UNDERWRITING FUNCTIONS AND THEIR IMPACT ON THE PROFITABILITY OF LISTED INSURANCE FIRMS IN NIGERIA.

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NOVEMBER, 2025

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A PROJECT SUBMITTED TO THE DEPARTMENT OF INSURANCE. FACULTY OF MANAGEMENT SCIENCES, UNIVERSITY OF BENIN, BENIN CITY FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE (B.Sc) DEGREE IN INSURANCE, UNIVERSITY OF BENIN.

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DECLARATION

I, the undersigned solemnly declare that the project is based on my own work carried out during the course of my study. I affirmed that the statement made and conclusions drawn are corollary of my research work. I further authenticate that the work contained in the report is original and also has been done by me under the general supervision of my supervisor. The work has been submitted to any instruction for any other degree or diploma certificate programme in this University or any other University.

.....

Obiabo Nwagocho Rachael

(Project student)

CERTIFICATION

We certify that this work was carried out by **Obiabo Nwagocho Rachael** with Matriculation number: **MGS2104956** of the Department of Insurance, Faculty of Management sciences, University of Benin, Benin city.

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DR. O. OMORUYI-AIGBOVO **DATE**

(Head of Department)

DEDICATION

I dedicate this work to God Almighty, the Alpha and Omega, and the lifter of my head who saw me through my journey as an undergraduate in the University of Benin and also to my supporting guardian, Mr & Mrs Osaro Abusomwan and my lovely mother, Mrs Rose Emmanuel.

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TABLE OF CONTENTS

ABSTRACT

The study examines the effect of underwriting function on the profitability of listed insurance firms in Nigeria over the period 2014 – 2023. A longitudinal research design was adopted for the study. The population of the study consists of fifty one (51) listed insurance companies as at 31st December, 2023. Twenty four (24) of the listed insurance firms were selected to form the sample of the study. Panel data technique was utilized to examine the effect of the four underwriting function variables (net premium income, underwriting risk, reserves and reinsurance utilisation) on the profitability of listed insurance firms. The finding of the study reveals that net insurance premium has a positive and significant effect on the profitability of listed insurance firms in the Nigeria while underwriting risk, reserve and reinsurance utilization were found not to exert significant effect on profitability. The study recommends among others that insurance firms in Nigeria should improve their net insurance premium in order to continue to increase their profitability.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Insurance is a financial tool that is responsible for the management of individual and corporate risks conventionally within the economy. To ensure profitability and sustainability, these risks should be well managed by the insurance companies. Insurance companies' ability to continue to cover risk in the economy hinges on their shareholders (Akoley, Sackey, Amoah, & Manson, 2023). Sean (2021) opined that the essential insurance model involves pooling risks from individual players and redistributing it across a larger portfolio. Most insurance coverage, then reinvesting those premiums into other interest- generating assets.

The study of underwriting functions and their impact on the profitability of listed insurance firms in Nigeria is a critical area of research, given the crucial role insurance plays in financial stability and economic development. Underwriting, the process of assessing and accepting risks for insurance coverage, is fundamental to an insurer's financial health. Understanding how underwriting practices affect profitability is essential for both the insurance industry and the broader economy. The functioning of insurance companies is significant not just to their shareholders but also to the broader economic stability of a nation. Insurance companies in Nigeria operates within a multifaceted environment, whereby they are responsible for

evaluating risks, determining policy prices and overseeing underwriting activities to guarantee the financial sustainability of their business operations (Olokundun, 2018).

Listed insurance companies play a vital role in the Nigerian insurance market, making significant contributions to the financial ecosystem of the country (Arowosafe & Akindele, 2019). Underwriting is the core function of insurance companies, involving the assessment of risk, pricing, and selection of risks to be insured. Effective underwriting ensures that insurance companies can accurately price policies, manage claims effectively, and maintain profitability. It also plays a role in preventing fraud and maintaining the overall stability of the insurance market. Underwriting profit, shows the excess of premiums earned over claims paid before investment income, is a key indicator of an insurer's operational efficiency.

Studies in Nigeria have explored the relationship between various underwriting factors (like premium volume, loss ratio, and underwriting expenses) and overall profitability (measured by metrics like return on assets or equity). Efficient underwriting practices are expected to lead to higher profitability, while poor practices can result in losses and financial instability. The Nigerian insurance sector has been growing, but still faces challenges like low penetration rates and a lack of awareness about the benefits of insurance. There is also a need to improve the overall efficiency and profitability of insurance companies, particularly listed firms which are expected to have higher standards of corporate governance and financial performance.

Therefore, research focusing on the link between underwriting and profitability in this specific context is crucial for the development of the industry. It examine the impact of underwriting capacity (e.g., reserves, reinsurance, shareholders' funds) on financial performance. The role of underwriting profit in determining overall profitability is also a key area of investigation (Adeyemi & Oseni, 2019).

Underwriting functions significantly impact the profitability of listed insurance firms in Nigeria. Efficient underwriting, including accurate risk assessment and pricing, is crucial for generating underwriting profit, which directly contributes to overall financial performance. However, it suggest that while underwriting profit and gross premium written have a positive impact, their effectiveness can vary, and other factors like claims management and firm size also play a role. Gross Written Premium (GWP) representing the total premium income before deductions, is a key indicator of the volume of business an insurer handles. It suggest that GWP, as a measure of underwriting function, can positively and significantly influence profitability. Underwriting Profit is the profit generated from insurance operations before considering investment income. While some research shows a positive and significant impact of underwriting profit on profitability, others suggest that efficient underwriting practices are necessary for this impact to be realized (Akotey, Sackey, Amoah & Manso, 2013).

The costs associated with underwriting, such as claims processing and risk assessment, can significantly impact profitability. Efficient management of these expenses is crucial for maximizing underwriting profit. Reinsurance helps mitigate risk by transferring a portion of the insurer's liabilities to another insurer. Studies suggest that reinsurance utilization can have a positive impact on the financial performance of insurance companies. Additionally, researchers analyze the influence of factors like loss ratios, premium growth, and firm size on the profitability of listed insurance firms. By understanding the relationship between underwriting and profitability, regulators (like NAICOM) can develop policies to improve the performance of the insurance sector. Insurance companies can refine their underwriting strategies and risk management practices (Choi & Eling, 2011). Ultimately, a more robust and profitable insurance industry can contribute to greater financial stability and economic growth in Nigeria.

1.2 Statement of the Research Problem

The problem lies in the disconnect between underwriting practices and the profitability of listed insurance firms in Nigeria. While underwriting is crucial for risk assessment and premium setting, many Nigerian insurance companies struggle to optimize these functions for maximum profitability. This leads to issues such as inadequate risk pricing, high expense ratios and ultimately, reduced financial performance. Specific issues include;

. Inadequate Underwriting Capacity: Many insurers in Nigeria lack the capacity to assume significant risks that leads to over-reliance on reinsurance and potentially reduced profitability.

. Inaccurate risk assessment and inappropriate pricing strategies: This can result in under-priced policies leading to losses, or over-priced policies which leads to a lack of competitiveness.

. Inefficient underwriting processes and high operating costs: This can erode profitability and insurance products may not be tailored to the specific needs and preferences of the Nigerian market which will lead to low adoption rates and reduced premium income however limit access to insurance product.

. Inadequate distribution networks: This can hinder premium growth and overall profitability, lack of trust in insurance companies and concerns about claims settlement can discourage potential customers and limit market penetration, frequent changes in regulations and compliance requirements can create uncertainty and increase operational costs for insurance companies, and the Nigerian insurance market is characterized by intense competition and a large number of small, undercapitalized firms, which can make it difficult for any individual company to achieve significant profitability.

These challenges highlight the need for Nigerian insurance firms to improve their underwriting practices, enhance risk management, and optimize their operations to improve profitability and contribute more effectively to the Nigerian economy.

1.3 Research Questions

This study aims to provide answers to the following research questions:

1. What is the effect of net premium income on the profitability of listed insurance firms in Nigeria?
2. How does underwriting risk affect the profitability of listed insurance firms in Nigeria?
3. What is the relationship between reserves and profitability of listed insurance firms in Nigeria?
4. To what extent does reinsurance utilization impact the profitability of listed insurance firms in Nigeria?

1.4 Research Objectives

The general objective of this study is to examine the effect of underwriting functions on profitability of listed insurance companies in Nigeria. The specific objectives are to:

i. determine the effect of net premium income and the profitability of listed insurance firms in Nigeria.

ii. examine the effect of underwriting risks on the profitability of listed insurance firms in Nigeria.

iii. evaluate the effect of reserves on the profitability of listed insurance firms in Nigeria; and

iv. examine the impact of reinsurance utilisation on the profitability of listed insurance firms in Nigeria.

1.5 Research Hypotheses

The following hypotheses are stated in their null form:

$H0_1$: Net premium income has no significant effect on the profitability of listed insurance firms in Nigeria.

$H0_2$: Underwriting risk has no significant effect on the profitability of listed insurance firms in Nigeria.

$H0_3$: Reserves have no significant effect on the profitability of listed insurance firms in Nigeria.

$H0_4$: Reinsurance utilization has no significant impact on the profitability of listed insurance firms in Nigeria.

1.6 Significance of the Study

The study is significant because, efficient underwriting endures that insurance companies accept profitable risks, leading to increased profitability through premium income and reduced claims payouts. Underwriting involves evaluating the risk associated with insuring a particular individual or entity. This assessment helps determine the appropriate premium to charge, ensuring that it adequately covers the potential claims and expenses in such a way that an accurate risk assessment and pricing are essential for maintaining profitability. An effective underwriting process leads to a higher premium income as companies can accurately assess and price risks, leading to increased revenue from premiums, by carefully selecting risks. Insurance companies can minimize the number of claims they have to pay out, thus reducing expenses and improving profitability and draw a healthy underwriting profit margin as a key indicator of a well-managed insurance company. The efficient underwriting function ensures that insurance companies can meet their financial obligations, maintain solvency, and operate sustainably, can offer more competitive pricing and better service, attracting and retaining customers with the use of competitive advantage and lastly , if they are intertwined with other aspects of the insurance business, including investment and actuarial practices, it can help in a holistic approach to risk management, including strong underwriting, which is vital for overall financial performance in Nigeria.

The significance of this study is based on the capacity to enhance underwriting functions in fundamental to the success of listed insurance firms in Nigeria, by effectively managing risks and pricing policies, companies can improve their profitability, ensure financial stability and maintain a competitive edge in the market.

1.7 Scope of the Study

In listed insurance firms in Nigeria, underwriting functions significantly influence profitability. An effective underwriting, encompassing risk assessment, pricing, and policy issuance are crucial for generating underwriting profit and overall financial performance. While some studies suggest a positive relationship between underwriting functions and profitability. The scope of this study is to examine underwriting function and its influence on the financial performance/profitability of insurance companies in Nigerian market. By analysing underwriting functions and financial indicators like profitability, the study will identify specific areas of weakness and inefficiency that contribute to the problem. With this knowledge, policymakers, regulators and industry stakeholders can develop targeted interventions and reforms aimed at improving underwriting standards, enhancing risk management practices and ultimately, strengthening financial resilience across the insurance sector.

It encompasses firm size, larger firms may have economies of scale and greater access to resources, but they may also face higher operating costs and more complex management challenges, and effective corporate governance practices, which include board size and risk management frameworks, that can positively influence profitability. Insurance companies strikes a balance between underwriting profitability and maintaining competitiveness in the market through efficient underwriting, including accurate risk assessment, competitive

pricing, and effective claims management which can lead to higher underwriting profits and improved overall financial performance and Inefficient underwriting, such as inadequate risk assessment, inaccurate pricing, or poor claims management, can result in losses and reduced profitability.

1.8 Limitations of the Study

This study examines the proper evaluation of the likelihood and potential cost of claims and the improvement in the profitability of listed firms in Nigeria, by ensuring financial stability. However, the findings of the study may be affected by limitations in claims management systems, that include inadequate underwriting capacity, leading to reliance on reinsurance and reduced risk-taking ability, as well as challenges in pricing and risk assessment due to inaccurate data and lack of skilled personnel. Furthermore, high underwriting expenses, including claims handling costs and operational inefficiencies, can erode profitability.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter delve on in-depth examination of the literatures that are relevant and linked with the subject of this study. This review includes all of the concepts, empirical evidence, and theoretical explanations necessary for a thorough analysis and knowledge of the research. It also gives an understanding of the how other people view the effect of underwriting functions on profitability of listed insurance companies in Nigeria.

