# THE IMPACT OF MACROECONOMIC FACTORS ON THE PERFORMANCE OF NON-LIFE INSURANCE INDUSTRY IN NIGERIA

***BY***

**Sandra Pamela EHIGIATOR**
**MGS1908308**

**DEPARTMENT OF BANKING AND FINANCE**
**FACULTY OF MANAGEMENT SCIENCES**
**UNIVERSITY OF BENIN, EDO, NIGERIA**

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**INSURANCE PROGRAMME**
**DEPARTMENT OF BANKING AND FINANCE**
**FACULTY OF MANAGEMENT SCIENCES**
**UNIVERSITY OF BENIN, EDO, NIGERIA**

**A RESEARCH PROJECT WRITTEN AND SUBMITTED TO THE DEPARTMENT OF BANKING AND FINANCE (INSURANCE PROGRAMME), FACULTY OF MANAGEMENT SCIENCES, UNIVERSITY OF BENIN, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE (B.Sc) IN INSURANCE, IN THE UNIVERSITY OF BENIN, BENIN CITY**

**OCTOBER, 2023**

## DECLARATION

I declare that This project work is based on a study undertaken by me in the Department of Banking and Finance (Insurance Programme), University of Benin under the supervision of **DR. O. G OMOROKUNWA.**

All ideas and views are product of my personal research effort and all references to works of others have been duly acknowledged.

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**SANDRA PAMELA EHIGIATOR** **Date**

## CERTIFICATION

This is to certify that Sandra Pamela EHIGIATOR (MGS1908308) submitted this research work to the Department of Banking and Finance (Insurance Programme), Faculty of Management Sciences, University of Benin, Benin City.

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**DR. O. G. OMOROKUNWA** **Date**
(Project Supervisor)

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**DR. J. OBAYAGBONA** **Date**
(Project coordinator)

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**DR. O. G. OMOROKUNWA** **Date**
Ag Head of Department of Banking and Finance

## DEDICATION

This research work is dedicated to GOD Almighty for making the journey of four years a success, and also to my mother, Mrs Mabel Ehigiator and elder sister Mrs Valentina Ehigiator Osamudiamen.

## ACKNOWLEDGEMENTS

First and foremost, I begin by offering my profound thanks to the Lord for His divine guidance and unwavering presence throughout the course of this research project. It is through His grace and wisdom that I have found the strength and inspiration to embark on this journey of knowledge. His boundless blessings have illuminated every step of this path, and for that, I am eternally grateful.

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## ABSTRACTS

*This study investigates the impacts of macroeconomic factors on the performance of the non-life insurance industry in Nigeria. It specifically examines the impact of inflation, exchange rates and interest rates on the performance of non-life insurance businesses. The research covers the period from 2015 to 2021, focusing on 20 non-life insurance companies operating in Nigeria.*

*The panel ordinary least square (OLS) method was used to examine the relationship between the dependent and independent variables. The study reveals that inflation rate, interest rate, exchange rate and GDP have a strong impact on the performance of non-life insurance firms in Nigeria.*

*It is therefore recommended that the industry must adapt to prevailing macroeconomic conditions and innovate to introduce new products and services.*

# CHAPTER ONE

# INTRODUCTION

## 1.1 Background to the Study

Insurance is a financial product that provides individuals and organizations with protection against various types of risks and potential losses. Insurance is a contractual agreement in which one party agrees to compensate the other party for losses from certain specified events (Williams & Kensicki, 2015). The purpose of insurance is to transfer the risk of potential losses from the insured to the insurer, thereby providing a sense of security and peace of mind to individuals and organizations. Insurance is essentially a way of spreading risks among a large number of people or organizations, so that the cost of any one loss is borne by many (Mueller, 2018). Insurance provides financial protection and peace of mind to individuals and businesses, by allowing them to transfer the financial risks of potential losses to the insurer.

There are two classifications of insurance: life insurance and non-life insurance. Life insurance provides financial protection to individuals and their families in the event of the insured's death. This type of insurance typically pays a death benefit to the beneficiaries named in the policy (McNamara & Plesha, 2016). But for the purpose of this study, our focus would be on the other classification of insurance, non-life insurance and how macro-economic factors affect its performance in the Nigerian economy.

Non-life insurance provides protection against a wide range of risks other than those related to life. This type of insurance covers property damage, liability, and other risks faced by individuals and organizations, such as fire, theft, accidents, and natural disasters. General insurance can be further classified into property insurance, liability insurance, and other types of insurance based on the nature of the risk being insured (Williams & Kensicki, 2015). Non-life insurance policies are designed to protect individuals or businesses against losses that may occur due to unforeseen events such as accidents, theft, natural disasters, or lawsuits.

In the insurance sector, non-life insurance helps to promote economic stability by mitigating the impact of unexpected losses on individuals and organizations. Insurance helps to stabilize the economy by protecting against large, unexpected losses that would otherwise depress consumption and investment (Herring & Susan, 2019). This is because insurance transfers the risk of these losses from the insured to the insurer, allowing the insured to continue with their economic activities even in the face of unexpected events.

Insurance plays a role in promoting social welfare by providing a safety net for those in need. Social insurance programs, including public health insurance, unemployment insurance, and pension plans, help to redistribute income and provide a safety net for those who face hardship (Martinez-Vazquez & Vulovic, 2018). In this way, insurance can help to promote social equality and provide support for those who may not have the resources to cope with unexpected losses on their own.

On the other hand, macroeconomic factors refer to the large-scale economic conditions that affect an economy as a whole. These factors can include a wide range of economic indicators and variables such as inflation, interest rates, exchange rates, and so on. Several macroeconomic factors influence the performance of the non-life insurance industry in Nigeria. Economic growth is an important determinant of the demand for non-life insurance products, as it affects the level of economic activity and the potential for losses to occur. When the economy is growing, there is typically more economic activity and more assets to insure, which can increase the demand for insurance. Economic growth has a positive impact on the insurance sector as the demand for insurance products increases with economic activity.

Inflation can affect the cost of insurance, as it can increase the cost of claims and the cost of doing business. High inflation can also reduce the purchasing power of consumers, which can decrease the demand for insurance products. Inflation has a negative impact on the profitability of non-life insurance companies (Odusanya & Ogundipe, 2015).

High or low interest rates can significantly impact insurers' investment income and profitability. Nigerian non-life insurers, who tend to invest heavily in fixed-income securities such as government bonds, are especially sensitive to interest rate changes, making them susceptible to significant impacts on investment income and profitability (Afolabi & Aladejebi, 2018).

Foreign exchange rates significantly affect the financial performance of insurers that have investments denominated in foreign currencies. Fluctuations in exchange rates can lead to gains or losses on these investments, which can impact the profitability of insurers. Exchange rate volatility can affect the financial performance of non-life insurance companies in Nigeria (Adio & Awosusi, 2017).

Overall, these macroeconomic factors have a significant impact on the performance of the non-life insurance industry in Nigeria, affecting the demand for insurance products, the cost of insurance, the investment income of insurers, and the regulatory environment in which they operate. Based on the above introductory background, this study seeks to examine the effect of macroeconomic factors on the performance of non-life insurance industry in Nigeria.

## 1.2 Statement of the Research Problem

The non-life insurance industry in Nigeria is a critical sector that contributes significantly to the country's economy. Despite the industry's importance, it has struggled to achieve significant growth over the years, with challenges affecting its performance (Okeke & Anioke, 2020). One of the significant challenges is the impact of macroeconomic factors, such as inflation, exchange rates, and interest rates, on the industry's performance. These macroeconomic factors can significantly affect the performance of non-life insurance companies in Nigeria by affecting their investment income, premiums, and claims.

However, there is a significant gap in the literature on the specific effects of these macroeconomic factors on the non-life insurance industry's performance in Nigeria. Most studies have focused on the general effects of macroeconomic factors on the Nigerian economy, with limited attention given to the non-life insurance industry's performance. As a result, there is a lack of comprehensive understanding of how these macroeconomic factors affect the non-life insurance industry in Nigeria.

The lack of understanding of the effects of macroeconomic factors on the non-life insurance industry's performance in Nigeria limits policymakers' ability to develop appropriate policies to support the industry's growth and development. Furthermore, it limits the non-life insurance companies' ability to make informed decisions on risk management and investment strategies (Osunubi & Amoo 2020).

Thus, this study aims to identify and analyze the effects of macroeconomic factors on the non-life insurance industry's performance in Nigeria. Specifically, the study will examine how inflation, exchange rates, and interest rates affect the industry's investment income, premiums, and claims. By providing a comprehensive understanding of the challenges facing the industry, the study will inform policy decisions that can support the industry's growth and development. Additionally, the study's findings will enable non-life insurance companies to make informed decisions on risk management and investment strategies, ultimately improving the industry's performance in Nigeria.

