov, 2005). The difficulty is in determining the ideal combination of assets that would yield the required revenue while maintaining the firm's ability to pay claims in the future. An insurance company has a higher chance of long-term financial stability and profitability if it successfully handles the risk-return trade-off across all services. Through prudent risk and return management in underwriting, actuarial pricing, and investment strategies, an insurance firm may limit its exposure to loss and other unforeseen contingencies that may halt its growth and lead to liquidation and the long run when not well managed.

2.3   Empirical Review

Widianto et al. (2024) examined how actuarial risk management practices affect firm performance in the Indonesian insurance sector, focusing on the intermediary role of e-service innovation. The study utilized Partial Least Squares Structural Equation Modeling (PLS-SEM) in analysis. The results indicated that while actuarial risk management practices alone had an insignificant impact on firm performance, their influence was positively enhanced through improvements in e-service innovation. This finding is consistent with Angima et al. (2017), who explored actuarial risk management practices, underwriting risk, and performance in property and casualty insurance firms in East Africa, specifically Kenya, Uganda, and Tanzania. Standard linear regression models were used to assess the link between risk management practices and performance outcomes, revealing a significant correlation between underwriting practices and financial performance Actuarial risk management does not directly impact the financial performance of insurance companies.

Efuntade and Efuntade (2022) studied the effect of portfolio allocation on the financial performance of insurance companies in Nigeria. Using a quantitative approach with secondary data from audited annual reports and the National Insurance Commission's e-journals (2003-2021), their analysis showed a significant long-term relationship between portfolio allocation and financial performance. The study recommended that insurance companies adopt a balanced and diversified investment strategy to improve profitability and manage market risks. In the same vein, Kiboi and Bosire (2022) focused on how selected investment choices impact the financial performance of insurance companies in Kenya, specifically analyzing return on equity (ROE). Their quantitative study used regression analysis to assess the effects of investments in government securities, money market instruments, quoted ordinary shares, and real property. The findings demonstrated that these investment choices positively affect financial performance, leading them to recommend that insurance companies prioritize these investments and advocate for regulatory changes to increase investment flexibility.

Oluwaleye et al. (2020) investigated the relationship between underwriting operations and the financial performance of non-life insurance firms in Nigeria. Employing a quantitative methodology with regression analysis on data from 2011 to 2020, the study found that insurance premiums significantly positively impact return on assets (ROA) and advised non-life insurance firms to focus on refining their premium strategies to boost financial performance, suggesting that stronger emphasis on premium growth could enhance profitability. Relatedly, Mutua et al. (2023) explored the complex relationship between various insurance risks and financial performance of insurance companies in Kenya. Using a panel regression model, they highlighted the critical role of underwriting risk in financial performance and

underscored the importance of effective underwriting practices for profitability.

Oyetayo and Abass (2020) investigated the relationship between underwriting capacity and the financial performance of non-life insurance companies in Nigeria. Their correlational research revealed that various underwriting capacity factors have a significant influence on financial performance. They advised that companies should strengthen their financial capabilities and adopt strategic management of underwriting practices to boost performance.

3.   RESEARCH METHODS

The study covered all the forty-one registered insurance companies carrying out general insurance business in Nigeria as at, January 2023.The researchers adopted the ex-post factor research design since it allows researchers to examine the relationship between variables without direct intervention. The Census sampling was adopted to allow for data robustness and generalization of findings. Therefore, all the insurance companies in Nigeria that carry out non-life insurance business were considered. The study adopted the secondary data approach to obtain data from the annual reports and financial statements of these insurance companies and the Nigeria Insurers Association (NIA) Digest for the period of 2008 to 2023. The data collected included surrogates for actuarial, investment, and underwriting risk management practices and performance.

The model used in the study is presented below:

Performance = f (Risk Management Practices) $Pf_{it} = f(AP_{it}\ IP_{it}\ UP_{it})$ Equation 1

Where:

Pfis profitability, AP is Actuarial Practice, IP is Investment Practice and UP is Underwriting Practice
Thus,   the   panel   data   regression   model   is   expressed   as
follows: $Pf = \beta_0 + \beta_1 AP_{it} + \beta_2\ IP_{it} + \beta_3 UP_{it} + \mu_{it}$ Equation 2

Table 1. Measurement of Variables indicators, description, description and measurement.