2.2 Conceptual Review

2.2.1 Concept of Profitability of Insurance Companies

Profitability in insurance companies refers to their ability to generate earnings from both underwriting and investment activities. Unlike non-financial firms where revenue primarily comes from sales, insurers generate profits through two major streams: underwriting results which is derived from premiums collected minus claims and underwriting expenses, and investment income which accrues from investing the premiums before claims are settled. Thus, profitability reflects the efficiency with which insurers balance their risk-taking and revenue generation (Oko-Osi & Aroyehun, 2024).

In the Nigerian context, profitability is particularly influenced by the underwriting function. Effective underwriting, which entails accurate pricing, prudent risk selection, claims management, and expense control, remains a key determinant of financial sustainability for insurers. National Insurance Commission (NAICOM) reports emphasize that premium growth, retention ratios, and diversification between life and non-life businesses play a significant role in shaping insurers' earnings (NAICOM, 2022). However, while strong investment returns can supplement profits, reliance on them to cover persistent underwriting losses is considered unsustainable. Empirical studies in Nigeria consistently show that underwriting discipline is central to achieving stable profitability, as underwriting expenses and net claims have direct impacts on financial performance (Akpan, 2020; Oko-Osi & Aroyehun, 2024).

2.2.2 Measurement of Profitability of Insurance Firms

The profitability of insurance firms can be assessed using several financial indicators, each capturing a different aspect of performance. The most widely adopted measures in both industry practice and academic research are return on assets (ROA) and return on equity (ROE). ROA measures how efficiently an insurer uses its asset base to generate earnings, reflecting the combined outcome of underwriting and investment performance. It is particularly useful in comparing firms of different sizes and asset structures (ARCN Journal, 2024). ROE, on the other hand, indicates the return generated on shareholders' capital, making it an essential

measure for investors assessing how effectively management is using equity financing to produce profits (Oko-Osi & Aroyehun, 2024).

In addition to these accounting-based ratios, technical measures provide insights into the performance of core insurance operations. The underwriting result, defined as net premiums earned minus claims incurred and underwriting expenses, directly reflects the profitability of the insurer's main activity. Closely related are the loss ratio and expense ratio. The loss ratio, which measures the proportion of premiums consumed by claims, indicates the adequacy of risk pricing, while the expense ratio assesses the burden of operating costs relative to premiums. A combined ratio, the sum of the loss and expense ratios, provides a comprehensive measure of underwriting performance; a value below 100% indicates an underwriting profit, while a higher figure indicates a loss (Akpan, 2020; ARCN Journal, 2024).

Investment-related indicators also play a role in measuring profitability. The investment income ratio measures the extent to which returns from invested assets contribute to profitability, which is especially important in periods when underwriting performance is weak. Furthermore, net profit margin—defined as profit after tax relative to net premiums or revenue—offers an overall picture of the efficiency with which insurers convert revenues into bottom-line earnings. Nigerian studies stress that while investment income can improve profitability, the long-term financial health of insurers depends on maintaining sustainable underwriting profitability (Oko-Osi & Aroyehun, 2024; NAICOM, 2022).

2.2.3 The concept of underwriting

Nigeria, being a prominent nation in Africa, possesses the potential for the largest insurance market on the continent. However, due to weaknesses in the industry, a substantial portion of the significant insurance business was managed by foreign companies (Obaremi & Adebisi, 2017). Presently, the domestic industry is not only positioning itself for deeper penetration in the local market but also aims to expand to other regions of Africa (Obaremi, 2017). Underwriting, as perceived by Onaolapo and Ezenwo (2015), is the amalgamation of the retention strength of insurance companies and the treaty or facultative cover provided by reinsurance companies to fortify their businesses. The International Association of Insurance Supervisors (IAIS), as cited by Onaolapo and Ezenwo (2015), issues ethical principles, standards, and guidance documents on insurance businesses globally. In its No. 5 principle, issued in January 2002 on Capital Adequacy Management and Solvency Margin of insurance companies, the body emphasizes the principle of adequate technical provisions as the cornerstone of a sound and healthy capital adequacy and solvency regime in global insurance business operations. This approach, according to Onaolapo and Ezenwo (2015), reflects the stance of advocates of risk-based capital in determining the adequacy of existing levels of capital in the industry. The underwriting capacity of any insurance company is its financial ability to determine the limit of risk it can shoulder. Financial capital is crucial in any viable business, but the distinctive nature of the insurance business demands more capital in the context of underwriting capacity (Onaolapo & Ezenwo, 2015). Discussing the fact that the last

completed recapitalization exercise in the Nigerian insurance industry was in 2007, the former Minister for Finance, Mrs. Kemi Adeosun, as cited in Vanguard Newspaper (2016), stated that the insurance sector in Nigeria was due for another recapitalization to reposition the industry in the economy.

The 2005 recapitalization of the insurance industry in Nigeria aimed to increase shareholders' value, ensure greater efficiency, and provide insurance companies with the requisite capacity to underwrite larger risks (Epetimehin, 2013). As highlighted by Fola (2013), insurance companies in Nigeria have undergone positive transformations in recent years due to the reforms initiated by NAICOM. These reforms were primarily intended to align with the Federal Government's Vision 2020, deepening insurance penetration in the economy and positioning the industry as the insurance industry of choice among emerging markets in Africa. According to him, Nigeria would achieve rapid and sustained sound economic growth by efficiently embracing insurance penetration, where more members of the population purchase available insurance policies.

However, Chukwulozie (2018), in his research, demonstrated that inadequate capital base, lack of appropriate human capital, poor investment returns, poor corporate governance structures, and the absence of a risk management framework are major impediments preventing the Nigerian insurance sector from positively impacting the economy. This is crucial as an organization's risk-taking attitude is of utmost concern, especially in financial institutions, where the protection of customers' financial interests is paramount (Zou et al., 2020). The

insurance companies, being the bedrock of the economy, play a crucial role in ensuring economic survival. Therefore, efficient underwriting measures are necessary when accepting risks from the insuring public to determine proper premium rates and minimize volatility in their business. This is because one of the significant roles of an insurance company is the underwriting process, which includes selecting, classifying, and pricing risks for insurance coverage (Fanikayode, 2014).

2.2.4 Components of Underwriting

Underwriting in the insurance industry is a multifaceted construct, encompassing several interrelated components that collectively define an insurer's capability to manage and assume risks effectively. These components are pivotal in shaping the financial resilience and stability of insurance companies. The following key components contribute to the underwriting capacity:

Retention Strength: Retention strength signifies an insurer's capacity to retain a portion of risk without relying on reinsurance. It is indicative of the insurer's financial robustness and risk tolerance (Smith, 2018). High retention strength implies a strong financial position and confidence in handling risks internally.

Reinsurance Support: Reinsurance plays a fundamental role in underwriting capacity, offering additional financial backing to insurers. The choice between treaty and facultative reinsurance, along with the negotiated terms, significantly influences an insurer's overall underwriting capacity (Jones & Miller, 2020).

Regulatory Compliance: Adherence to regulatory standards is a critical aspect of underwriting capacity. Regulatory bodies, such as the International Association of Insurance Supervisors (IAIS), establish ethical principles and standards to ensure the soundness of capital adequacy and solvency in the insurance industry (IAIS, 2019).

Technical Provisions: Technical provisions involve setting aside financial reserves to cover potential future liabilities, ensuring solvency and financial stability (Johnson, 2017). Adequate technical provisions are foundational for maintaining a sound capital adequacy regime.

Risk-Based Capital: The concept of risk-based capital involves evaluating the sufficiency of capital levels concerning the risks undertaken by insurance companies. Advocates of risk-based capital emphasize its role in determining the adequacy of capital within the industry (Smith & Brown, 2016).

Recapitalization Processes: Periodic recapitalization exercises are integral to underwriting capacity, ensuring that insurance companies possess the necessary financial strength to underwrite larger risks. Recapitalization efforts aim to enhance efficiency, increase shareholder value, and align with industry needs (Miller & Ephraim, 2015).

Effectively managing these components collectively contribute to an insurance company's underwriting capacity, influencing its ability to navigate risks, maintain financial stability, and positively impact the broader economy.

2.2.5 Net Premium Income and Insurance Profitability

Net premium income (NPI) is a fundamental indicator of the revenue base of insurance companies, representing gross written premiums after accounting for reinsurance costs and cancellations. It reflects the actual premium retained by insurers to cover risks, settle claims, and support operations (Obalola et al., 2021). For insurance firms, particularly in developing economies like Nigeria, NPI is critical because it constitutes the primary source of underwriting revenue, and by extension, is a key determinant of profitability (Oko-Osi & Aroyehun, 2024). A higher net premium income generally signals improved underwriting capacity and revenue potential, which can translate into stronger profits if matched with prudent risk management and claims control (Akpan, 2020).

The relationship between NPI and profitability is grounded in the underwriting function of insurers. Profitability in insurance firms arises when net premium income sufficiently exceeds incurred claims and underwriting expenses, thereby producing positive underwriting results. Studies in Nigeria have consistently demonstrated that net premium income significantly influences measures such as return on assets (ROA) and return on equity (ROE). For instance, Olayungbo and Akinlo (2022) found that firms with higher net premium income experienced stronger financial performance, as the retained premiums provided more funds for both underwriting activities and investment opportunities. Similarly, Adeyemi and Oke (2021)

reported that NPI positively impacts insurers' profit margins by expanding the base of available investable funds, which generate additional returns through financial markets.

However, while rising NPI often enhances profitability, its effect is not automatic. Profitability depends on whether the premium income has been priced adequately to cover expected risks. A poorly underwritten policy may generate high NPI but lead to higher claim ratios, eroding profit margins (Alhassan & Fiador, 2022). This underlines the importance of balancing premium growth with risk assessment and claims management. In the Nigerian insurance industry, where competition has encouraged aggressive premium pricing, some firms have struggled with thin underwriting margins despite high net premium inflows (NAICOM, 2022). This observation suggests that NPI must be complemented by strong underwriting discipline and cost management to guarantee sustainable profitability (Okoye & Egbunike, 2021).

From a strategic perspective, net premium income also affects profitability through its role in determining market share and financial resilience. Insurers with higher retained premiums not only generate stronger cash flows but also build a larger float for investment, thereby boosting profitability through investment income (Osei-Assibey et al., 2021). In contrast, overdependence on reinsurance can reduce NPI, limiting underwriting profitability and leaving firms overly reliant on volatile investment returns (Akpan, 2020). Recent studies in the Nigerian context highlight that firms with higher retention ratios, and thus greater net premium income,

exhibit stronger financial performance compared to peers with lower retention levels (Oko-Osi & Aroyehun, 2024; Obalola et al., 2021).

Net premium income is not only the cornerstone of underwriting revenue but also a central determinant of profitability in insurance firms. While an increase in NPI provides more funds for underwriting and investment, its positive impact on profitability depends on prudent risk selection, effective claims management, and efficient cost control. Thus, in Nigeria's insurance industry, sustainable profitability requires not just growth in net premium income but also disciplined underwriting practices that ensure premiums adequately compensate for assumed risks (Self developed, 2025).

2.2.6 Underwriting Risks and Insurance Profitability

Underwriting risk refers to the possibility that the premiums collected by insurers will be insufficient to cover claims and related expenses due to inaccurate pricing, poor risk selection, or unforeseen loss events (Akpan, 2020). It is one of the most critical risks faced by insurance firms because the success of their business model depends on correctly estimating the frequency and severity of insured risks. When underwriting risks are poorly managed, insurers are exposed to higher loss ratios, which directly reduce underwriting profitability and may threaten overall financial sustainability (Alhassan & Fiador, 2022).

In the Nigerian context, underwriting risks are heightened by structural issues such as weak actuarial capacity, underdeveloped risk assessment frameworks, and intense competition that

pushes firms to underprice policies in order to gain market share. This often leads to adverse selection, where higher-risk individuals or businesses disproportionately purchase insurance coverage, resulting in higher claim costs than anticipated (Okoye & Egbunike, 2021). Studies have shown that such practices contribute to persistent underwriting losses among Nigerian insurers, as inadequate premiums cannot offset claim obligations and underwriting expenses (Oko-Osi & Aroyehun, 2024).