## 1.3 Research Questions

The following research questions will serve as a guide for the study, based on the study's objectives.

1. How do inflation rates impact the performance of non-life insurance companies in Nigeria?
2. What is the relationship between exchange rates and the performance of non-life insurance companies in Nigeria?
3. How do interest rates affect the performance of non-life insurance companies in Nigeria?
4. What is the relationship between GDP and the performance of non-life insurance products in Nigeria?

## 1.4 Objectives of the Study

The main objective of the study is to examine the effect of macroeconomic factors on the performance of non-life insurance industry in Nigeria.The specific objectives include:

i. To examine the impact of inflation on the performance of non-life insurance companies in Nigeria.
ii. To investigate how exchange rates affects the performance of non-life insurance businesses in Nigeria.

iii. To evaluate the impact of interest rates on the performance of non-life insurance companies in Nigeria.

iv. To analyze the impact of GDP on the demand for non-life insurance products in Nigeria.

## 1.5 Research Hypothesis

To provide answers to the research questions and achieve the study's objectives, the following null hypotheses will be tested during the course of the study:

$H_{01}$: There is no significant relationship between inflation and the performance of non-life insurance companies in Nigeria.

$H_{02}$: There is no significant relationship between exchange rates and the performance of non-life insurance companies in Nigeria.

$H_{03}$: There is no significant relationship between interest rates and the performance of non-life insurance companies in Nigeria.

$H_{04}$: There is no significant relationship between GDP and the performance of non-life insurance companies in Nigeria.

## 1.6 Scope of the Study

The purpose of this study is to investigate the impact of macroeconomic factors on the performance of Non-life Insurance Industry in Nigeria. The scope of the study will be

limited to the stated specific objectives, which identifies the dependent variable (non-life insurance sector in Nigeria) and three independent variables (interest rates, exchange rates and inflation) as the macroeconomic factors to be investigated. The study's population will be insurance companies that issue non-life policies in Nigeria. The study will cover the period between 2015 and 2021; the period chosen is justified by the availability of data for this study.

## 1.7 Significance of the Study

The study will provide valuable insights into the performance of the non-life insurance industry in Nigeria, particularly with regards to the impact of macroeconomic factors such as inflation, exchange rates, and interest rates. This will be useful for stakeholders in the industry, including insurance companies, regulators, and policymakers. The study will contribute to the existing literature on the Nigerian insurance industry, which is still relatively under-researched compared to other industries. This will help to fill a gap in knowledge and understanding of the industry, especially in terms of the impact of macroeconomic factors on non-life insurance businesses. The findings of the study could be used to inform the development of policies and regulations that can support the growth and stability of the non-life insurance industry in Nigeria, especially in the face of macroeconomic challenges. The study could also be used to guide investment decisions in the non-life insurance industry, by identifying the macroeconomic factors that have the greatest impact on the industry's performance, and how insurers can mitigate the effects of these factors. This will be useful for investors, analysts, and other stakeholders

interested in the industry. The study will contribute to a better understanding of the dynamics between macroeconomic factors and the non-life insurance industry in Nigeria. This understanding can help policymakers and industry stakeholders develop strategies to enhance the industry's resilience and stability during periods of economic volatility. The findings of the study can be utilized by non-life insurance companies to optimize their investment portfolios. Understanding how macroeconomic factors affect investment income can help insurers make informed decisions regarding asset allocation and diversification, improving their financial performance.

## 1.8 Limitations of the Study

Some possible limitations of the study on the effects of macroeconomic factors on the performance of the non-life insurance industry in Nigeria:

**Generalizability:** The study's findings may be specific to the Nigerian non-life insurance industry and may not be directly applicable to other countries or regions with different economic, social, and regulatory environments. The unique characteristics of the Nigerian market and its specific macroeconomic factors may limit the generalizability of the study's conclusions.

**Data Availability and Quality:** The study relies on secondary data sources, and the availability and quality of data related to the non-life insurance industry and macroeconomic factors in Nigeria may pose limitations. Data accuracy, consistency, and completeness could impact the reliability of the study's findings.

**Causality and Multifactorial Nature:** Establishing a clear causal relationship between macroeconomic factors and the performance of the non-life insurance industry can be challenging due to the presence of other influential factors. Other industry-specific factors, company-specific factors, or external shocks that are not accounted for in the study could impact the industry's performance.

**Timeframe and Dynamics:** The study's findings is based on a specific timeframe (2015 to 2022), and the impact of macroeconomic factors on the non-life insurance industry can evolve over time. Economic conditions, regulatory changes, or shifts in consumer behaviour can influence the industry's performance differently at different points in time.

**External Factors:** The study may not consider all external factors that could impact the non-life insurance industry, such as political instability, natural disasters, or global economic trends. These external factors could have a significant influence on the industry's performance and may not be fully captured in the analysis.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

This chapter is structured into three sections: conceptual review, theoretical review, and empirical review. The conceptual review provides a comprehensive examination of key concepts related to insurance and the impact of macroeconomic factors on the non-life insurance industry in Nigeria. It explores the fundamental aspects of macroeconomics and their relevance to the insurance sector, with a particular focus on non-life insurance. The theoretical review delves into the existing theories and frameworks that elucidate the relationship between macroeconomic factors and the development of the non-life insurance industry in Nigeria. Furthermore, this chapter concludes with a thorough review of empirical literature by presenting previous studies conducted on the impact of macroeconomic factors on the non-life insurance industry in Nigeria, along with their noteworthy findings and implications.

## 2.2 Conceptual Review

### 2.2.1 Performance of Non-life Insurance firms

Insurance is a fundamental concept in the realm of risk management and financial protection. It involves a contractual arrangement between an insurer and an insured party, where the insurer agrees to provide compensation or coverage for specified risks in exchange for premium payments (Rejda & McNamara, 2018). Insurance plays a vital role

in promoting financial stability, mitigating potential losses, and facilitating economic growth (Gatzert, 2015).

At its core, insurance operates on the principle of risk pooling. This principle enables individuals and businesses to transfer their potential financial risks to the insurance company, which accumulates premiums from many policyholders to cover the losses incurred by a few (Mayers & Smith, 2015). This pooling mechanism spreads the risk across a larger population, reducing the adverse impact of unpredictable events.

Furthermore, insurance serves as a mechanism for risk transfer and risk sharing. Through insurance contracts, individuals and businesses transfer the potential financial consequences of specific risks to the insurer. In return, the insurer assumes the responsibility of compensating for losses that may arise from the occurrence of those risks (Harrington & Niehaus, 2019). This risk transfer aspect provides policyholders with peace of mind, knowing that they are protected against unforeseen events.

Insurance also fosters economic efficiency and stability. By absorbing and managing risks, insurance enables individuals and businesses to focus on their core activities without the constant fear of catastrophic events jeopardizing their financial well-being (Cohen, 2018). This, in turn, promotes entrepreneurship, investment, and economic growth.

In recent years, the concept of insurance has evolved to address emerging risks and changing societal needs. With advancements in technology and the digitalization of various industries, new forms of risks, such as cyber threats and data breaches, have

emerged (Cummins, 2016). As a result, insurers have adapted their products and services to cater to these evolving risks, emphasizing the importance of keeping insurance coverage aligned with the changing risk landscape.

Insurance is a crucial concept that underpins risk management and provides financial protection to individuals and businesses. Through risk pooling, risk transfer, and risk sharing mechanisms, insurance promotes economic stability, efficiency, and social welfare. It continues to adapt to the evolving risk landscape, ensuring that individuals and businesses can safeguard their financial well-being in an ever-changing world.

#### 2.2.1.1 Non-life insurance industry overview

Insurance business is divided into two major categories, life and non-life business. In Nigeria, non-life insurance is regulated by the National Insurance Commission (NAICOM), which oversees the licensing, supervision, and regulation of insurance companies operating in the non-life segment (Omoruyi, Osazuwa-Peters, & Erhunmwunse, 2020). The industry comprises a diverse range of insurance products, including motor vehicle insurance, fire insurance, marine insurance, general accident insurance, and liability insurance (Olowe, 2017).

The non-life insurance industry has experienced significant growth and development in recent years, driven by several factors. One important factor is the increasing awareness and demand for insurance products among individuals and businesses in Nigeria (Akpansung, Akpan, & Ekpo, 2019). This has been influenced by factors such as growing

disposable income, expanding middle-class population, and heightened risk consciousness.

Moreover, advancements in technology and the availability of digital platforms have facilitated the distribution and accessibility of non-life insurance products in Nigeria (Chieze, Adewale, & Nwachukwu, 2018). Insurers have embraced digital transformation, offering online policy purchase options, streamlined claims processes, and innovative customer-centric services to enhance the overall insurance experience.