S/N	Variable	Nature	Measurement/ Proxies	Source(s)	Apriori Expectation
1.	Financial Performance	Dependent	PBT-Tax	Angima et al. (2017)	+/-
2.	Actuarial practice	Independent	Net technical reserves	Bente, (2017)	+/-
3.	Investment practice	Independent	Investment income	Mutua et al. (2023)	+/-
4.	Underwriting practice	Independent	Combined ratio + reserve	Falana&Adejuwon, (2022)	+/-

Source: Author's Compilation (2025)

Table 2 above shows a strong negative skewness and high kurtosis appear in log investment practice and log profitability, suggesting that the majority of values are concentrated at the upper end of the distribution while a small number of lower values pull it to the left. The existence of severe outliers is suggested by their high kurtosis values. A left-skewed distribution is also obtained in Log Underwriting Practice, but the kurtosis is less extreme values, suggesting a more stable range of values. Log Actuarial Practice, on the other hand, has a flatter distribution and fewer extreme values, making it almost symmetrical. Overall, the data point to different levels of kurtosis and skewness, with the most noticeable departures from normalcy shown in profitability and investment measures.

4. DATA ANALYSIS AND INTERPRETATION

Table 2: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Log Investment Practice	16	.00	7.00	5.4506	1.50591	-3.511	.564	13.512	1.091
Log Underwriting Practice	16	4.44	6.06	5.5463	.40366	-1.428	.564	2.773	1.091
Log Actuarial Practice	16	-1.40	-.25	-.7737	.33710	-.244	.564	-.537	1.091
Log Profitability	16	.00	5.97	5.1725	1.41173	-3.697	.564	14.277	1.091
Valid N (listwise)	16								

Source: Author's Compilation (2025)

Table 3:   Model Summaryand ANOVA

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.873ᵃ	.762	.702	.40190

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6.196	3	2.065	12.787	.000ᵇ
	Residual	1.938	12	.162		
	Total	8.135	15			

Source: SPSS

The model summary and ANOVA results in Table 3 illustrates the impact of investment, underwriting, and actuarial practices on the performance of the Nigerian insurance industry. The coefficient of determination (Adjusted R^2 = 0.702, p-value < 0.05) indicates that 70.2% of the variation in industry profitability is collectively explained by these practices. This outcome aligns with the findings of Angima, et al. (2017), Oyetayo and Abass (2020), and Akpan et al. (2020). Akpan et al. (2020) noted that while underwriting functions (GPW) alone do not significantly affect profitability, their combination with other variables significantly influences the profitability of insurance companies. The ANOVA output further confirms that the regression model fits well, as the p-value (0.000) is less than the study's significance level (0.05).

Table 4: Regression Result

Model	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1 (Constant)	-5.571	1.576		-3.535	.004		
Log_investment_practice	-.018	.081	-.037	-.226	.825	.725	1.379
Log_underwriting_practice	1.576	.272	.864	5.803	.000	.896	1.116
Log_actuarial_practice	-.007	.375	-.003	-.019	.985	.674	1.484

Source: SPSS

a. Dependent Variable: Performance

Log Profitability = - Log 5.571 - Log 0.018 IP + Log 1.576 UP - Log 0.007 AP.

An examination of the unstandardized coefficients and associated p-values in Table 5 reveals that underwriting practice ($\beta UP = 1.576$, $p < 0.05$) is statistically significant and predictive of the performance of the Nigerian insurance industry, corroborating Oluwaleye et al. (2023). Conversely, investment and actuarial practices were found to be statistically insignificant for predicting performance, in line with Widianto et al. (2024) and Angima et al. (2017), who reported that actuarial risk management practices do not directly impact the financial performance of insurance companies. However, this finding diverges from Efuntade and Efuntade (2022), Mutua et al. (2023), and Percevic and Ercegovic (2024), who found significant effects of investment practices on performance/profitability**.**

5.   DISCUSSION OF FINDINGS

This study investigated the combined impact of investment, underwriting, and actuarial practices on the financial performance of the Nigerian insurance industry, as well as the relationship between these risk management practices and the industry's financial outcomes. The findings underscore the critical role of these practices in shaping the industry's profitability and sustainability. The analysis reveals that underwriting practices significantly influence the performance of insurance companies, while investment and actuarial practices, though essential, do not show a direct statistical impact on profitability within the Nigerian context. The strong positive correlation between underwriting practices and performance highlights the importance of meticulous risk assessment and management in driving financial success.

6.   CONCLUSION AND RECOMMENDATIONS

From the findings, it can be inferred that the selected firms benefited from the joint implementation of underwriting risk management, investment risk management and actuarial risk management. This result corroborates the need for non-life insurance firms to employ various risk management practices holistically. The implementation of these strategies altogether shows that investment risk management practices and actuarial risk management practices cannot individually enhance the profitability of the firms when they are implemented silos. Thus, implementing training programmes and utilising advanced analytical tools can enhance the accuracy and effectiveness of underwriting decisions, ultimately improving financial performance. Based on these findings, the study recommends that Nigerian non-life insurance companies should adopt sophisticated actuarial models and investment strategies that consider market conditions and regulatory environments to mitigate potential risks and capitalize on opportunities. Moreover, they should continue to refine their underwriting processes, ensuring comprehensive risk

assessment and categorisation.

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