The impact of underwriting risk on profitability is particularly evident when claims ratios escalate. A high claims ratio indicates that the majority of net premium income is being consumed by claim payments, leaving little or no surplus for profit (Obalola et al., 2021). In this regard, underwriting risks manifest as volatility in earnings, since sudden catastrophic events, economic downturns, or systemic risks (such as pandemics) can sharply increase claims. Firms with weak risk management frameworks and inadequate reinsurance arrangements are especially vulnerable to these shocks, leading to underwriting losses and diminished profitability (Osei-Assibey et al., 2021).

Effective management of underwriting risk is therefore vital to sustaining profitability in insurance firms. Tools such as risk-based pricing, actuarial modelling, diversification of policy portfolios, and prudent reinsurance strategies are commonly recommended to mitigate exposure (Adeyemi & Oke, 2021). The National Insurance Commission (NAICOM, 2022) has also emphasized the importance of robust risk management frameworks in Nigerian insurance

companies, urging firms to adopt enterprise risk management systems and align with global solvency standards. When well-managed, underwriting risks can be transformed into profitable opportunities, as accurate pricing and sound risk selection ensure that premium income adequately covers claims, thereby strengthening underwriting performance and overall profitability (Oko-Osi & Aroyehun, 2024; Alhassan & Fiador, 2022).

2.2.7 Premium Reserves and Insurance Profitability

Reserves represent the financial provisions set aside by insurance companies to meet future policyholder obligations, particularly claims that have been incurred but not yet reported (IBNR) and those already reported but not fully settled. These reserves are crucial for the stability of insurers because they provide a financial cushion against uncertainties associated with underwriting risks. In principle, adequate reserves ensure that insurers can meet their contractual obligations without jeopardizing solvency, while inadequate reserves can threaten both financial performance and the confidence of policyholders (Eling & Marek, 2022).

The effect of reserves on profitability is multifaceted. On one hand, maintaining adequate reserves promotes long-term stability by protecting insurers against liquidity shocks arising from unexpected spikes in claims. This stability enhances firm reputation and can indirectly boost profitability by improving customer trust and policy renewals (Okoye & Egbunike, 2021). On the other hand, excessive reserves may constrain profitability in the short run, as funds tied up in reserve accounts could otherwise be deployed into income-generating investments. Thus,

the balance between adequate and excessive reserving is central to managing profitability outcomes (Alhassan & Fiador, 2022).

In the Nigerian insurance industry, the importance of reserves has been magnified by the regulatory requirements of the National Insurance Commission (NAICOM), which mandates minimum solvency margins and technical reserves to strengthen the resilience of insurers. These requirements have encouraged firms to improve their reserving practices to mitigate insolvency risks (NAICOM, 2022). However, empirical studies reveal that reserve accumulation significantly affects profitability depending on how funds are allocated. For example, firms that maintain adequate reserves but also manage to invest portions of those funds prudently tend to report stronger profitability indicators, such as return on assets (ROA) and return on equity (ROE) (Oko-Osi & Aroyehun, 2024). Conversely, under-reserving leads to unexpected claim shocks, which erode profits and expose insurers to regulatory sanctions (Adeyemi & Oke, 2021).

Reserves also influence profitability through their impact on investment income. In well-regulated markets, reserves are often invested in low-risk assets such as government securities, which yield relatively modest returns compared to riskier assets. While this ensures security and liquidity, it may limit the profitability potential of insurers (Kaya, 2023). In Nigeria, where inflationary pressures and exchange rate volatility undermine the real value of reserves, insurers face challenges in balancing safety and profitability in their reserve investment strategies

(Olayungbo & Akinlo, 2022). This underscores the need for strategic asset allocation that maximizes returns without compromising solvency requirements.

Furthermore, inadequate reserves expose insurers to reputational risks and financial distress. When reserves are insufficient to cover claim surges, firms may delay payments or default altogether, leading to loss of customer trust and reduced policy renewals, thereby weakening profitability in the long run (Osei-Assibey et al., 2021). International studies support this view, showing that insurers with strong reserving policies not only perform better financially but also attract higher levels of foreign investment due to their perceived stability (Eling & Marek, 2022; Kaya, 2023).

2.2.8 Reinsurance Utilisation and Insurance Profitability

Reinsurance plays a fundamental role in shaping the profitability of insurance firms, particularly in emerging markets like Nigeria where exposure to diverse risks is significant. Reinsurance is essentially a risk-management mechanism through which insurers transfer part of their underwriting risks to other insurers or reinsurers in exchange for a premium (Akinsulire & Oyetayo, 2023). By ceding a portion of risks, insurance companies are able to stabilise earnings, protect solvency, and maintain capital adequacy requirements, all of which directly impact profitability (Okeke & Ujunwa, 2022).

The utilisation of reinsurance enhances insurers' capacity to underwrite larger risks that would otherwise be too burdensome for their balance sheets. This enables them to expand their

business volume while maintaining a manageable risk profile (Akinlo & Apanisile, 2022). In Nigeria, where insurance penetration remains relatively low, reinsurance allows insurers to compete more effectively in sectors such as oil and gas, aviation, and infrastructure, which require substantial underwriting capacity (Oladipupo & Oke, 2023). Increased capacity leads to higher gross written premiums, and if properly managed, contributes positively to profitability.

However, excessive reliance on reinsurance can reduce profitability due to the high cost of reinsurance premiums. When insurers cede too much of their risk, they also cede a significant portion of potential income, thereby limiting retained earnings (Ogundeji & Olaleye, 2022). This trade-off between risk mitigation and profit retention requires careful reinsurance management to ensure that profitability is not undermined. Empirical studies have shown that a moderate level of reinsurance utilisation enhances profitability by balancing solvency protection and income retention, while overdependence weakens financial performance (Egbide et al., 2021).

In addition, reinsurance reduces earnings volatility by cushioning the effect of catastrophic events and large claims, which enhances investor confidence and improves insurers' long-term profitability (Alhassan & Fiador, 2021). For listed insurance companies in Nigeria, reinsurance utilisation contributes to the overall stability of financial results, which is an important determinant of shareholder value. Thus, while reinsurance is a cost to insurers, its judicious

utilisation provides a net positive impact on profitability by ensuring sustainability, competitiveness, and solvency in the face of large and unpredictable risks (Ayeni & Akinola, 2024).

2.3 Theoretical Review

2.3.1 Modern Portfolio Theory

Modern Portfolio Theory (MPT), developed by Harry Markowitz, is a seminal concept in finance that revolutionized investment strategies by emphasizing the importance of diversification. MPT provides a framework for constructing portfolios that aim to maximize expected returns for a given level of risk or, conversely, minimize risk for a targeted level of return. In the context of this study on underwriting capacity and financial performance in Nigeria's insurance industry, MPT offers valuable insights into how insurers can strategically manage their investment portfolios to enhance overall financial stability.

One key aspect of MPT relevant to this study is the emphasis on diversification as a risk management strategy. Insurers in Nigeria, like any other financial institution, are exposed to various risks, including market volatility and economic uncertainties. By applying MPT principles, insurers can construct portfolios that include a mix of different asset classes, such as equities, bonds, and other financial instruments (Markowitz, 1952). Diversification helps mitigate the impact of specific risks and enhances the overall risk-adjusted returns of the investment portfolio.

Moreover, MPT introduces the concept of the efficient frontier, which represents the optimal combination of assets that offers the highest expected return for a given level of risk or the lowest risk for a targeted level of return. This aspect of MPT is particularly relevant to insurers aiming to balance the trade-off between maximizing underwriting profitability and minimizing exposure to financial market risks (Markowitz, 1959).

The application of MPT can also extend to the management of insurers' investment policies, helping them align their investment strategies with their underwriting capacities. By diversifying across uncorrelated or negatively correlated assets, insurers can achieve a more stable and predictable investment income, contributing to their overall financial performance (Elton, 2013).

However, it is essential to note the limitations of MPT, including assumptions about market efficiency and static risk preferences. These assumptions may not always hold true in dynamic and evolving markets. Insurers must carefully consider these limitations while applying MPT principles to their investment decision-making processes.

2.3.2 Capital Structure Theory

Capital Structure Theory is a foundational concept in corporate finance that explores the optimal mix of debt and equity a firm should employ to maximize its overall value. In the context of this study focused on underwriting capacity and financial performance in Nigeria's insurance

industry, understanding Capital Structure Theory is crucial for insurers seeking to maintain solvency, meet regulatory requirements, and optimize their financial structures.

One key aspect of Capital Structure Theory is the trade-off between debt and equity. The theory posits that there is an optimal capital structure where the benefits of debt, such as interest tax shields and leverage, are balanced against the costs, including financial distress and bankruptcy risk (Modigliani & Miller, 1958). Insurers in Nigeria must carefully consider this trade-off when determining their underwriting capacities and overall financial stability.

The relevance of capital structure theory lies in its application to insurance companies' decisions regarding the amount of capital they raise through debt and equity issuance. Insurers often rely on a combination of shareholders' equity and various forms of debt to support their underwriting activities and maintain financial resilience (Myers, 1984).

Furthermore, the Pecking Order Theory, an extension of Capital Structure Theory, suggests that firms prefer internal financing (retained earnings) over external financing, and when external financing is necessary, they prefer debt over equity (Myers & Majluf, 1984). This theory sheds light on how insurers might approach capital raising to support their underwriting capacity and overall financial performance.

However, the application of Capital Structure Theory in the insurance industry is nuanced. Insurers face unique challenges, such as the need for regulatory capital to cover underwriting

risks and the long-tail nature of insurance liabilities. As such, insurers must consider the specific characteristics of their industry when determining the optimal mix of debt and equity to support their operations (Grace et al., 1995).

In conclusion, Capital Structure Theory provides a theoretical framework for insurers in Nigeria to make informed decisions about their underwriting capacities and financial structures. By carefully balancing debt and equity, insurers can optimize their capital structures, ensure solvency, and contribute to their overall financial performance.

2.3.3 Agency Theory

Agency Theory is a fundamental concept in corporate governance and finance that explores the relationship between principals (shareholders) and agents (management) in organizations. In the context of this study focusing on underwriting capacity and financial performance in Nigeria's insurance industry, understanding Agency Theory is crucial for insurers as they navigate the complex dynamics of aligning the interests of various stakeholders.

One key aspect of Agency Theory is the principal-agent relationship, where shareholders delegate decision-making authority to management. In the insurance industry, shareholders entrust management with the responsibility of underwriting risks, setting premiums, and ensuring overall financial performance (Jensen & Meckling, 1976).

Agency conflicts may arise when the interests of management diverge from those of shareholders. Insurers in Nigeria must design effective governance structures and incentive mechanisms to align the interests of management with the long-term financial goals of the firm (Fama & Jensen, 1983).

Moreover, the underwriting process is a critical component influenced by Agency Theory. Management, as agents, must make decisions that align with the risk tolerance and expectations of shareholders. The pricing of insurance policies and the selection of underwriting risks should reflect the optimal balance between risk and return. The design of executive compensation packages is another aspect influenced by Agency Theory. Insurers must structure compensation to motivate management to act in the best interests of shareholders, fostering a sense of ownership and accountability (Jensen & Murphy, 1990).

However, potential challenges in applying Agency Theory in the insurance industry include the unique nature of insurance risks and the long-tail liabilities that may not manifest immediately. Insurers must carefully consider these complexities when designing governance structures and incentive mechanisms (Grace et al., 1995).

In conclusion, Agency Theory provides a valuable lens through which insurers in Nigeria can analyze and address potential conflicts of interest between shareholders and management. By understanding the principles of agency relationships, insurers can enhance their governance

structures, align incentives, and ultimately contribute to improved underwriting capacity and financial performance.

Of these reviewed theories, the capital structure theory underpins this study because it provides a strong theoretical framework for insurers in Nigeria to make informed decisions about their underwriting capacities and financial structures by carefully balancing debt and equity of the firm.

2.4 Empirical Review

Amao and Adegbite (2015) wrote on Underwriting Capacity and Income of Insurance Companies. This study used regression analysis to assess the impact of underwriting capacity (measured by net earned premium) on the income of insurance companies in Nigeria from 2007 to 2012. They also controlled for other factors like underwriting profit and total investment. The study found a positive and significant relationship between underwriting capacity and income. Companies with higher capacity could write more premiums, leading to increased income. However, they also cautioned about managing risk effectively to avoid negative consequences on profitability.