The non-life insurance industry has also witnessed increased competition among insurers, leading to product innovation, competitive pricing, and improved service quality (Adetiloye, Adefulu, & Akanbi, 2019). This competition has been further fuelled by the entry of foreign insurers into the Nigerian market, bringing in global expertise and best practices.

However, despite these positive developments, challenges persist within the non-life insurance industry in Nigeria. These challenges include issues related to low insurance penetration, inadequate public awareness, and trust in the insurance sector (Obamiro & Oguntade, 2020). Additionally, underinsurance and fraudulent activities pose risks to the sustainability and profitability of non-life insurers in the country (Chikwendu & Ibe, 2016).

Non-life insurance industry in Nigeria is a dynamic and evolving sector that provides coverage for a wide range of risks. It is regulated by the National Insurance Commission (NAICOM) and encompasses various insurance products. The industry has experienced

growth due to increased demand, technological advancements, and competition. However, challenges related to low insurance penetration and fraudulent activities need to be addressed to ensure the long-term sustainability and development of the non-life insurance sector in Nigeria.

### 2.2.2 Macroeconomic factors

Macroeconomic factors play a significant role in shaping the performance and development of the non-life insurance industry in Nigeria. One crucial macroeconomic factor is GDP growth. The growth rate of the Gross Domestic Product (GDP) serves as an indicator of the overall economic health of the country and has a direct influence on the demand for non-life insurance products (Okafor & Okoroafor, 2019). As the economy expands, businesses and individuals tend to experience higher income levels, leading to an increased willingness to purchase insurance coverage.

Inflation rates also significantly affect the non-life insurance industry. High inflation erodes the purchasing power of consumers and increases the cost of claims for insurers (Olowe, Adeoye, & Ogunmuyiwa, 2019). Insurance companies must carefully manage pricing strategies and underwriting practices to ensure that premiums adequately cover inflation-related risks and maintain profitability.

Interest rates are another critical macroeconomic factor that influences the non-life insurance industry. Fluctuations in interest rates impact investment returns and the profitability of insurers' investment portfolios (Olowe, 2018). Insurers may adjust their

investment strategies in response to changes in interest rates to optimize returns and manage their overall risk exposure.

Exchange rates also play a role in the non-life insurance industry, particularly for insurers with foreign currency-denominated assets or liabilities. Exchange rate fluctuations can impact insurers' financial positions, investment returns, and reinsurance costs (Abubakar & Hassan, 2017). Insurers may employ risk management strategies to hedge against adverse currency movements and maintain financial stability.

Furthermore, government policies and fiscal measures can significantly affect the non-life insurance industry. Regulatory frameworks, tax policies, and legal requirements imposed by the government shape the operating environment for insurers (Sanni, Ayinde, & Omotayo, 2019). Changes in regulations or tax structures can influence insurers' pricing strategies, product offerings, and overall profitability.

In conclusion, macroeconomic factors such as GDP growth, inflation rates, interest rates, exchange rates, and government policies exert a considerable influence on the non-life insurance industry in Nigeria. Understanding and effectively managing these macroeconomic variables are crucial for insurers to navigate market dynamics, optimize profitability, and mitigate risks.

#### 2.2.2.1 Importance of macroeconomic factors

Macroeconomic factors play a crucial role in the performance and development of the non-life insurance industry. Changes in macroeconomic variables can have a significant impact on insurers' profitability, underwriting practices, investment decisions, consumer

behavior, and overall market dynamics. This section explores the importance of macroeconomic factors and their influence on the non-life insurance sector.

Inflation rates also significantly impact the non-life insurance industry. High inflation erodes the purchasing power of consumers and increases the cost of claims for insurers. The International Monetary Fund (IMF) notes that inflation erodes the value of insurance claims over time, which affects insurers' profitability and their ability to provide adequate coverage (IMF, 2021). Insurers must carefully manage pricing strategies and underwriting practices to account for inflation-related risks.

Interest rates are another essential macroeconomic factor influencing the non-life insurance industry. Changes in interest rates directly affect insurers' investment returns and the profitability of their investment portfolios. The Federal Reserve Bank of San Francisco highlights that Insurers rely on investment income to offset underwriting losses, and low interest rates can pose challenges in generating sufficient returns (Federal Reserve Bank of San Francisco, n.d.). Insurers may adjust their investment strategies to adapt to changing interest rate environments and optimize their overall financial performance.

Exchange rates also play a role in the non-life insurance industry, particularly for insurers with foreign currency-denominated assets or liabilities. Exchange rate fluctuations can impact insurers' financial positions, investment returns, and reinsurance costs. The International Association of Insurance Supervisors (IAIS) emphasizes that exchange rate

movements can pose risks to insurers' capital adequacy and solvency (IAIS, 2019). Insurers may employ risk management strategies, such as currency hedging, to mitigate the potential adverse effects of exchange rate volatility.

Additionally, macroeconomic factors influence consumer behavior and purchasing decisions in the non-life insurance market. During periods of economic uncertainty or downturns, individuals and businesses may reassess their insurance needs and opt for essential coverage while reducing discretionary spending. The Insurance Information Institute (III) mentions that economic downturns can lead to changes in insurance demand patterns, with individuals and businesses seeking cost-effective coverage options (III, n.d.). Insurers must anticipate and respond to these shifts in consumer behaviour to remain competitive and meet evolving market demands. Insurers must closely monitor and adapt to these factors to optimize profitability, manage underwriting risks, make informed investment decisions, and align their product offerings with changing consumer needs. A comprehensive understanding of macroeconomic dynamics is essential for insurers to navigate the complexities of the non-life insurance market.

### 2.2.3 Risk management in non-life insurance

Risk management plays a critical role in the non-life insurance industry, particularly in relation to macroeconomic factors. Insurers face various risks associated with changes in macroeconomic conditions, including economic instability, inflationary pressures,

currency fluctuations, and regulatory changes. This section explores the role of risk management in identifying, assessing, and mitigating these risks.

Effective risk management is essential for insurers to maintain financial stability and navigate the uncertainties posed by macroeconomic factors. The International Association of Insurance Supervisors (IAIS) emphasizes that insurers must have robust risk management frameworks to identify, assess, and manage risks effectively (IAIS, 2020). Insurers employ various risk assessment techniques, such as scenario analysis and stress testing, to evaluate the potential impact of macroeconomic changes on their operations, solvency, and profitability.

Economic instability, characterized by recessions or financial crises, poses significant challenges to the non-life insurance industry. The Insurance Information Institute (III) notes that economic downturns can lead to increased claims activity, reduced premium volumes, and investment losses (III, n.d.). Insurers employ risk management strategies, such as maintaining adequate capital reserves and prudent underwriting practices, to withstand economic shocks and ensure their long-term viability.

Inflationary pressures also introduce risks to non-life insurers. Inflation erodes the value of insurance claims over time, affecting insurers' profitability and claims management practices. The Insurance Regulatory and Development Authority of India (IRDAI) highlights that insurers should factor inflation risks into their pricing models and ensure adequate reserves to cover future claim payments (IRDAI, 2021). By actively managing

inflation-related risks, insurers can maintain their financial health and protect policyholders' interests.

Currency fluctuations pose additional risks, particularly for insurers with international operations or exposures. Changes in exchange rates can impact insurers' financial positions, investment returns, and reinsurance costs. The Association of British Insurers (ABI) advises insurers to employ effective currency risk management strategies, including currency hedging or diversifying investments across different currencies (ABI, n.d.). By mitigating the impact of currency fluctuations, insurers can stabilize their financial performance and minimize potential losses.

Furthermore, regulatory changes introduce risks and uncertainties to the non-life insurance industry. The Insurance Regulatory Authority of Kenya (IRA) highlights that insurers should closely monitor regulatory developments and adapt their risk management frameworks to comply with changing requirements (IRA, n.d.). Insurers may need to adjust underwriting practices, revise capital adequacy calculations, or enhance compliance measures to align with new regulations.

Effective risk management helps insurers identify, assess, and mitigate risks associated with economic instability, inflationary pressures, currency fluctuations, and regulatory changes. By implementing robust risk management frameworks and strategies, insurers can enhance their financial stability, protect policyholders' interests, and navigate the complexities of the evolving macroeconomic environment.

### 2.2.4 Insurance sector development in Nigeria

The development of the insurance sector in Nigeria is influenced by various macroeconomic factors and is a result of concerted efforts by regulatory authorities and industry stakeholders. This section analyses the broader context of insurance sector development in Nigeria and the role of macroeconomic factors in driving its growth.

The Nigerian insurance sector has witnessed significant development in recent years, supported by a favourable macroeconomic environment and initiatives taken by regulatory authorities. The National Insurance Commission (NAICOM) has played a pivotal role in driving sector development through regulatory reforms and market-enhancing measures. These efforts are aimed at fostering financial stability, enhancing market competitiveness, and expanding insurance penetration.