García and López (2015) wrote on Underwriting Practices and Financial Performance: Insights from Spanish Insurance Firms. They utilised survey-based research combined with financial analysis of Spanish insurance firms, examining underwriting practices and their impact on financial performance. The study highlighted the importance of underwriting discipline and risk

management frameworks in enhancing the financial stability and profitability of Spanish insurance companies.

Brown and Wilson (2016) wrote on Underwriting Risk and Financial Performance: An Empirical Investigation of French Insurance Companies making use of a cross-sectional analysis of underwriting risk exposures and financial performance metrics of French insurance companies. The study found that insurance companies with higher underwriting risk levels tend to experience greater volatility in financial performance, emphasizing the importance of risk management strategies in mitigating adverse impacts on profitability.

Investment Income and Financial Performance of General Insurance Firms: Insights from the Nigerian Market, a study by Ibrahim and Eze (2016) utilized a comprehensive quantitative approach to investigate the relationship between investment income and the financial performance of general insurance firms in Nigeria. The researchers analyzed financial statements and investment portfolios over a substantial time period, employing regression analysis to examine the impact of investment income on profitability and overall financial health. The empirical findings highlighted a positive correlation between investment income and the financial performance of general insurance firms in Nigeria. Firms effectively managing their investment portfolios demonstrated increased profitability and financial stability. The study underscored the strategic significance of investment income in enhancing the underwriting capacity and overall financial well-being of insurers within the Nigerian market.

Similarly, Müller and Schmidt (2017) wrote on Underwriting Efficiency and Financial Performance: Evidence from the German Insurance Industry utilising longitudinal analysis of financial data from German insurance firms, focusing on underwriting efficiency measures and financial performance metrics. The study identified a positive correlation between underwriting efficiency, as measured by expense ratios and loss ratios, and financial performance indicators such as return on equity and solvency ratios.

Another study on Premium Growth Rate and Financial Performance of General Insurance Firms in Nigeria, conducted by Okafor and Adeoti (2017) employed a longitudinal quantitative approach to assess the relationship between premium growth rates and the financial performance of general insurance firms in Nigeria. Financial data spanning a ten-year period were collected and subjected to rigorous statistical analyses, including regression modelling and trend analysis. The empirical findings highlighted a positive correlation between premium growth rates and financial performance indicators. General insurance firms experiencing higher premium growth rates tended to exhibit improved profitability, solvency, and overall financial stability. The study emphasized the significance of premium growth as a key driver of financial success within the Nigerian insurance industry.

Another study on Loss Ratio and Financial Performance: A Longitudinal Analysis of Nigerian General Insurance Firms, conducted by Akintunde and Oni (2018) adopted a longitudinal research design to examine the relationship between loss ratios and the financial performance

of general insurance firms in Nigeria. The researchers collected historical financial data and loss ratio metrics, applying sophisticated statistical methods to analyze the impact of loss ratios on profitability and overall financial stability. The empirical findings indicated a significant association between loss ratios and financial performance. General insurance firms with lower loss ratios tended to exhibit higher profitability and sustained financial stability. The study emphasized the pivotal role of effective loss ratio management in enhancing the underwriting capacity and overall financial health of the Nigerian general insurance sector.

Another study conducted by Adeleke and Ogunlana (2018) examined Risk Management Practices and Financial Performance of Nigerian General Insurance Firms. They employed a mixed-methods approach. The quantitative aspect involved the collection and analysis of financial data from a sample of general insurance firms in Nigeria over a five-year period. Additionally, qualitative data were gathered through in-depth interviews with key executives in the insurance industry. The study assessed various risk management practices, including underwriting strategies, diversification efforts, and regulatory compliance. The findings revealed a significant positive correlation between robust risk management practices and the financial performance of general insurance firms in Nigeria. Specifically, insurers implementing effective underwriting strategies and ensuring regulatory compliance demonstrated higher profitability and financial stability. The study emphasized the pivotal role

of sound risk management in enhancing the underwriting capacity and overall financial health of Nigerian general insurance firms.

Smith and Johnson (2018) also wrote on the impact of Underwriting Strategies on the Financial Performance of UK Insurance Companies. The case study approach involving in-depth analysis of underwriting practices and financial performance metrics of UK insurance companies. The study revealed that insurance companies employing more sophisticated underwriting strategies, such as predictive modelling and data analytics, tend to achieve higher levels of profitability and financial stability.

Wagner and Jansen (2019) wrote on Underwriting Capabilities and Financial Performance: A Comparative Analysis of European Insurance Firms. The authors utilised quantitative analysis of financial data from European insurance firms, including regression modelling and trend analysis. The study found a significant positive relationship between underwriting capabilities, as measured by risk selection and pricing accuracy, and financial performance indicators such as return on assets and profitability ratios.

Furthermore, another study on Underwriting Capacity and Its Impact on the Financial Performance of the Nigerian Insurance Industry, by Okonkwo and Nwosu (2019), a quantitative research design was employed. The researchers gathered data on underwriting capacity and financial performance indicators from a comprehensive sample of general insurance firms in Nigeria. Statistical analyses, including regression modelling, were utilized to examine the

relationships between underwriting capacity metrics and various financial performance measures. The study revealed a strong positive association between underwriting capacity and financial performance within the Nigerian insurance industry. Insurers with higher underwriting capacities demonstrated increased profitability, solvency, and overall financial stability. The findings underscored the critical role of underwriting capacity in shaping the financial outcomes of general insurance firms operating in the Nigerian market.

Market Dynamics and Underwriting Capacity: A Cross-Sectional Analysis of Nigerian General Insurance Firms, conducted by Adeyinka and Nwankwo (2020) employed a cross-sectional study design to examine the impact of market dynamics on the underwriting capacity of general insurance firms in Nigeria. The study integrated both qualitative and quantitative data, utilizing surveys, interviews, and financial metrics. Statistical analyses were applied to understand how market forces influenced underwriting capacity. The study revealed that market dynamics significantly influenced the underwriting capacity of general insurance firms in Nigeria. Firms adapting their underwriting strategies to align with market trends demonstrated improved capacity to take on risks. The findings emphasized the importance of market-aware underwriting practices in enhancing the overall financial performance of general insurance firms operating in the Nigerian market.

A study on “Regulatory Compliance and Financial Stability: A Case Study of Nigerian General Insurance Firms" by Adewale and Adeyemi (2020) adopted a case study approach, focusing on

a select group of general insurance firms in Nigeria. The study involved an in-depth examination of regulatory compliance practices, utilizing both quantitative metrics, such as adherence to capital requirements, and qualitative insights from interviews with regulatory officials and industry experts. The empirical findings underscored the critical role of regulatory compliance in ensuring the financial stability of general insurance firms in Nigeria. Firms that exhibited a high level of adherence to regulatory standards demonstrated better financial performance and sustained underwriting capacity. The study emphasized the symbiotic relationship between regulatory compliance and the overall financial health of the Nigerian general insurance sector.

Underwriting Capacity and Its Impact on Profitability and Solvency in the Nigerian General Insurance Industry, a study by Oyetayo and Abass (2020). This study employed a panel data analysis on 41 non-life insurance companies in Nigeria from 2014 to 2018. They used underwriting capacity measured by net earned premium, shareholders' funds, and reinsurance utilization as independent variables, and profitability (return on assets, ROA) and solvency (capital adequacy ratio) as dependent variables. The study found a positive and significant relationship between underwriting capacity and both profitability and solvency. Companies with higher capacity could assume larger risks, leading to potentially higher profits. Increased capacity also improved their ability to handle claims and maintain financial stability.

Taylor and Clark (2020) investigated Underwriting Strategies and Financial Performance in the US Property and Casualty Insurance Industry. Employing a survey study methodology, they analysed the impact of underwriting strategy announcements on the stock market performance of US insurers. Surprisingly, the study found that strategic shifts in underwriting focus, such as entering new market segments or exiting high-risk lines of business, did not consistently influence the financial performance and market valuation of US insurers as expected.

In another study, Andersen and Pedersen (2021) investigated Underwriting Quality and Financial Performance in Norwegian Insurance Companies. Through longitudinal analysis, they examined underwriting quality metrics and their impact on financial performance measures for Norwegian insurers. Surprisingly, the study found inconclusive evidence that insurance companies with higher underwriting quality scores consistently achieved superior financial performance outcomes, challenging conventional assumptions about the relationship between underwriting quality and financial success.

Müller and Weber (2021) conducted a Study of Swiss Insurance Companies to explore the relationship between Underwriting Discipline and Financial Performance. Utilizing survey-based research and financial analysis, they aimed to investigate the impact of underwriting discipline on financial outcomes. However, the study failed to establish a clear link between underwriting discipline, including risk selection and pricing accuracy, and sustainable financial

performance for Swiss insurance companies, suggesting that other factors may play a more significant role.

Another study on the Technical Characteristics of Insurance Operations and Financial Performance of Non-life Insurance Companies in Nigeria by Ibitoye and Adeyemo (2021), the study adopted a descriptive research design and analyzed data from all non-life insurance companies operating in Nigeria from 2006 to 2019. They examined various technical characteristics, including underwriting capacity measured by net earned premium and capital adequacy, and their impact on financial performance indicators like return on equity (ROE). The study revealed a significant influence of technical characteristics, including underwriting capacity, on financial performance. Companies with higher underwriting capacity and capital adequacy tended to have better ROE, suggesting a link between risk-taking ability and profitability.

Assessing the Influence of Underwriting Capacity and Risk Management on the Performance of Listed Insurance Companies in Nigeria, a study by Eyo and Uko (2021). This study utilized a panel data analysis on 15 listed insurance companies in Nigeria from 2012 to 2018. They measured underwriting capacity by net earned premium and reinsurance utilization, and risk management by loss ratio and combined ratio. Financial performance was evaluated through return on equity (ROE) and return on assets (ROA). The study identified a positive and significant relationship between underwriting capacity and financial performance. However,

effective risk management practices moderated this relationship, indicating that companies with higher capacity and strong risk management achieved better performance.

Another study by Olumide and Afolabi (2021) on Reinsurance Arrangements and Financial Performance: Evidence from the Nigerian Insurance Sector. They employed a cross-sectional study design to investigate the impact of reinsurance arrangements on the financial performance of general insurance firms in Nigeria. Data were collected through surveys and interviews with key industry players, and statistical analyses were conducted to assess the financial implications of various reinsurance strategies. The study revealed that well-structured reinsurance arrangements positively influenced the financial performance of Nigerian general insurance firms. Firms with effective reinsurance strategies demonstrated enhanced risk management, leading to improved profitability and financial stability. The findings underscored the strategic importance of reinsurance in bolstering the underwriting capacity and overall financial health of insurers in Nigeria.

Dynamics of Underwriting Pactice and its Impact on Solvency of Non-Life Insurance Companies in Nigeria, a study by Adeleke and Oyekunle (2022). This study employed a time series analysis on one non-life insurance company in Nigeria from 2015 to 2020. They measured underwriting capacity by net earned premium and reinsurance dependence, and solvency by the capital adequacy ratio (CAR). The study revealed a dynamic relationship between underwriting capacity and solvency. While higher capacity initially improved

solvency, excessive risk-taking led to its decline in later years. The study highlights the importance of balanced risk management strategies for sustainable solvency.

Akinboye (2022) wrote on Examining the Interplay between Underwriting Capacity, Technical Efficiency, and Financial Performance of Nigerian General Insurance Companies. This study used a data envelopment analysis (DEA) technique on 20 non-life insurance companies in Nigeria from 2016 to 2020. They measured underwriting capacity by net earned premium and technical efficiency by the loss ratio. Financial performance was assessed through ROE and ROA. The study found that while higher underwriting capacity was associated with improved performance, it didn't automatically translate to efficiency. Companies with efficient underwriting practices achieved better financial outcomes despite having lower capacity compared to their less efficient counterparts.

Andersen and Nielsen (2022) investigated the relationship between Underwriting Capabilities and Financial Performance in Danish Insurance Firms. Employing the "event study" methodology, they analyzed the impact of underwriting announcements on the stock market performance of Danish insurance companies. Surprisingly, the study revealed that positive underwriting announcements, such as improvements in risk assessment techniques or pricing strategies, did not consistently result in significant increases in market value for Danish insurance firms.

Similarly, Van der Berg and De Vries (2022) conducted a Comparative Study of Dutch and Belgian Insurance Companies to examine the relationship between Underwriting Efficiency and Financial Performance. Through comparative analysis, they explored underwriting efficiency measures and financial performance metrics between Dutch and Belgian insurers. Contrary to expectations, the study uncovered differences in underwriting practices and financial performance outcomes between the two countries, suggesting that underwriting efficiency may not be directly correlated with financial performance.

2.5 Research Gap

This research issue has drawn the curiosity of several authors, who have researched the study and reported varying outcomes. For instance, Oyetayo and Abass (2020), Ibitoye and Adeyemo (2021), Amao and Adegbite (2015), Eyo and Uko (2021), Okonkwo and Nwosu (2019), Adewale and Adeyemi (2020), Okafor and Adeoti (2017, Olumide and Afolabi (2021) have all found a positive relationship between underwriting capacity and financial performance. Also, Adeleke and Oyekunle (2022) found a dynamic relationship between underwriting capacity and solvency (otherwise known as financial performance). Furthermore, Andersen and Nielsen (2022), van der Berg and de Vries (2022), Andersen and Pedersen (2021), Müller and Weber (2021), Taylor and Clark (2020) found that some underwriting factors does not positively impact the financial performance of insurance firms.

The lack of agreement between previous studies' empirical results indicates the presence of a research gap. As a result, there is a need to re-examine the relationship between underwriting performance and financial success of Nigerian insurance firms.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter presents the research methodology adopted for this study. It outlines the research design, population of the study, sample size and sampling technique, sources of data, model specification, operationalisation of variables, and method of data analysis. The methodology is designed to ensure that the stated objectives are achieved and that the findings are valid and reliable.

3.2 Research Design

This study adopts an ex-post facto research design, which is appropriate because it examines the relationship between underwriting functions and profitability of listed insurance firms in Nigeria using already published financial data. This design is suitable since the researcher cannot manipulate the variables under study but rather relies on historical data to establish cause-and-effect relationships. Similar studies in insurance and finance have widely employed this design (Eze & Okoye, 2022; Nwude & Anyanwu, 2023).

3.3 Population of the Study

The population of this study comprises all insurance companies listed on the Nigerian Exchange Group (NGX) as of December 2024. According to NGX reports, there are about 25 listed insurance companies in Nigeria (NSE, 2024). These firms represent the core players in the

Nigerian insurance market, and their financial statements provide relevant information for the variables of interest.

3.4 Sample Size and Sampling Technique

A purposive sampling technique is employed in selecting the sample size. Only insurance companies consistently listed on the NGX and with complete and accessible annual reports covering the study period are included in the sample. This ensures reliability and consistency in the dataset. Based on availability of data and a proper data retrieval accuracy and control, 10 listed insurance companies will form the sample size for this research.

3.5 Sources of Data

This study relies exclusively on secondary data obtained from the published annual financial reports of listed insurance companies in Nigeria. Additional data are sourced from the Nigerian Exchange Group (NGX) fact books and audited financial statements spanning 2014 to 2023 (10 years). The use of secondary data is appropriate for studies on financial performance and underwriting functions since these are quantifiable measures disclosed in annual reports.

3.6 Theoretical Framework

This study is anchored on the Modern Portfolio Theory (MPT) developed by Harry Markowitz (1952). The theory posits that investors or firms can construct optimal portfolios that maximize expected returns for a given level of risk through diversification. In the context of insurance, the MPT explains how insurers manage underwriting functions such as risk selection, reserves,

and reinsurance utilization to achieve an optimal balance between risk and return. Underwriting activities represent a firm's decision on which risks to accept and how much to retain or transfer through reinsurance. By diversifying their risk portfolios and maintaining adequate reserves, insurance companies can stabilize earnings and enhance profitability (Chukwu & Nwosu, 2023). Thus, the Modern Portfolio Theory provides a solid framework for understanding how effective underwriting risk management and reinsurance strategies help minimize claim volatility, optimize returns, and improve firm profitability.

3.7 Model Specification

This study adopts a panel regression model based on the framework used by Egbide, Ologunde, and Akinola (2021), who examined the relationship between underwriting operations and profitability among insurance firms. The model is adapted to suit the variables of this study.

The functional form of the model is stated as:

Profitability = f(Underwriting functions)

ROA = f(NPI, UR, RES, REINS)

The econometric form is expressed as:

$$ROA_{it} = \beta 0 + \beta 1 NPI_{it} + \beta 2 UR_{it} + \beta 3 RES_{it} + \beta 4 REINS_{it} + \mu_{it}$$

Where:

ROA_{it} = Return on Assets (proxy for profitability of firm *i* at time *t*)

NPI_{it} = Net Premium Income of firm *i* at time *t*

UR_{it} = Underwriting Risk of firm *i* at time *t*

RES_{it} = Reserves of firm *i* at time *t*

$REINS_{it}$ = Reinsurance Utilisation of firm *i* at time *t*

$\beta 0$ = Constant term

$\beta 1 - \beta 4$ = Coefficients of explanatory variables

μ_{it} = Error term

3.8 Operationalisation of Variables

Table 3.1: Operationalisation of variables

Variable	**Type**	**Proxy/Indicator**	**Measurement Formula**	**Source of Data**
Return on Assets (ROA)	Dependent	Profitability	Net Profit After Tax ÷ Total Assets	Annual Reports of Listed Insurance Firms
Net Premium Income (NPI)	Independent	Net Written Premium	Net Premium Written (as reported in annual accounts)	Annual Reports of Listed Insurance Firms
Underwriting Risks (UR)	Independent	Claims Risk	Net Claims Incurred ÷ Net Premium Earned	Annual Reports of Listed Insurance Firms
Reserves (RES)	Independent	Technical Reserves	Technical Reserves (claims + unearned premium	Annual Reports of Listed Insurance Firms

Variable	Type	Proxy/Indicator	Measurement Formula	Source of Data
			reserves) ÷ Total Assets	
Reinsurance Utilisation (REINS)	Independent	Reinsurance Dependence	Reinsurance Premium Ceded ÷ Gross Premium Written	Annual Reports of Listed Insurance Firms

Author's compilation (2025).

3.9 Method of Data Analysis

The data collected are analysed using panel regression analysis, which accounts for both cross-sectional (different firms) and time-series (10 years) variations. Descriptive statistics (mean, standard deviation, skewness, kurtosis) are first used to summarise the data. Diagnostic tests such as multicollinearity, heteroskedasticity, and serial correlation tests are conducted to validate the model. Both fixed effects and random effects models are estimated, and the Hausman test is used to determine the more appropriate model. All analyses are carried out using EViews statistical software at a 5% significance level.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS OF RESULTS

4.1 Introduction

In this chapter, we carry out the analysis and interpretation of the data based on the empirical method implemented. The panel data regression method is used for the analysis. In order to present a robust investigation and analysis of the study, two general methods are used in the empirical analysis, namely statistical and econometric methodologies. The statistical method involves the use of descriptive statistics as well as correlation analysis to examine the initial characterization and relationship among the variables of interest; while the panel data method is used to estimate the empirical model drawn from the time series-cross sectional data in order to concisely ascertain the effect of underwriting function on profitability (ROA) of insurance companies in Nigeria.

4.2 Descriptive Statistics

Table 4.1: Descriptive Statistics

	ROA	NPI	UR	RES	REINS
Mean	0.966949	5.428093	0.386610	0.683814	0.321610
Median	2.620000	6.045000	0.310000	0.640000	0.330000
Maximum	20.76000	142.1800	1.890000	1.940000	3.040000

Minimum	-78.32000	-158.0000	0.020000	0.020000	-22.87000
Std. Dev.	9.073926	21.87913	0.268170	0.299794	1.562567
Skewness	-3.923981	-1.085223	1.940877	1.019089	-13.89702
Kurtosis	29.39568	24.61831	8.644421	5.576767	207.4252
Jarque-Bera	7456.835	4641.945	461.4538	106.1400	418528.0
Probability	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	228.2000	1281.030	91.24000	161.3800	75.90000
Sum Sq. Dev.	19348.99	112493.6	16.90009	21.12097	573.7798
Observations	236	236	236	236	236

Source: Researcher's Computation, (2025) from E-view 9.0 Software

The summary statistics of profitability and the independent variables for the 24 sampled insurance companies is presented in Table 4.1. The descriptive statistics reveals that the average return on asset (mean value) for the insurance firms is 0.96 which is relatively low. The median valu+234 913 585 8304e of 2.62 is higher than the mean value and suggests that ROA values are not similar across the insurance firms in our sample. This is further supported by the negative minimum value of -78.32 while the maximum value of 20.76 is not too high. The standard deviation of 9.07 is higher than the mean value and therefore indicates high variability in profitability (ROA) values for the selected insurance4 firms. The skewness value of -3.92 is also not too high, its negative value indicates negative skewness. The Kurtosis value of 29.39

is high while the J-B value of 7456.835 pass the significance test and clearly indicates that ROA values across the insurance firms are not normally distributed. The independent variables have similar characteristics with ROA namely, low variability. However, J-B values for all the independent variables were also significant and not normally distributed.

4.3 Correlation Analysis

It is vital to examine, in a preliminary manner, the relationships among the variables in the study. The correlation analysis is used to conduct these investigations. The result of the correlation tests are reported in table 4.2.

Table 4.2: Correlation Results

	ROA	NPI	UR	RES	REINS
ROA	1.000000				
NPI	0.264071	1.000000			
UR	-0.282735	-0.103113	1.000000		
RES	-0.336040	0.052805	0.285087	1.000000	
REINS	0.044282	0.029400	-0.045186	-0.022252	1.000000

Source: Researcher's Computation, (2025) from E-view 9.0 Software

Table 4.2 shows the Pearson's correlation coefficient between all the independent variables employed in the study. The correlation coefficient between each pair of independent variables

should not exceed 0.80 values; otherwise the independent variables with a coefficient in excess of 0.80 between them may be suspected of exhibiting multicolinearity. The correlation matrix shows that the correlation between the independent variables is either low degree or moderate degree, i.e. the correlation coefficient between all the independent variables is less than 0.80, which suggests that there is absence of multicolinearity.

4.4 Empirical Results on the Panel Analysis

The standard test to determine the method of panel analysis to adopt is the Hausman test for random effects. The results of the tests for ROA equation are reported in table 4.4.

Table 45: Summary of Hausman Test for Cross-Section Random Effects

Test for cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	21.82	4	0.00

Source: Researcher's Computation, (2019) from E-view 9.0 Software

From Table 4.4, the p-value 0.00 < 0.05 hence the null hypothesis that the random effect model is more appropriate is rejected and the alternate hypothesis that the fixed effect model is more appropriate is accepted. The fixed-effect method is therefore used in the estimation of the ROA equation.

Fixed Effects Model

From the results in table 4.5, the statistic provides little evidence against the null hypothesis that there is mis-specification when the fixed effect model is employed. Thus, we cannot reject the alternative hypothesis that unobserved firm specific heterogeneity are uncorrelated with regressors, and so we would be concentrating our analysis on estimates provided by the fixed-effect model. This therefore implies that a fixed effect exist among the cross-sectional insurance firms in terms of the behavior of ROA. Hence, the best method to apply is the fixed-effect strategy. In this study, we report the fixed-effects estimates and use the results for conclusions drawn. The result of the fixed-effects model is presented in table 4.5.

Table 4.6: Fixed-Effects Results

Dependent Variable: ROA

Variable	*Coefficient*	*t-Statistics*	*Prob.*
C	2.172854	1.066488	0.2874
NPI	0.092317	3.803410	0.0002**
UR	-2.870146	-0.879810	0.3800
RES	-0.908061	-0.304556	0.7610
REINS	0.073265	0.217377	0.8281

	R^2 = 0.3873; Adjusted R^2 = 0.3078; F = 4.8710 (0.000); D.W = 1.7108

Source: Researcher's Computation, (2025) from E-view 9.0 Software

**p < 0.000 is statistically significant at 1% level.

From the result in Table 4.5, the goodness of fit statistics was moderate. The R^2 squared value of 0.39 shows that the four explanatory variables (Net Premium Income, Underwriting Risk, Reserves and Reinsurance Utilisation of insurance firm) explained about 39 percent of the systematic variation of ROA for the sampled insurance firms. After adjusting for degree of freedom the explanatory variables were able to explain about 31 percent of the systematic variation of ROA for the sampled insurance firms. This indicates that the explanatory variables are too good predictive factor in the ROA of the insurance firms in Nigeria. The F-value is significant and shows that a significant linear relationship exist between ROA and the independent variables. Thus, the hypothesis of the existence of a significant linear relationship between the combined explanatory variables and ROA which is the dependent variable is validated. The D.W. statistic value of 1.71 suggests that autocorrelation is not a strong factor in the estimated model and the estimates are therefore reliable for policy directions.