Macroeconomic factors, such as GDP growth, inflation rates, and investment opportunities, have a direct impact on insurance sector development. The World Bank notes that sustained GDP growth contributes to increased insurance demand, particularly in emerging markets like Nigeria (World Bank, 2021). As the economy expands, individuals and businesses have greater financial capacity, leading to a higher propensity to seek insurance coverage.

Inflation rates also influence insurance sector development. The Central Bank of Nigeria (CBN) acknowledges that inflation affects the purchasing power of individuals and businesses, which can impact insurance demand and affordability (CBN, 2018). Insurers must align their product offerings and pricing strategies to accommodate the inflationary environment and meet the evolving needs of consumers.

Furthermore, regulatory authorities and industry stakeholders have implemented initiatives to foster the growth of the non-life insurance industry. The Nigerian Insurers Association (NIA), as an industry body, works collaboratively with NAICOM to promote market development and consumer protection. The NIA engages in advocacy, public education, and industry-wide initiatives to enhance public trust and confidence in the insurance sector.

Insurance industry players are also making efforts to improve market competitiveness and expand insurance penetration. Insurers are developing innovative products and services to cater to the evolving needs of consumers and businesses. The introduction of microinsurance products, for instance, aims to provide affordable coverage to underserved populations and promote financial inclusion (NAICOM, 2019).

The development of distribution channels is another crucial aspect of insurance sector growth. The advent of digital technologies and online platforms has facilitated the expansion of distribution networks, making insurance more accessible to a broader customer base. Insurers are leveraging technology to enhance customer experience, streamline operations, and improve market reach (The Guardian, 2021).

In conclusion, the development of the insurance sector in Nigeria is influenced by macroeconomic factors and the concerted efforts of regulatory authorities and industry stakeholders. Macroeconomic stability, regulatory reforms, market-enhancing initiatives, and industry collaboration are key drivers of insurance sector growth. By leveraging favorable macroeconomic conditions, implementing market-friendly regulations, and

embracing innovation, the Nigerian insurance sector aims to achieve higher levels of penetration, enhance consumer confidence, and contribute to the overall economic development of the country.

## 2.3 Theoretical Review

This section delves into the existing theories and frameworks that elucidate the relationship between macroeconomic factors and the development of the non-life insurance industry in Nigeria.

### 2.3.1 The business cycle theory

The business cycle theory plays a significant role in understanding the effect of macroeconomic factors on the non-life insurance industry. According to the business cycle theory, economies experience fluctuations in economic activity over time, characterized by periods of expansion and contraction. These cycles can have a substantial impact on the insurance sector, influencing insurance demand, claim frequencies, and profitability. During economic expansions or boom phases, when economic activity is on the rise, the non-life insurance industry tends to experience increased demand for its products. As businesses expand, they may require more insurance coverage to protect their assets and investments. Additionally, higher consumer confidence and disposable income during economic upswings can lead to a greater willingness to purchase insurance products, such as property insurance and motor insurance.

On the other hand, during economic contractions or recessions, the demand for non-life insurance tends to weaken. Businesses may downsize, leading to a reduction in their insurance needs. Individuals facing financial hardships may opt to cut back on discretionary expenses, including certain insurance coverages. These changes in insurance demand during the business cycle can result in fluctuations in insurance premium revenues for companies operating in the non-life insurance industry. An empirical study by Blanchard and Quah (1989) examining the United States' business cycles found that various macroeconomic factors, such as real GDP, unemployment, and interest rates, are key drivers of economic fluctuations. These factors can directly impact the insurance industry's performance, especially during downturns, when the demand for non-life insurance products tends to decline.

Moreover, the business cycle theory's impact on the non-life insurance industry is not limited to demand fluctuations alone. Insurance companies invest premiums received from policyholders to generate additional income, primarily through fixed-income securities. However, during periods of low economic activity, interest rates tend to decrease as central banks implement expansionary monetary policies to stimulate the economy. This can lead to reduced investment income for insurance companies, potentially affecting their profitability and overall financial stability (Acharya et al., 2016).

Understanding the business cycle's influence on the insurance industry is crucial for insurers, policymakers, and consumers alike. Policymakers may consider countercyclical

measures to stabilize the industry during economic downturns, while insurers can adapt their product offerings and investment strategies to align with the prevailing economic conditions.

The business cycle theory provides valuable insights into the effect of macroeconomic factors on the non-life insurance industry. Economic expansions tend to increase insurance demand, while contractions can lead to weakened demand and reduced investment income for insurers. Studying the cyclical nature of the economy and its impact on the insurance sector can help insurers make informed decisions and develop strategies to navigate through different economic phases effectively.

### 2.3.2 Market volatility theory

The market volatility theory examines how fluctuations and instability in financial markets impact the non-life insurance industry. Financial markets, such as stock markets and bond markets, can experience periods of high volatility due to various factors, including economic uncertainties, geopolitical events, and changes in investor sentiment. The volatility in these markets can have significant implications for insurers, affecting their investment income, capital adequacy, and overall risk management strategies.

Insurance companies invest the premiums they collect from policyholders to generate income and support their operations. During periods of high market volatility, the value of investments in the insurer's portfolio may fluctuate significantly. For example, stock market downturns can lead to a decline in the value of equities held by insurers,

potentially reducing investment income. On the other hand, during periods of market upswings, insurers may benefit from capital gains and higher returns on investments. Market volatility can impact an insurer's capital adequacy and solvency position. Insurers are required to maintain sufficient capital to cover potential liabilities and unexpected losses. Market downturns can erode the value of an insurer's assets, potentially leading to a decrease in the company's capitalization. This may necessitate capital injections or restructuring to meet regulatory solvency requirements. Insurance companies employ risk management strategies to protect against adverse events and financial market risks. High market volatility can lead to challenges in accurately measuring and managing financial risks. Insurers may need to adjust their risk models and hedging strategies to account for the increased uncertainty.

Market volatility can also influence the dynamics of the reinsurance market. Reinsurers, which provide insurance coverage to primary insurers, may reassess their risk appetite and pricing strategies based on prevailing market conditions. During periods of market turmoil, reinsurers may tighten their underwriting standards or adjust reinsurance rates. Market volatility can affect consumer behaviour and risk perceptions. Economic uncertainties may lead individuals and businesses to reassess their insurance needs. During times of heightened risk awareness, demand for certain insurance products, such as business interruption insurance or liability coverage, may increase. Conversely, periods of market stability and confidence may lead to a shift in insurance priorities. Market volatility can prompt regulatory authorities to review and adjust capital and

reporting requirements for insurers. Regulators may increase scrutiny on insurers' investment portfolios and risk management practices to ensure financial stability during turbulent market conditions.

A study by Cummins and Nini (2002) explored the relationship between stock market volatility and the non-life insurance industry. The research highlighted the impact of financial market fluctuations on insurers' stock returns and profitability. Similarly, a report by the International Monetary Fund (IMF) on "Market Volatility and Vulnerabilities in the Non-Life Insurance Sector" (2017) discussed how market volatility can pose challenges to insurers' financial stability and risk management practices.

### 2.3.3 Portfolio Theory

The portfolio theory, provide valuable insights into the complex relationship between macroeconomic factors and the non-life insurance industry. The portfolio theory, pioneered by Harry Markowitz, suggests that insurers' investment decisions are influenced by macroeconomic variables such as interest rates and stock market performance. Understanding these financial theories can shed light on how macroeconomic factors impact insurers' profitability, investment decisions, and risk management practices.

The portfolio theory asserts that changes in macroeconomic variables have a significant impact on insurers' investment returns. One key variable is interest rates. Fluctuations in interest rates can affect the performance of fixed-income securities held in insurers' investment portfolios. When interest rates rise, the value of existing fixed-income

securities tends to decline, leading to potential capital losses for insurers. Conversely, when interest rates fall, insurers may experience capital gains as the value of fixed-income securities increases. Therefore, insurers closely monitor interest rate movements to adjust their investment strategies accordingly, aiming to optimize their investment returns (Bodie, Kane, & Marcus, 2014).

Similarly, the portfolio theory highlights the influence of stock market performance on insurers' investment decisions. The stock market serves as a crucial avenue for insurers to invest their funds and generate returns. A booming stock market can enhance insurers' investment returns, contributing to their overall profitability and financial stability. On the other hand, a declining stock market can lead to investment losses, potentially impacting insurers' financial performance and solvency. Insurers need to carefully assess the trends and dynamics of the stock market, considering its relationship with macroeconomic factors, to make informed investment decisions (Bodie, Kane, & Marcus, 2014).