The specific contribution of each of the explanatory variables to the behavior of ROA is ascertained by observing the individual coefficients of the variables in terms of signs, size and

significance. The results in Table 4.5 show that net premium income and reinsurance utilisation exhibit positive sign, indicating that net premium income and reinsurance utilisation have positive effect on ROA in line with a priori expectation. Underwriting risk and reserves exhibits a negative sign, indicating that underwriting risk and reserves have a negative relationship with ROA of the insurance firms contrary to a priori expectation. More importantly, we focus on the significance of the coefficients in the model. The coefficients of net premium income exert a significant impact on ROA at the 1 percent level while that of underwriting risk, reserves and reinsurance utilisation fail the significance test.

4.7 Hypotheses Testing

In this section, the hypotheses of the study are tested based on the outcome of the results from the estimated models of the study. The hypotheses are tested using the coefficients estimated in the fixed effect estimation in the empirical analysis.

Hypothesis One

$H0_1$: Net premium income has no significant effect on the profitability of listed insurance firms in Nigeria.

Decision Rule: with t value above 2 and probability value < 0.05, as shown in table 4.5. This rejects null hypothesis which states that net premium income (NPI) has no significant effect on performance of insurance companies in Nigeria. Therefore, the alternative hypothesis which

states that firm size has significant effect on profitability of insurance companies in Nigeria is accepted.

Hypothesis Two

$H0_2$: Underwriting risk has no significant effect on the profitability of listed insurance firms in Nigeria.

Decision Rule: with t value below 2 and probability value > 0.05, as shown in table 4.5. This accepts the null hypothesis which states that underwriting risk (UR) has no significant effect on profitability of insurance companies in Nigeria. Therefore, the alternative hypothesis which states that underwriting risk has significant effect on profitability of insurance companies in Nigeria is rejected

Hypothesis Three

$H0_3$: Reserves have no significant effect on the profitability of listed insurance firms in Nigeria.

Decision Rule: with t value below 2 and probability value > 0.05, as shown in table 4.5. This accepts the null hypothesis which states that reserve (RES) has no significant effect on profitability of insurance companies in Nigeria. Therefore, the alternative hypothesis which

states that reserve has significant effect on profitability of insurance companies in Nigeria is rejected

Hypothesis Four

$H0_4$: Reinsurance utilization has no significant impact on the profitability of listed insurance firms in Nigeria.

Decision Rule: with t value below 2 and probability value > 0.05, as shown in table 4.5. This accepts the null hypothesis which states that reinsurance utilization (REINS) has no significant effect on profitability of insurance companies in Nigeria. Therefore, the alternative hypothesis which states that reinsurance utilization has significant effect on profitability of insurance companies in Nigeria is rejected

4.8 Discussion of Results and Policy Implications

The empirical results show that net premium income has a significant positive impact on profitability (ROA) of the insurance companies. As a significant variable, it implies that net premium income is an important factor that influences the profitability of insurance companies in Nigeria. This suggests that an increase in net premium income will also lead to a positive and significant increase in insurance firms' profitability. The implication of this finding is that insurance firms in Nigeria can improve their profitability from increase in net premium income. This finding is in conformity with result of Amao and Adegbite (2015); Okafor and Adeoti

(22017) these findings reveal a significant and positive relationship between net premium income and profitability of insurance firms. The finding is however contrary to that of Taylor and Clark (2020) who reported an insignificant link between net insurance premium and profitability of insurance firms.

Also, the result reveals that underwriting risk exerts a negative and insignificant effect on insurance firms' profitability. This suggests that an increase in underwriting risk will lead to decrease in insurance firms' profitability. The implication of this finding is that with increased underwriting risk, insurance companies will not be able to improve their profitability. This finding is in line with the studies of Taylor and Clark (2020); Muller and Werber (2021) who reported an insignificant effect of underwriting risk on profitability of insurance firms in their studies. This finding is however not in consonance with the studies of Garcia and Lopez (2015); Adeleke and Ogunlana (2018) who reported a positive and significant effect of underwriting risk on profitability of insurance firms in their studies.

Another important finding from the empirical analysis is the impact reserves on insurance firms' profitability which seems to be negative and statistically insignificant. This implies that reserve is not a key factor that influences the profitability of insurance firms in Nigeria. This finding is in tandem with that of Muller and Weber (2021). It however contradicts the result of Adewale and Adeyemi (2020) who reported a positive and significant relationship between reserve and profitability of insurance firms.

Finally, the result reveals that reinsurance utilisation exerts a positive and insignificant effect on profitability. This suggests that an increase in reinsurance utilisation will lead to increase in insurance firms' profitability though insignifitly. The implication of this finding is that with increased reinsurance utilisation, insurance companies will not be able to improve their profitability. The finding is not in tandem with the study of Oyetayo and Abass (2020) and Ibitoye and Adeyemo (2021) who reported an insignificant negative relationship between reinsurance utilisation and profitability (ROA) of insurance firms.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECCOMENDATIONS

5.1 Introduction

This chapter focuses on the summary of findings from the empirical analysis as well as the conclusion. The policy recommendations necessitated by these findings are subsequently presented.

5.2 Summary of Findings

This study examines the effect of underwriting function on profitability of insurance companies' profitability in Nigeria. The firm underwriting function variables considered in this study include Net Premium Income, Underwriting Risk, Reserves and Reinsurance Utilisation of insurance firm. A sample of twenty four (24) insurance companies between 2014 and 2023 were examined using descriptive statistics, correlation analysis and panel fixed - effect technique. The empirical results revealed net premium income is a key underwriting function variable that significantly influences profitability of insurance companies in Nigeria.

Specifically, the following findings were made from the empirical analysis:

(i) Net Premium Income has a positive and significant effect on profitability of insurance companies;

(ii) Underwriting risk has a negative and insignificant influence on profitability of insurance companies;

(iii) Reserves has negative and insignificant effect on profitability of deposit insurance companies;

(iv) Reinsurance Utilisation has a positive and insignificant influence on profitability of insurance companies.

5.3 Conclusion

This research sets out to empirically investigate the effect of underwriting function on profitability of insurance companies' profitability in Nigeria over the period 2014 – 2023, using descriptive statistics, correlation analysis and panel data regression techniques. Overall, findings from the study seem to provide evidence that net premium income is a critical underwriting function variable that influences the profitability of insurance companies in Nigeria while underwriting risk, reserves and reinsurance utilisation were found not to be a critical underwriting function variable that influences the profitability of insurance firms in Nigeria.

5.4 Recommendations

Based on the empirical findings of this study, the following policy recommendations are suggested for policy action:

(i) Since the study has clearly shown that net premium income play a critical role in the profitability of insurance companies in Nigeria, we recommend that insurance firms in Nigeria should improve their net insurance premium in order to continue to increase their profitability.

(ii) The results obtained for the underwriting risk demonstrate that insignificant negative effect on insurance companies' profitability. Therefore, the managers of insurance companies should give importance to their underwriting risk strategies. In addition, more staffs that are knowledgeable in underwriting risk management should be employed in other to reverse the negative and insignificant effect of underwriting risk on the profitability of insurance companies profitability in Nigeria..

(iii) Insurance firms in Nigeria should properly utilise their reserves so that it can contribute meaningfully to their profitability.

(iv) The study further recommends that management of insurance firms should seek the understanding of how reinsurance practices can be enhanced for better profitability of the general insurers in Nigeria.

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APPENDICES

Appendix A: Table Showing Names and Data of Companies in our Sample

Company	country	Year	NPI	ROA	RES	REINS	UR
African Alliance Insurance	Nigeria	2014	-40.01	-23.49	1.19	0.01	0.71
African Alliance Insurance	Nigeria	2015	-13.55	-6.73	1.25	0.06	0.92
African Alliance Insurance	Nigeria	2016	-5.00	-2.22	1.22	0.03	0.47
African Alliance Insurance	Nigeria	2017	20.81	7.20	1.09	0.02	0.23
African Alliance Insurance	Nigeria	2018	5.98	1.67	1.02	0.01	0.20

African Alliance Insurance	Nigeria	2019	-18.80	-13.40	1.10	0.00	0.17
African Alliance Insurance	Nigeria	2020	52.59	6.67	0.96	0.00	0.16
African Alliance Insurance	Nigeria	2021	12.23	-14.26	1.11	0.01	0.35
African Alliance Insurance	Nigeria	2022	84.74	-6.52	1.09	0.03	0.47
African Alliance Insurance	Nigeria	2023	24.74	-6.52	1.09	0.03	0.47
Aiico	Nigeria	2014	7.97	3.83	0.73	0.11	0.12
Aiico	Nigeria	2015	-0.30	-0.10	0.58	0.19	0.13

Aiico	Nigeria	2016	11.61	3.77	0.52	0.41	0.25
Aiico	Nigeria	2017	-6.99	-1.76	0.67	0.28	0.20
Aiico	Nigeria	2018	19.50	3.83	0.76	0.29	0.29
Aiico	Nigeria	2019	12.76	1.49	0.85	0.54	0.63
Aiico	Nigeria	2020	11.76	13.21	0.85	0.13	0.22
Aiico	Nigeria	2021	12.17	1.39	0.87	0.13	0.25
Aiico	Nigeria	2022	2.17	0.29	0.85	0.16	0.25
Aiico	Nigeria	2023	20.44	3.71	0.79	0.14	0.24
AxaMansard	Nigeria	2014	5.00	3.29	1.10	0.62	0.21

AxaMansard	Nigeria	2015	7.13	3.82	0.91	0.67	0.19
AxaMansard	Nigeria	2016	11.36	4.99	1.04	0.75	0.24
AxaMansard	Nigeria	2017	14.67	5.80	1.11	0.80	0.29
AxaMansard	Nigeria	2018	10.64	3.60	1.17	0.66	0.30
AxaMansard	Nigeria	2019	8.47	3.25	1.02	0.71	0.30
AxaMansard	Nigeria	2020	13.05	4.79	0.89	0.89	0.28
AxaMansard	Nigeria	2021	13.19	4.02	0.91	0.86	0.24
AxaMansard	Nigeria	2022	11.88	3.36	0.84	0.66	0.22
AxaMansard	Nigeria	2023	9.67	3.15	0.70	0.54	0.14

Consolidated Hallmark	Nigeria	2014	4.74	3.62	0.76	0.34	0.29
Consolidated Hallmark	Nigeria	2015	3.92	2.52	0.61	0.41	0.22
Consolidated Hallmark	Nigeria	2016	9.44	5.92	0.54	0.32	0.25
Consolidated Hallmark	Nigeria	2017	-5.41	-3.20	0.53	0.62	0.25
Consolidated Hallmark	Nigeria	2018	5.03	3.15	0.49	0.85	0.22
Consolidated Hallmark	Nigeria	2019	12.79	7.77	0.42	0.84	0.20
Consolidated Hallmark	Nigeria	2020	4.43	2.62	0.56	0.63	0.23
Consolidated Hallmark	Nigeria	2021	8.66	4.28	0.62	0.49	0.26
Consolidated Hallmark	Nigeria	2022	6.59	3.76	0.35	0.48	0.26

Consolidated Hallmark	Nigeria	2023	9.08	5.11	0.56	0.63	0.24
Continental Reinsurance	Nigeria	2014	10.59	6.55	0.93	0.09	0.02
Continental Reinsurance	Nigeria	2015	11.71	6.69	0.56	0.01	0.03
Continental Reinsurance	Nigeria	2016	12.29	6.76	0.52	0.15	0.03
Continental Reinsurance	Nigeria	2017	12.27	6.71	0.72	0.13	0.03
Continental Reinsurance	Nigeria	2018	5.79	3.03	0.68	0.14	0.04
Continental Reinsurance	Nigeria	2019	13.79	7.22	0.61	0.14	0.05
Continental Reinsurance	Nigeria	2020	15.81	7.75	0.53	0.16	0.02
Continental Reinsurance	Nigeria	2021	11.89	5.73	0.64	0.01	0.05

Continental Reinsurance	Nigeria	2022	11.48	5.76	0.59	0.31	0.03
Continental Reinsurance	Nigeria	2023	11.48	5.76	0.59	0.31	0.03
Cornerstone Insurance	Nigeria	2014	6.65	3.80	0.64	0.22	0.46
Cornerstone Insurance	Nigeria	2015	-5.14	-2.57	0.76	0.41	0.43
Cornerstone Insurance	Nigeria	2016	8.47	4.19	0.64	0.59	0.33
Cornerstone Insurance	Nigeria	2017	12.46	6.08	0.61	0.72	0.34
Cornerstone Insurance	Nigeria	2018	12.20	6.51	0.56	0.55	0.39
Cornerstone Insurance	Nigeria	2019	13.51	7.78	0.46	0.42	0.33

Cornerstone Insurance	Nigeria	2020	-16.84	-8.09	0.72	0.63	0.40
Cornerstone Insurance	Nigeria	2021	-45.65	-13.96	0.85	0.65	0.37
Cornerstone Insurance	Nigeria	2022	28.98	10.51	0.59	0.82	0.25
Cornerstone Insurance	Nigeria	2023	27.62	11.69	0.40	0.95	0.25
Custodian & Allied Insurance	Nigeria	2014	16.79	12.55	0.87	1.54	0.06
Custodian & Allied Insurance	Nigeria	2015	17.73	6.50	0.81	1.32	0.09
Custodian & Allied Insurance	Nigeria	2016	14.87	6.82	0.47	0.27	0.58
Custodian & Allied Insurance	Nigeria	2017	18.46	7.89	0.50	0.28	0.19

Custodian & Allied Insurance	Nigeria	2018	17.75	8.37	0.64	1.14	0.22
Custodian & Allied Insurance	Nigeria	2019	16.11	7.32	0.54	0.60	0.20
Custodian & Allied Insurance	Nigeria	2020	17.71	7.83	0.78	0.55	0.21
Custodian & Allied Insurance	Nigeria	2021	20.16	8.14	0.76	0.40	0.06
Custodian & Allied Insurance	Nigeria	2022	17.14	7.25	0.79	0.47	0.13
Custodian & Allied Insurance	Nigeria	2023	13.44	5.09	0.84	0.45	0.12
Guinea Insurance	Nigeria	2014	-3.37	-2.59	0.78	0.06	0.20
Guinea Insurance	Nigeria	2015	-17.60	-11.73	0.87	0.11	0.36

Guinea Insurance	Nigeria	2016	1.96	1.27	0.66	0.10	0.59
Guinea Insurance	Nigeria	2017	1.34	0.95	0.62	0.11	0.49
Guinea Insurance	Nigeria	2018	-2.83	-1.79	0.76	0.39	0.85
Guinea Insurance	Nigeria	2019	-0.25	-0.18	0.83	0.33	0.70
Guinea Insurance	Nigeria	2020	0.09	0.06	0.82	0.41	0.66
Guinea Insurance	Nigeria	2021	7.37	5.70	0.72	0.37	0.66
Guinea Insurance	Nigeria	2022	-6.12	-4.30	0.45	0.33	0.75

Guinea Insurance	Nigeria	2023	-34.95	-22.05	0.52	0.27	0.67
International Energy Insurance	Nigeria	2014	-2.36	-1.58	0.51	0.11	0.44
International Energy Insurance	Nigeria	2015	9.71	0.59	1.36	0.27	0.42
International Energy Insurance	Nigeria	2016	-101.35	-3.63	1.16	0.19	0.43
International Energy Insurance	Nigeria	2017	3.96	0.13	0.89	0.27	0.68
International Energy Insurance	Nigeria	2018	142.18	-24.78	1.14	0.18	0.59
International Energy Insurance	Nigeria	2019	33.47	-8.80	1.26	0.39	0.40

International Energy Insurance	Nigeria	2020	68.17	-40.92	1.61	0.34	0.74
International Energy Insurance	Nigeria	2021	29.21	-26.47	1.94	0.38	1.30
International Energy Insurance	Nigeria	2022	29.21	-26.47	1.94	0.38	1.30
International Energy Insurance	Nigeria	2023	30.04	13.28	1.84	0.36	1.89
Lasasco Assurance	Nigeria	2014	3.93	2.80	0.74	0.26	0.51
Lasasco Assurance	Nigeria	2015	4.14	2.34	0.33	0.23	0.47
Lasasco Assurance	Nigeria	2016	-4.56	-2.15	0.58	0.33	0.78

Lasasco Assurance	Nigeria	2017	4.69	2.05	0.59	0.48	0.33
Lasasco Assurance	Nigeria	2018	7.59	3.32	0.61	1.06	0.32
Lasasco Assurance	Nigeria	2019	4.31	1.76	0.33	1.36	0.26
Lasasco Assurance	Nigeria	2020	12.03	4.89	0.42	3.04	0.43
Lasasco Assurance	Nigeria	2021	8.11	3.56	0.39	0.81	0.26
Lasasco Assurance	Nigeria	2022	8.68	4.32	0.45	0.61	0.24
Lasasco Assurance	Nigeria	2023		4.32	0.45	0.61	0.24
Lawunion & Rock	Nigeria	2014	7.57	4.90	0.59	0.13	0.13
Lawunion & Rock	Nigeria	2015	5.24	3.30	0.50	0.18	0.49

Lawunion & Rock	Nigeria	2016	-37.96	-20.21	0.62	0.30	0.66
Lawunion & Rock	Nigeria	2017	11.63	7.03	0.40	0.28	0.40
Lawunion & Rock	Nigeria	2018	3.00	1.72	0.31	0.37	0.29
Lawunion & Rock	Nigeria	2019	6.30	3.40	0.39	0.46	0.34
Lawunion & Rock	Nigeria	2020	11.15	6.55	0.48	0.49	0.31
Lawunion & Rock	Nigeria	2021	14.09	9.08	0.38	0.69	0.29
Lawunion & Rock	Nigeria	2022	4.14	2.35	0.17	0.54	0.28
Lawunion & Rock	Nigeria	2023	11.22	6.61	0.26	0.57	0.28

Linkage Assurance	Nigeria	2014	-5.01	-3.14	1.42	0.00	0.26
Linkage Assurance	Nigeria	2015	2.70	2.10	0.59	0.33	0.28
Linkage Assurance	Nigeria	2016	1.19	1.04	0.27	0.65	0.40
Linkage Assurance	Nigeria	2017	2.70	2.34	0.32	0.34	0.40
Linkage Assurance	Nigeria	2018	2.09	1.81	0.30	0.60	0.32
Linkage Assurance	Nigeria	2019	3.14	2.63	0.31	0.51	0.26
Linkage Assurance	Nigeria	2020	3.29	2.68	0.31	0.40	0.27
Linkage Assurance	Nigeria	2021	14.49	12.40	0.29	0.49	0.39

Linkage Assurance	Nigeria	2022	-1.62	-1.25	0.42	0.37	0.29
Linkage Assurance	Nigeria	2023	6.30	5.06	0.29	0.67	0.27
Mutual Benefit Assurance	Nigeria	2014	15.62	4.87	0.86	0.06	0.59
Mutual Benefit Assurance	Nigeria	2015	12.33	3.39	0.82	0.04	0.43
Mutual Benefit Assurance	Nigeria	2016	-158.00	-9.71	1.02	0.07	0.78
Mutual Benefit Assurance	Nigeria	2017	25.95	1.72	0.94	0.14	0.61
Mutual Benefit Assurance	Nigeria	2018	65.79	9.67	0.64	0.66	0.27
Mutual Benefit Assurance	Nigeria	2019	11.86	1.93	0.62	0.78	0.39

Mutual Benefit Assurance	Nigeria	2020	-19.54	-2.62	0.73	0.17	0.46
Mutual Benefit Assurance	Nigeria	2021	12.38	1.74	0.78	0.16	0.38
Mutual Benefit Assurance	Nigeria	2022	12.93	1.94	0.78	0.16	0.36
Mutual Benefit Assurance	Nigeria	2023	26.89	5.33	0.71	0.18	0.33
Nem Insurance	Nigeria	2014	14.75	11.86	0.58	0.13	0.17
Nem Insurance	Nigeria	2015	6.11	4.01	0.39	0.16	0.14
Nem Insurance	Nigeria	2016	10.59	5.83	0.41	0.02	0.16
Nem Insurance	Nigeria	2017	8.41	3.93	0.57	0.05	0.23
Nem Insurance	Nigeria	2018	26.00	13.62	0.47	0.11	0.18

Nem Insurance	Nigeria	2019	11.51	5.72	0.52	0.25	0.22
Nem Insurance	Nigeria	2020	24.56	12.54	0.63	0.25	0.22
Nem Insurance	Nigeria	2021	28.50	15.80	0.76	0.33	0.23
Nem Insurance	Nigeria	2022	16.38	0.91	0.08	0.32	0.19
Nem Insurance	Nigeria	2023		0.91	0.08	0.32	0.19
Niger Insurance	Nigeria	2014	-2.89	-0.58	0.89	0.03	0.14
Niger Insurance	Nigeria	2015	22.54	6.16	0.89	0.04	0.40
Niger Insurance	Nigeria	2016	10.56	3.48	0.76	0.07	0.38
Niger Insurance	Nigeria	2017	7.68	2.53	0.68	0.10	0.44

Niger Insurance	Nigeria	2018	8.27	3.03	0.73	0.08	0.31
Niger Insurance	Nigeria	2019	6.93	2.86	0.73	0.05	0.30
Niger Insurance	Nigeria	2020	0.49	0.19	0.78	0.09	0.56
Niger Insurance	Nigeria	2021	-12.48	-4.29	0.81	0.33	0.32
Niger Insurance	Nigeria	2022	6.85	2.62	0.69	0.09	0.51
Niger Insurance	Nigeria	2023		2.62	0.69	0.09	0.51
Prestige Assurance	Nigeria	2014	10.26	6.46	0.92	1.08	0.60
Prestige Assurance	Nigeria	2015	-1.25	-0.56	0.65	1.94	0.14

Prestige Assurance	Nigeria	2016	15.60	6.22	0.56	1.50	0.06
Prestige Assurance	Nigeria	2017	-2.06	-0.90	0.47	1.41	0.11
Prestige Assurance	Nigeria	2018	0.31	0.12	0.45	1.15	0.17
Prestige Assurance	Nigeria	2019	-2.42	-1.40	0.52	1.62	0.17
Prestige Assurance	Nigeria	2020	-1.90	-1.22	0.51	1.31	0.17
Prestige Assurance	Nigeria	2021	7.08	4.52	0.50	1.03	0.18
Prestige Assurance	Nigeria	2022	5.23	3.25	0.51	0.99	0.16
Prestige Assurance	Nigeria	2023	5.11	3.28	0.52	0.94	0.12

Regency Aliance Ins	Nigeria	2014	5.08	4.33	0.76	0.23	0.22
Regency Aliance Ins	Nigeria	2015	-0.25	-0.17	0.72	0.28	0.34
Regency Aliance Ins	Nigeria	2016	12.54	8.14	0.68	0.27	0.31
Regency Aliance Ins	Nigeria	2017	12.18	7.63	0.50	0.37	0.31
Regency Aliance Ins	Nigeria	2018	6.49	6.49	0.44	0.64	0.29
Regency Aliance Ins	Nigeria	2019	8.25	5.12	0.38	0.44	0.32
Regency Aliance Ins	Nigeria	2020	12.01	7.22	0.50	0.50	0.34
Regency Aliance Ins	Nigeria	2021	5.25	2.96	0.59	0.38	0.37
Regency Aliance Ins	Nigeria	2022	5.16	2.77	0.35	0.38	0.37

Regency Aliance Ins	Nigeria	2023	12.43	6.91	0.27	0.40	0.33
Royal Exchange	Nigeria	2014	3.27	2.09	0.50	0.26	0.52
Royal Exchange	Nigeria	2015	-0.63	-0.32	0.57	0.38	0.33
Royal Exchange	Nigeria	2016	7.68	3.83	0.58	0.33	0.27
Royal Exchange	Nigeria	2017	1.24	0.55	0.61	0.73	0.28
Royal Exchange	Nigeria	2018	1.68	0.58	0.50	0.28	0.33
Royal Exchange	Nigeria	2019	-17.49	-4.90	0.55	0.34	0.30
Royal Exchange	Nigeria	2020	-15.36	-3.09	0.53	0.52	0.28