The portfolio theory emphasizes the importance of diversification and asset allocation in managing risks and achieving optimal investment performance. Insurers aim to construct well-diversified investment portfolios by spreading their investments across different asset classes, such as equities, bonds, real estate, and alternative investments. By diversifying their portfolios, insurers can mitigate the impact of adverse macroeconomic events on their investment performance. For instance, during periods of economic instability or stock market volatility, a well-diversified portfolio can help offset potential

losses in one asset class with gains in another, thus reducing overall investment risk (Rejda, 2018).

### 2.3.4 Income theory

Unemployment and income levels directly affect individuals' purchasing power and financial stability. During periods of high unemployment and low-income growth, individuals may become more cautious with their spending and prioritize essential expenses over discretionary ones, including insurance coverage. This could lead to a decline in the demand for non-life insurance products, such as home insurance or travel insurance, as individuals and families try to cut back on expenses. Income distribution also plays a role in insurance demand. Lower-income individuals and households may have more limited access to insurance products due to affordability constraints. On the other hand, higher-income individuals may have a greater ability to purchase insurance, even during economic downturns. Income levels can influence insurance claim frequencies and severities. For example, during economic downturns, the frequency of certain insurance claims, such as auto accidents, may decrease due to reduced travel and commuting. However, other types of claims, such as unemployment-related insurance (e.g., mortgage payment protection), may increase during economic recessions.

A study by Gatzert and Wesker (2010) examined the relationship between macroeconomic factors, including unemployment and income levels, and the non-life insurance industry's performance. The research emphasized the importance of considering economic indicators in understanding insurance market dynamics.

In conclusion, the income Theory highlights the significant role that macroeconomic factors play in influencing the non-life insurance industry. Understanding the interplay between employment, income, and insurance demand is essential for insurers to adapt their products and strategies to meet the needs of consumers during various economic phases.

## 2.4 Empirical Review

Series of studies have been conducted on issues surrounding the variables of discussion in this study. The impact of inflation on the performance of non-life insurance companies in Nigeria was examined by the following:

Ajibola (2017) conducted a comprehensive investigation into the impact of inflation on the financial performance of insurance companies in Nigeria. The study employed panel data analysis and found a significant negative relationship between inflation and the profitability of non-life insurers. The results revealed that higher inflation rates were associated with reduced underwriting profits and increased claims costs. This was primarily attributed to the erosion of the purchasing power of policyholders, leading to higher claim payments. Consequently, non-life insurance companies experienced a decline in profitability, which adversely affected their overall performance.

Okeke, Obi & Eboigbe (2019) focused on examining the effect of inflation on the solvency position of non-life insurance companies in Nigeria. The study employed regression analysis and found compelling evidence of a negative impact. The findings indicated that higher inflation rates exerted significant pressure on the solvency ratios of

non-life insurers. This was primarily driven by the increased claims payments resulting from higher prices of goods and services. The study highlighted that non-life insurance companies faced challenges in maintaining their financial stability in the face of rising inflation, as the ability to meet policyholder obligations became more burdensome.

Ugochukwu, Onuoha, Nwankwo (2020) focused on investigating the relationship between inflation and the investment performance of insurance companies in Nigeria. Using time series data analysis, the study found compelling evidence of a negative impact. The results demonstrated that higher inflation rates had an adverse effect on the investment returns of non-life insurers. This was attributed to the erosion of the purchasing power of investment portfolios due to inflation. As a result, non-life insurance companies experienced lower investment income, which negatively affected their overall financial performance.

In a study conducted by Okpanachi, Musa, and Abila (2018), the impact of exchange rates on the performance of insurance businesses in Nigeria was examined. The study aimed to shed light on the relationship between exchange rate fluctuations and the financial performance of non-life insurance companies operating in the Nigerian market. To address this objective, the researchers employed a quantitative research design and collected data from non-life insurance companies in Nigeria for a specified period. The data included exchange rate figures and financial performance indicators such as premiums, claims, and profitability ratios. Multiple regression analysis was conducted to analyze the relationship between exchange rates and the financial performance of

insurance businesses. The findings of the study revealed that exchange rate fluctuations significantly influenced the financial performance of insurance companies in Nigeria. Specifically, depreciation of the local currency was found to have a negative impact on the profitability of non-life insurers, as it increased the cost of claim settlements and reduced the value of investment returns. Conversely, currency appreciation was associated with improved profitability for non-life insurers due to reduced claim costs and increased investment returns. These findings underscore the importance of exchange rate stability for the performance of insurance businesses in Nigeria. The study suggests that fluctuations in exchange rates introduce uncertainties and challenges for insurers, affecting their profitability and overall financial stability. Therefore, policymakers and industry stakeholders need to pay attention to maintaining exchange rate stability and implementing effective risk management strategies to mitigate the adverse effects of exchange rate fluctuations on non-life insurance companies.

A study conducted by Adeoti, and Dada (2021) examined the impact of exchange rate fluctuations on the performance of insurance businesses in Nigeria. The researchers aimed to provide empirical evidence on the relationship between exchange rates and key performance indicators of non-life insurance companies operating in the Nigerian market. The data encompassed exchange rate values and performance indicators such as premiums, claims, and underwriting profitability. Multiple regression analysis was employed to examine the relationship between exchange rates and the performance of insurance businesses. Specifically, the study found that depreciation of the local currency

adversely affects the underwriting profitability of non-life insurers. This is attributed to increased claim costs, particularly for imported goods and services, which erode profitability. On the other hand, currency appreciation was associated with improved underwriting profitability as it reduced claim costs. Furthermore, the study revealed that exchange rate fluctuations influenced the premium income of non-life insurers. Depreciation of the local currency was found to lead to higher premium income due to the increased cost of imported goods and the subsequent need for insurance coverage. However, currency appreciation had the opposite effect, resulting in lower premium income. The study also highlighted the role of exchange rates in determining the investment performance of insurance companies. Fluctuations in exchange rates were found to impact the investment returns of insurers, particularly in foreign assets. Depreciation of the local currency was associated with reduced investment returns, while currency appreciation resulted in higher returns on foreign investments. Based on these findings, the study suggests that non-life insurance companies in Nigeria need to effectively manage the risks associated with exchange rate fluctuations.

Okpanachi and Okeke (2017) conducted a study to assess the effect of interest rates on the profitability of insurance companies in Nigeria. In their research, Okpanachi and Okeke collected financial data from selected non-life insurance companies over a specific period. The data included interest rates and key performance indicators such as premiums, claims, and underwriting profitability. The researchers employed regression analysis to analyze the relationship between interest rates and the performance of non-life insurance

companies. The findings of the study revealed that interest rates have a significant impact on the profitability of non-life insurance companies in Nigeria. The study found a negative relationship between interest rates and underwriting profitability. Higher interest rates were associated with reduced profitability due to increased borrowing costs for insurers and a potential decrease in the demand for insurance products. Furthermore, the study indicated that interest rates influenced the investment returns of non-life insurance companies. Higher interest rates were found to lead to lower investment returns, particularly in fixed-income securities. This is because higher interest rates reduce the present value of future cash flows, thereby affecting the value of investments. Based on these findings, the study suggests that non-life insurance companies in Nigeria should closely monitor and manage the impact of interest rates on their performance. Effective interest rate risk management strategies, such as adjusting underwriting practices, optimizing investment portfolios, and exploring alternative revenue sources, may help mitigate the adverse effects of interest rate fluctuations.

A study conducted by Adelegan (2014) examined the relationship between interest rates and the performance of insurance companies in Nigeria. The researcher collected data on key financial variables such as premiums, claims, investment income, and interest rates from selected insurance companies over a specific time period. The study found a positive relationship between interest rates and investment income of non-life insurers. Higher interest rates were associated with increased investment income, as insurers were able to earn higher returns on their investment portfolios. The study revealed that interest

rates affected the underwriting profitability of non-life insurance companies. Higher interest rates were found to increase borrowing costs for insurers, which could negatively impact their profitability. This is because higher interest rates lead to higher interest expenses on outstanding loans and bonds issued by insurance companies. Moreover, the study examined the impact of interest rates on the demand for non-life insurance products. It was found that interest rates had a mixed effect on the demand for insurance. While higher interest rates may reduce the affordability of insurance premiums for individuals and businesses, they could also incentivize individuals to seek insurance coverage to protect their assets and investments in times of economic uncertainty. Based on these findings, the study recommends that non-life insurance companies in Nigeria closely monitor interest rate movements and develop strategies to mitigate the potential negative effects. This may involve optimizing investment portfolios to maximize returns in a changing interest rate environment, managing borrowing costs effectively, and offering innovative insurance products that cater to the changing needs of customers.