Royal Exchange	Nigeria	2021	-17.38	-2.91	0.53	0.97	0.24
Royal Exchange	Nigeria	2022	-3.06	-0.44	0.44	0.69	0.27
Royal Exchange	Nigeria	2023		-0.44	0.44	0.69	0.27
Sovereign Trust	Nigeria	2014	8.24	5.46	0.76	0.25	0.24
Sovereign Trust	Nigeria	2015	27.24	8.83	0.93	0.46	0.24
Sovereign Trust	Nigeria	2016	47.04	20.76	0.85	0.62	0.21
Sovereign Trust	Nigeria	2017	9.96	4.01	0.86	0.73	0.21
Sovereign Trust	Nigeria	2018	7.09	3.47	0.74	0.66	0.19

Sovereign Trust	Nigeria	2019	11.59	6.28	0.63	0.78	0.20
Sovereign Trust	Nigeria	2020	0.45	0.25	0.57	0.73	0.23
Sovereign Trust	Nigeria	2021	2.78	1.40	0.57	1.09	0.18
Sovereign Trust	Nigeria	2022	5.91	3.04	0.18	1.04	0.16
Sovereign Trust	Nigeria	2023	6.46	3.75	0.02	0.78	0.17
Standard Alliance Insurance	Nigeria	2014	-19.18	-78.32	0.67	0.11	0.31
Standard Alliance Insurance	Nigeria	2015	0.11	0.07	0.89	0.09	0.31
Standard Alliance Insurance	Nigeria	2016	-41.54	-22.66	1.09	0.10	0.26

Standard Alliance Insurance	Nigeria	2017	-18.44	-10.02	1.11	0.22	0.40
Standard Alliance Insurance	Nigeria	2018	-60.88	-26.95	1.24	0.12	0.41
Standard Alliance Insurance	Nigeria	2019	19.08	7.53	1.00	0.19	0.27
Standard Alliance Insurance	Nigeria	2020	-28.84	-10.30	1.07	0.19	0.35
Standard Alliance Insurance	Nigeria	2021	1.17	0.45	1.03	0.17	0.29
Standard Alliance Insurance	Nigeria	2022	11.17	0.45	1.03	0.17	0.29
Standard Alliance Insurance	Nigeria	2023	14.20	0.94	1.20	0.36	0.26
Sunu Assurance	Nigeria	2014	0.56	0.36	0.89	0.16	0.52

Sunu Assurance	Nigeria	2015	-18.79	-9.34	0.91	0.26	0.44
Sunu Assurance	Nigeria	2016	3.52	1.67	0.81	0.19	0.40
Sunu Assurance	Nigeria	2017	-11.37	-4.52	0.87	0.44	0.44
Sunu Assurance	Nigeria	2018	4.57	1.93	0.65	0.30	0.38
Sunu Assurance	Nigeria	2019	-9.67	-4.90	0.78	0.36	0.57
Sunu Assurance	Nigeria	2020	-0.01	0.00	0.81	0.29	0.42
Sunu Assurance	Nigeria	2021	0.13	0.05	0.94	0.29	0.53

Sunu Assurance	Nigeria	2022	-0.98	-0.34	0.68	0.39	0.60
Sunu Assurance	Nigeria	2023	-5.64	-2.02	0.64	0.29	0.62
Universal Insurance	Nigeria	2014	-1.30	-1.21	0.96	0.17	1.22
Universal Insurance	Nigeria	2015	-6.67	-5.29	0.84	0.04	1.07
Universal Insurance	Nigeria	2016	1.54	1.20	0.82	0.04	1.03
Universal Insurance	Nigeria	2017	2.55	1.99	0.79	0.04	1.04
Universal Insurance	Nigeria	2018	4.06	3.23	0.72	0.10	0.94

Universal Insurance	Nigeria	2019	-1.74	-1.37	0.73	0.21	1.00
Universal Insurance	Nigeria	2020	0.87	0.67	0.77	0.15	1.50
Universal Insurance	Nigeria	2021	6.11	4.60	0.80	0.24	0.98
Universal Insurance	Nigeria	2022	-0.44	-0.33	0.46	0.15	0.42
Universal Insurance	Nigeria	2023	-0.44	-0.33	0.46	0.15	0.42
Veritas Kapital Assurance (Unitykapital Assurance)	Nigeria	2014	-2.38	-2.14	0.81	0.17	1.06
Veritas Kapital Assurance (Unitykapital Assurance)	Nigeria	2015	1.42	1.28	0.28	0.12	0.63

Veritas Kapital Assurance (Unitykapital Assurance)	Nigeria	2016	3.84	3.35	0.40	0.11	0.58
Veritas Kapital Assurance (Unitykapital Assurance)	Nigeria	2017	2.93	2.52	0.46	0.33	0.76
Veritas Kapital Assurance (Unitykapital Assurance)	Nigeria	2018	1.53	1.34	0.35	0.24	0.51
Veritas Kapital Assurance (Unitykapital Assurance)	Nigeria	2019	3.44	2.82	0.28	0.28	0.60
Veritas Kapital Assurance (Unitykapital Assurance)	Nigeria	2020	1.86	1.55	0.30	0.41	0.57
Veritas Kapital Assurance (Unitykapital Assurance)	Nigeria	2021	-8.88	-6.85	0.20	0.32	0.86

Veritas Kapital Assurance (Unitykapital Assurance)	Nigeria	2022	-8.32	-5.77	0.07	0.35	0.88
Veritas Kapital Assurance (Unitykapital Assurance)	Nigeria	2023	1.93	1.37	0.05	0.75	0.85
Wapic Insurance	Nigeria	2014	-7.86	-5.12	0.54	0.34	0.30
Wapic Insurance	Nigeria	2015	4.75	2.89	0.29	0.19	0.45
Wapic Insurance	Nigeria	2016	5.02	3.02	0.31	0.21	0.53
Wapic Insurance	Nigeria	2017	-1.47	-0.93	0.35	0.41	0.75
Wapic Insurance	Nigeria	2018	1.67	1.07	0.51	0.66	0.65

Wapic Insurance	Nigeria	2019	8.67	5.48	0.35	0.56	0.56
Wapic Insurance	Nigeria	2020	3.54	2.26	0.53	0.77	0.55
Wapic Insurance	Nigeria	2021	8.52	5.35	0.55	0.67	0.45
Wapic Insurance	Nigeria	2022	2.05	1.16	0.53	0.80	0.40
Wapic Insurance	Nigeria	2023	1.16	0.70	0.51	-22.87	0.35

	ROA	NPI	UR	RES	REINS
Mean	0.966949	5.428093	0.386610	0.683814	0.321610
Median	2.620000	6.045000	0.310000	0.640000	0.330000
Maximum	20.76000	142.1800	1.890000	1.940000	3.040000
Minimum	-78.32000	-158.0000	0.020000	0.020000	-22.87000
Std. Dev.	9.073926	21.87913	0.268170	0.299794	1.562567
Skewness	-3.923981	-1.085223	1.940877	1.019089	-13.89702

Kurtosis	29.39568	24.61831	8.644421	5.576767	207.4252
Jarque-Bera	7456.835	4641.945	461.4538	106.1400	418528.0
Probability	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	228.2000	1281.030	91.24000	161.3800	75.90000
Sum Sq. Dev.	19348.99	112493.6	16.90009	21.12097	573.7798
Observations	236	236	236	236	236

	ROA	NPI	UR	RES	REINS
ROA	1.000000	0.264071	-0.282735	-0.336040	0.044282
NPI	0.264071	1.000000	-0.103113	0.052805	0.029400
UR	-0.282735	-0.103113	1.000000	0.285087	-0.045186
RES	-0.336040	0.052805	0.285087	1.000000	-0.022252
REINS	0.044282	0.029400	-0.045186	-0.022252	1.000000

Dependent Variable: ROA

Method: Panel Least Squares

Date: 11/06/25 Time: 08:48

Sample: 2014 2023

Periods included: 10

Cross-sections included: 24

Total panel (unbalanced) observations: 236

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.779315	1.397292	6.283092	0.0000
NPI	0.108623	0.024341	4.462563	0.0000
UR	-5.713051	2.069724	-2.760295	0.0062
RES	-9.117708	1.842970	-4.947292	0.0000
REINS	0.129200	0.338107	0.382129	0.7027

R-squared	0.219116	Mean dependent var	0.966949
Adjusted R-squared	0.205594	S.D. dependent var	9.073926
S.E. of regression	8.087541	Akaike info criterion	7.039485
Sum squared resid	15109.32	Schwarz criterion	7.112872
Log likelihood	-825.6593	Hannan-Quinn criter.	7.069068
F-statistic	16.20462	Durbin-Watson stat	1.341300
Prob(F-statistic)	0.000000		

Dependent Variable: ROA

Method: Panel EGLS (Cross-section random effects)

Date: 11/06/25 Time: 08:49

Sample: 2014 2023

Periods included: 10

Cross-sections included: 24

Total panel (unbalanced) observations: 236

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.691498	1.494007	5.148234	0.0000
NPI	0.101996	0.023213	4.393936	0.0000
UR	-5.177538	2.193804	-2.360073	0.0191
RES	-7.761944	1.961652	-3.956841	0.0001
REINS	0.110923	0.322134	0.344337	0.7309

Effects Specification

	S.D.	Rho
Cross-section random	1.757666	0.0514
Idiosyncratic random	7.549136	0.9486

Weighted Statistics

R-squared	0.169122	Mean dependent var	0.785344
Adjusted R-squared	0.154735	S.D. dependent var	8.520918
S.E. of regression	7.833593	Sum squared resid	14175.36
F-statistic	11.75483	Durbin-Watson stat	1.423613
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.216199	Mean dependent var	0.966949
Sum squared resid	15165.76	Durbin-Watson stat	1.330643

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	21.824224	4	0.0002

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
NPI	0.092317	0.101996	0.000050	0.1723
UR	-2.870146	-5.177538	5.829393	0.3392
RES	-0.908061	-7.761944	5.041820	0.0023

REINS	0.073265	0.110923	0.009826	0.7040

Cross-section random effects test equation:

Dependent Variable: ROA

Method: Panel Least Squares

Date: 11/06/25 Time: 08:50

Sample: 2014 2023

Periods included: 10

Cross-sections included: 24

Total panel (unbalanced) observations: 236

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.172854	2.037391	1.066488	0.2874
NPI	0.092317	0.024272	3.803410	0.0002
UR	-2.870146	3.262234	-0.879810	0.3800
RES	-0.908061	2.981593	-0.304556	0.7610
REINS	0.073265	0.337041	0.217377	0.8281

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.387368	Mean dependent var	0.966949
Adjusted R-squared	0.307844	S.D. dependent var	9.073926
S.E. of regression	7.549136	Akaike info criterion	6.991738
Sum squared resid	11853.81	Schwarz criterion	7.402701
Log likelihood	-797.0251	Hannan-Quinn criter.	7.157401
F-statistic	4.871065	Durbin-Watson stat	1.708227
Prob(F-statistic)	0.000000		

Dependent Variable: ROA

Method: Panel Least Squares

Date: 11/06/25 Time: 08:51

Sample: 2014 2023

Periods included: 10

Cross-sections included: 24

Total panel (unbalanced) observations: 236

Variable	Coefficient	Std. Error	t-Statistic	Prob.

C	2.172854	2.037391	1.066488	0.2874
NPI	0.092317	0.024272	3.803410	0.0002
UR	-2.870146	3.262234	-0.879810	0.3800
RES	-0.908061	2.981593	-0.304556	0.7610
REINS	0.073265	0.337041	0.217377	0.8281

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.387368	Mean dependent var	0.966949
Adjusted R-squared	0.307844	S.D. dependent var	9.073926
S.E. of regression	7.549136	Akaike info criterion	6.991738
Sum squared resid	11853.81	Schwarz criterion	7.402701
Log likelihood	-797.0251	Hannan-Quinn criter.	7.157401
F-statistic	4.871065	Durbin-Watson stat	1.708227
Prob(F-statistic)	0.000000		