Ogujiuba and Ihimodu (2018) explored this relationship by examining the effect of unemployment rate on the demand for non-life insurance coverage. The researchers utilized time-series data on unemployment rate and insurance premiums from relevant government agencies and insurance industry reports. The study employed econometric techniques, such as regression analysis, to analyze the data and determine the relationship between unemployment and non-life insurance demand. The findings of the study revealed that there exists a negative relationship between unemployment and the demand

for non-life insurance products in Nigeria. As the unemployment rate increases, individuals and businesses face financial constraints, leading to reduced disposable income and a decrease in the demand for insurance coverage. This is because unemployment often leads to a decrease in individuals' ability to afford insurance premiums and businesses' willingness to invest in insurance to protect their assets. Furthermore, the study highlighted that the level of awareness and understanding of insurance among the unemployed population is relatively low in Nigeria. Many unemployed individuals perceive insurance as an additional financial burden, leading to a lower uptake of non-life insurance products. Based on these findings, the study suggests that efforts should be made to enhance financial literacy and awareness of insurance among the unemployed population. Promoting the benefits of insurance coverage and providing accessible and affordable insurance options tailored to the needs of unemployed individuals could help increase the demand for non-life insurance products.

A study conducted by Ibrahim and Abdul-Rahman (2019) delved into examining the relationship between unemployment and the demand for non-life insurance in Nigeria. The researchers collected data on unemployment rates and insurance premium levels from the National Bureau of Statistics and insurance industry reports. They employed econometric techniques, including regression analysis, to analyze the data and draw meaningful conclusions. The findings of the study indicated a significant negative relationship between unemployment and the demand for non-life insurance products in Nigeria. As unemployment rates rise, individuals and businesses experience financial

constraints, leading to a decrease in their purchasing power and ability to afford insurance coverage. The study revealed that unemployed individuals prioritize meeting basic needs and may forego insurance coverage due to limited financial resources. Furthermore, the study found that the perception of insurance among the unemployed population plays a crucial role in their demand for non-life insurance. Many unemployed individuals perceive insurance as an additional expense and may prioritize other financial obligations over purchasing insurance policies. This highlights the need for targeted educational campaigns to increase awareness and understanding of the benefits of insurance, particularly among the unemployed segment. The study also emphasized the importance of developing tailored insurance products that cater to the specific needs and affordability constraints of the unemployed population. By offering flexible payment options, lower premiums, and coverage options that address the most critical risks faced by the unemployed, insurers can attract this segment and enhance the demand for non-life insurance.

A study conducted by Adeoye and Adegboye (2019) explored the impact of technological advancements on the performance of insurance businesses in Nigeria. The researchers collected data from a sample of non-life insurance companies and examined their level of technological adoption, including the use of mobile applications, online platforms, and digital marketing strategies. The study focused on key performance indicators such as customer acquisition, operational efficiency, and financial performance. The findings of the study indicated that non-life insurance companies that embraced technological

advancements experienced significant improvements in their performance metrics. The use of mobile applications and online platforms facilitated seamless communication between insurers and policyholders, resulting in enhanced customer engagement and satisfaction. Additionally, the adoption of digital marketing strategies allowed insurers to target specific market segments more effectively and attract a larger customer base. The study also highlighted the role of technology in streamlining operational processes within non-life insurance companies. Automation of underwriting, claims processing, and policy administration led to reduced turnaround times, improved efficiency, and cost savings. Furthermore, the use of advanced data analytics tools enabled insurers to gain valuable insights into customer behaviour and preferences, leading to more personalized offerings and tailored risk management solutions.

However, the study acknowledged that there are challenges associated with technological advancements in the non-life insurance industry. These challenges include the high initial costs of technology implementation, the need for continuous staff training and upskilling, and the potential risks associated with data privacy and cybersecurity. Insurers need to address these challenges by developing comprehensive technology adoption strategies, investing in cybersecurity measures, and fostering a culture of innovation within their organizations. In conclusion, the study by Adeoye and Adegboye (2019) demonstrates that technological advancements have a positive impact on the performance of non-life insurance businesses in Nigeria. The adoption of digital technologies and data analytics tools enables insurers to improve customer engagement, streamline operations, and make

informed business decisions. However, insurers must navigate the associated challenges to fully harness the benefits of technological advancements.

### 2.5 Gaps in Empirical Literature

Despite the number of empirical studies on the impact of macroeconomic factors on non-life insurance industry in Nigeria, several gaps remain to be addressed. The studies reviewed focused on short-term effects. There is a need for more longitudinal studies that analyse the long-term impacts of these macroeconomic variables on the performance of non-life insurance companies in Nigeria. There was also a limited exploration of the interaction between multiple macroeconomic factors; while some studies examined the individual effects of macroeconomic variables, there is a lack of research exploring the interplay and combined impact of multiple factors. For instance, how do inflation, exchange rates, and interest rates collectively influence the performance of non-life insurance companies? Further investigation in this area can provide a more comprehensive understanding of the dynamics at play. Although one study examined the impact of technological advancements on non-life insurance performance, there is a dearth of research on this topic within the Nigerian context. Future studies can delve deeper into the role of technology, including areas such as insurtech innovations, digital transformation, and the adoption of advanced analytics tools in enhancing the performance of non-life insurance companies. This study aims to address these gaps by conducting a rigorous empirical analysis to provide valuable insights into the long-term dynamics and interrelationships between macroeconomic factors and non-life insurance

performance, while also exploring the impact of technological advancements on the industry.

# CHAPTER THREE

# METHODOLOGY

## 3.1 Introduction

This chapter is divided into a number of sections which include research design, population and sampling, sources of data collection, model specification and operationalization of variables and techniques of data analysis.

## 3.2 Research design

This study adopts a quantitative research approach to investigate the impact of macroeconomic factors on the non-life insurance industry in Nigeria. It employs a descriptive research type to provide a comprehensive understanding of the relationships between macroeconomic variables and the performance of non-life insurance companies. The research design incorporates primary data collection through a survey questionnaire, as well as secondary data obtained from relevant sources such as government reports, industry publications, and scholarly articles.

## 3.3 Population of the study

The population of the study consists of all 23 insurance companies practicing non-life insurance business listed on the Nigerian Exchange as at December 26th, 2022.

### 3.4 Sample Size and Technique

A purposive sampling technique will be used for this study. Purposive sampling technique is a non-probability sampling in which researchers rely on their own judgment when choosing members of the population to participate in their surveys. Hence, a sample size of twenty (20) non-life insurance firms. It is expected that the sample size will serve as a true representation of the entire population. The sample consists of the following insurance firms: AXA Mansard Insurance Plc, NEM Insurance Plc, African Alliance Insurance Plc, Lasaco Assurance Plc, Goldlink Insurance Plc, Cornerstone Insurance Plc, AIICO Insurance Plc, Niger Insurance Plc, Prestige Assurance Plc and Universal Insurance Plc

### 3.5 Sources of data

To comply with the stated research objectives, the study will employ panel data mainly from secondary sources which are quantitative in nature. The data will be obtained from the annual reports of individual insurance firms submitted to Nigerian Exchange Limited. Therefore, the data needed was extracted from the audited financial reports of the selected firms within the period of the study (2015-2021).

### 3.6 Definition and Measurement of Variables

**Table 3.1: Definition and Measurement of Variables**

| S/N | Variable Type | Variable Name | Measurement |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 1 | Dependent variable | Risk and returns | Performance of non-life insurance companies (PNLIC) |
| 2 | Independent variable | Macroeconomic factors | Inflation rate (IFR) |
| | | | Exchange rate (EXR) |
| | | | Interest rate (ITR) |
| | | | Unemployment rate (UMR) |

Source: Researchers' Computations (2023)

### 3.7 Theoretical Framework and Model Specification

The portfolio theory, proposed by Harry Markowitz in 1952, is a fundamental concept in finance that can be applied to analyze the relationship between macroeconomic factors and the non-life insurance industry in Nigeria. According to the portfolio theory, investors aim to maximize their returns while minimizing risks by diversifying their investment portfolios.

In the context of the non-life insurance industry, the portfolio theory suggests that insurers' investment decisions are influenced by macroeconomic variables such as interest rates and stock market performance. Changes in these variables can have a significant impact on insurers' investment returns, asset allocation strategies, and overall financial stability. Interest rates play a crucial role in insurers' investment decisions. When interest rates are low, insurers may seek higher-yielding investments to generate better returns. Conversely, when interest rates rise, insurers may shift their investment strategies towards fixed-income securities to capitalize on higher yields and minimize the

risk of capital losses. The performance of non-life insurance companies can be influenced by their ability to effectively manage the risks associated with interest rate fluctuations.

In addition to the portfolio theory, researchers often employ specific model specifications to analyze the relationship between macroeconomic factors and the non-life insurance industry. One commonly used model specification is the Capital Asset Pricing Model (CAPM), which can provide insights into the expected returns and risk of non-life insurance company investments. For example, researchers can estimate the beta coefficients for non-life insurance companies by regressing their investment returns against the returns of a broad market index, such as the Nigerian Stock Exchange All-Share Index. The beta coefficients provide insights into the sensitivity of the companies' investment portfolios to market fluctuations and macroeconomic factors.

The study adopted the following regression model in establishing the relationship between the dependent and independent variables:

$Y = f(X)$ …….. 3.1

Where Y is the dependent variable and X is the independent variable. Thus, Y is a function of X. Expanding the equation:

$Y = a + bX$ …….. 3.2

Where ‘a’ is a constant factor and ‘b’ is a regression coefficient.

In a situation where the independent variables are broken down, thus:

$X = (X1, X2, X3……. Xn)$ …… 3.3

Then;

$Y = f(X1, X2, X3……. Xn)$ …… 3.4

Now;

$Y = a + b1X1 + b2X2 + b3X3 + …… + bnXn$ ……... 3.5

To make the model stronger for effective prediction, there is the need to introduce a margin of error (μ). Hence, the new equation becomes:

$Y = f(X1, X2, X3……. Xn) + \mu$ …… 3.6

$Y = a + b1X1 + b2X2 + b3X3 + …… + bnXn + \mu$ …….. 3.7

Thus; relating the model to the current study, Y as the dependent variable is Performance of Non-life Insurance Companies (PNLIC), X as the independent variable which is the selected macroeconomic factors. The independent variable was further divided into X1 (IFR), X2 (EXR), X3 (ITR) and X4 (UMR). Thus, the econometric model becomes:

PNLIC = f (Performance of non-life insurance companies) …….. 3.8

$PNLIC = \beta0 + \beta1(IFR) + \beta2(EXR) + \beta3(ITR) + \beta4(UMR) + \mu$ …. 3.9

$\beta0$ = Intercept parameter

β1, β2, β3, and β4 are the regression coefficients that represent the impact of each independent variable on the dependent variable.

The ε represents the error term, which accounts for any unexplained variance in the dependent variable.

IFR = Inflation rate

EXR = Exchange rate

ITR = Interest rate

UMR = Unemployment rate

### 3.8 Method of Data Analysis

Quantitative data analysis will be conducted using statistical techniques such as correlation analysis and regression analysis. Correlation analysis will examine the relationships between the macroeconomic variables and the performance indicators of non-life insurance companies. Multiple regression analysis will be used to determine the extent to which macroeconomic factors predict the performance outcomes. The statistical software package SPSS will be utilized for data analysis.

# CHAPTER FOUR
# DATA PRESENTATION AND ANALYSIS

## 4.1 Introduction

This chapter presents the results, analysis and interpretation of the panel data collected for the purpose of testing the models developed in this study. The set of analysis in this study comprises analyses to determine the impact of macroeconomic factors on performance of non-life insurance firms in Nigeria. The analysis therefore involves the use of econometric methods in order to provide a rich background for the investigation. The econometric analysis extends the statistical analysis with the goal of performing the empirical analysis and obtaining estimated coefficients which are valid enough to test the hypotheses in the study. As explained in the previous chapter, the Panel Data Analysis method is employed in the econometric analysis.

## 4.2 Empirical Tests and Results Based on Panel Data Analysis

In this section, the results of the panel data estimates of the models specified in the previous chapter are reported and analysed. The focus of the analysis is actually on the goodness of fit statistics as well as the coefficients' results which will help provide the basis for the tests of hypotheses in the study. The series estimates the relationship between macroeconomic factors and the performance of non-life insurance firms in Nigeria.

The panel data estimation strategy adopted in this section presupposes that the biases in the pooled data could either come from cross sectional heterogeneity or time series

(periodic) variations. Hence, the Hausman test of heterogeneity is initially conducted to determine the best effects model (random or fixed) to be adopted in the analysis. The result of the Hausman test is reported in Table 4.1 below. The Chi-square statistic value for the equations is not significant. From these results, if the p-value is significant the fixed effect model should be used but if the p-value is not significant the random effect model is employed. Hence, the best method to apply is the random-effect model.

**Table 4.1: Hausman Test for Effects**

| *Test Summary* | | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob. |
|---|---|---|---|---|
| *Cross-section random* | | 0.0000 | 4 | 1.0000 |
| *Variable* | *Fixed* | *Random* | *Var(Diff.)* | *Prob.* |
| INFLR | 0.0197 | 0.0197 | 0.0000 | 0.9511 |
| EXRT | -0.0010 | -0.0011 | 0.0000 | 0.9511 |
| INTR | 0.0033 | 0.0032 | 0.0000 | 0.9511 |
| GDP | -0.2630 | -0.2645 | 0.0006 | 0.9511 |

### 4.2.1 Macroeconomic Factors and Performance of Non-Life Insurance Firms

The result of the impact of macroeconomic variables on the performance non-life insurance in Nigeria using variables such as inflation rate (INFLR), exchange rate (EXRT), interest rate (INTR) and GDP are reported in table 4.2 below.

The diagnostic statistics for the model are very impressive. The adjusted R squared value of 0.30 indicates that over 30 percent of the systematic variations in the performance non-life insurance firms in Nigeria are explained by the explanatory variables. The F value 15.88 passes the significance test at the 1 percent level. This shows the hypothesis of a

significant relationship between performance of non-life insurance firms and all the independent variables combined is significant.

The particular impact of each of the explanatory variables on non-life insurance firms performance is determined by considering the individual coefficients of the explanatory variables in terms of signs and significance. In the results reported, the coefficients of INFLR and INTR have positive signs, while the coefficient of EXRT and GDP is negative.

The relationship between inflation rate in the economy and the performance of non-life insurance firms is positive and significant at the 1 percent level. This implies that a 1 percent increase in inflation rate in the economy, the performance of non-life insurance is predicted to increase by 0.0197 holding other variables constant. In other words, the increase of inflation rate in the economy which is 1.97 per cent is the elasticity of the performance of non-life insurance firms in Nigeria. This indicates that non-life insurance firms performance tend to increase as the rate of inflation increases in the economy.

The coefficient of exchange rate is negative and significant at the 1 percent level. This shows that a 1 percent increase in exchange rate negatively influences value of non-life insurance firms performance by 0.11% holding other independent variables constant. The coefficient of exchange rate is 0.0011, which is the elasticity of the performance of non-life insurance firms with respect to exchange rate. This also shows that the non-life insurance firms performances tend to increase as exchange rates decreases.

The relationship between GDP in the economy and the performance of non-life insurance firm is negative and significant at the 1 percent level. This implies that a 1 percent increase in the GDP or growth in the economy, the non-life insurance performance is predicted to decrease by 0.2645 holding other variables constant. In other words, the increase in the economy growth which is 26.5 per cent is the elasticity of the non-life insurance firms' performance in the Nigeria. This indicates that non-life insurance firms performance tend to increase as GDP decrease.

The coefficient of interest rate does not have any impact on the performance of non-life insurance firms in Nigeria.

**Table 4.3: Impact of Macroeconomic Variables on the Non-Life Insurance Firms' Performance**

| *Variable* | *Coefficient* | *t-Statistic* | *Prob.* |
|---|---|---|---|
| *C* | 0.9018 | 3.9196 | 0.0001 |
| *INFLR* | 0.0197 | 4.2252 | 0.0000 |
| *EXRT* | -0.0011 | -3.2604 | 0.0014 |
| *INTR* | 0.0032 | 0.3712 | 0.7110 |
| *GDP* | -0.2645 | -5.2499 | 0.0000 |
| *R-squared* | 0.3200 | *F-statistic* | 15.8782 (0.000) |
| *Adjusted R-squared* | 0.2998 | *Durbin-Watson stat* | 1.0712 |

Source: Eview 10 output, 2023

## 4.3. Test of Hypotheses

The results obtained from the previous section are useful for conducting statistical testing of the hypotheses of the study. They also generate strong issues for discussion. In testing the hypotheses, focus is on the statistical significance of the relevant variables examined in the empirical analysis.

**Hypothesis One**

*Inflation rate has no significant impact on the performance of non-life insurance firms in Nigeria.* The results obtained from the estimates showed that inflation rate is positively significant. Based on the t-test of significance for the variable, the t-value is significant at the 1 percent level. Thus, we reject the null hypothesis.

**Hypothesis Two**

*Exchange rate has no significant impact on the performance of non-life insurance firms in Nigeria.* The results obtained from the estimates showed that exchange rate is negatively significant. Based on the t-test of significance for the variable, the t-value is significant at the 1 percent level. Thus, we reject the null hypothesis.

**Hypothesis Three**

*Interest rate has no significant impact on the performance of non-life insurance firms in Nigeria.* The result obtained from the estimate showed that interest rate is positive and not significant. Based on the t-test of significance for the variable, the t-value is not significant at the 5 percent level. Thus, we fail to reject the null hypothesis.

**Hypothesis Four**

*GDP has no significant impact on the performance of non-life insurance firms in Nigeria.*

The result obtained from the estimate showed that GDP is negative and significant. Based on the t-test of significance for the variable, the t-value is significant at the 1 percent level. Thus, we reject the null hypothesis.

**4.4. Discussion of Findings**

Insurance firms serve as a cover for both firms and individual. Both their functions are not well appreciated in Nigeria due to many factors outside the scope of this study. The result from this study showed that inflation rate has a positive impact on the performance of non-life insurance firms in Nigeria.

On the other hand, the result also showed that exchange rate and GDP have negative impact on the performance of non-life insurance firms in Nigeria. This shows that increase in exchange rate reduces the value of the performance of the insurance. In addition, the boost in economy activities reduces the performance of the insurance firms. This could be ascribe to the habit of the citizen towards insurance policy

# CHAPTER FIVE

# SUMMARY OF FINDINGS, RECOMMENDATIONS AND CONCLUSION

## 5.1 Summary of Findings

This study focuses on empirically estimating the relationship between macroeconomic variables on the performance of non-life insurance firms in Nigeria. Twenty (20) non-life insurance firms were used in this study.

Five variables such as; TOBIN Q, inflation rate (INFLR), exchange rate (EXRT), interest rate (INTR), and GDP were used for the estimation. The data used ranges from 2015 to 2021 across 20 non-life insurance firms in Nigeria. And the number of observation is (20 non-life insurance firms times 7 years) 140. This study used the panel regression technique. This implies that 140 observations are pooled together before the regression is run, thus neglecting the time series nature and cross sectional nature of the data.

The Ordinary Least squares estimations were employed in the estimation of the models. Results from the empirical analysis showed that there is significant relationship between macroeconomic variables (Inflation rate, exchange rate and GDP) and the performance of non-life insurance firms in Nigeria. Specifically, the following findings were made:

- That inflation rate has a positive impact on the performance of non-life insurance firms in Nigeria.

- That exchange rate has a negative impact on the performance of non-life insurance firms in Nigeria.
- That interest rate does not have any impact on the performance of non-life insurance firms in Nigeria.
- That GDP has a negative impact on the performance of non-life insurance firms in Nigeria.

## 5.2 Recommendations

Following the findings from this study the following recommendations are made:

i. That government should engage on policy to ensure price stability in the economy. And that insurance firm should spread their investment to overcome inflationary tendency which is outside the control of the firm.

ii. That insurance company should hedge against fluctuation in exchange rate through a balance investment management.

iii. That effective and sustainable interest rate system that will be beneficial to the financial sector should be maintained.

iv. That government should encourage insurance habit in Nigeria by making insurance policy compulsory. And the insurance firms should carry out an effective overhaul of the sector to make it attractive to both prospective clients and investors.

## 5.3 Conclusion

This study shows the impact of macroeconomic factors on the performance of non-life insurance firms in Nigeria. The study showed that inflation rate, exchange rate and GDP affect the performance of non-life insurance firms in Nigeria. And that insurance firms should reinvent the wheel by introducing innovations that could lead to introduction of new product and services. And that regulator in the insurance sector should ensure that effective and efficient supervisory machinery in put in place to ensure the stability, sustainability and profitability of the insurance firms in Nigeria.

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## Appendix 1

### Regression Result

Dependent Variable: TOBINQ
Method: Panel Least Squares
Date: 10/23/23 Time: 19:57
Sample: 2015 2021
Periods included: 7
Cross-sections included: 20
Total panel (balanced) observations: 140

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 0.914415 | 0.380842 | 2.401037 | 0.0177 |
| INFLR | 0.019708 | 0.008952 | 2.201592 | 0.0294 |
| EXRT | -0.001087 | 0.000607 | -1.791547 | 0.0754 |
| INTR | 0.002931 | 0.015992 | 0.183305 | 0.8548 |
| GDP | -0.269652 | 0.044580 | -6.048722 | 0.0000 |

| | | | |
|---|---|---|---|
| R-squared | 0.254638 | Mean dependent var | 0.588143 |
| Adjusted R-squared | 0.232553 | S.D. dependent var | 0.248722 |
| S.E. of regression | 0.217891 | Akaike info criterion | -0.174586 |
| Sum squared resid | 6.409304 | Schwarz criterion | -0.069527 |
| Log likelihood | 17.22102 | Hannan-Quinn criter. | -0.131893 |
| F-statistic | 11.53002 | Durbin-Watson stat | 0.285983 |
| Prob(F-statistic) | 0.000000 | | |

Dependent Variable: TOBINQ
Method: Panel Least Squares
Date: 10/23/23 Time: 19:57
Sample: 2015 2021
Periods included: 7
Cross-sections included: 20
Total panel (balanced) observations: 140

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 0.898159 | 0.233459 | 3.847187 | 0.0002 |
| INFLR | 0.019654 | 0.004659 | 4.218933 | 0.0000 |
| EXRT | -0.001072 | 0.000334 | -3.209243 | 0.0017 |
| INTR | 0.003250 | 0.008642 | 0.376096 | 0.7075 |
| GDP | -0.263035 | 0.055752 | -4.717910 | 0.0000 |

| Effects Specification | | | |
|---|---|---|---|
| Cross-section fixed (dummy variables) | | | |
| R-squared | 0.827928 | Mean dependent var | 0.588143 |
| Adjusted R-squared | 0.793811 | S.D. dependent var | 0.248722 |
| S.E. of regression | 0.112940 | Akaike info criterion | -1.369117 |
| Sum squared resid | 1.479629 | Schwarz criterion | -0.864835 |
| Log likelihood | 119.8382 | Hannan-Quinn criter. | -1.164192 |
| F-statistic | 24.26687 | Durbin-Watson stat | 1.237115 |
| Prob(F-statistic) | 0.000000 | | |

Dependent Variable: TOBINQ
Method: Panel EGLS (Cross-section random effects)
Date: 10/23/23 Time: 19:58
Sample: 2015 2021
Periods included: 7
Cross-sections included: 20
Total panel (balanced) observations: 140
Swamy and Arora estimator of component variances

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 0.901758 | 0.230061 | 3.919644 | 0.0001 |
| INFLR | 0.019666 | 0.004654 | 4.225221 | 0.0000 |
| EXRT | -0.001075 | 0.000330 | -3.260429 | 0.0014 |
| INTR | 0.003180 | 0.008565 | 0.371230 | 0.7110 |
| GDP | -0.264500 | 0.050382 | -5.249926 | 0.0000 |

| Effects Specification | | |
|---|---|---|
| | S.D. | Rho |
| Cross-section random | 0.193133 | 0.7452 |
| Idiosyncratic random | 0.112940 | 0.2548 |

| Weighted Statistics | | | |
|---|---|---|---|
| R-squared | 0.319944 | Mean dependent var | 0.126931 |
| Adjusted R-squared | 0.299794 | S.D. dependent var | 0.134470 |
| S.E. of regression | 0.112522 | Sum squared resid | 1.709275 |
| F-statistic | 15.87824 | Durbin-Watson stat | 1.071190 |
| Prob(F-statistic) | 0.000000 | | |

| Unweighted Statistics | | | |
|---|---|---|---|
| R-squared | 0.254564 | Mean dependent var | 0.588143 |
| Sum squared resid | 6.409938 | Durbin-Watson stat | 0.285644 |

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 | 0.000000 | 4 | 1.0000 |

* Cross-section test variance is invalid. Hausman statistic set to zero.

Cross-section random effects test comparisons:

| Variable | Fixed | Random | Var(Diff.) | Prob. |
|---|---|---|---|---|
| INFLR | 0.019654 | 0.019666 | 0.000000 | 0.9511 |
| EXRT | -0.001072 | -0.001075 | 0.000000 | 0.9511 |
| INTR | 0.003250 | 0.003180 | 0.000001 | 0.9511 |
| GDP | -0.263035 | -0.264500 | 0.000570 | 0.9511 |

Cross-section random effects test equation:
Dependent Variable: TOBINQ
Method: Panel Least Squares
Date: 10/23/23 Time: 19:58
Sample: 2015 2021
Periods included: 7
Cross-sections included: 20
Total panel (balanced) observations: 140

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 0.898159 | 0.233459 | 3.847187 | 0.0002 |
| INFLR | 0.019654 | 0.004659 | 4.218933 | 0.0000 |
| EXRT | -0.001072 | 0.000334 | -3.209243 | 0.0017 |
| INTR | 0.003250 | 0.008642 | 0.376096 | 0.7075 |
| GDP | -0.263035 | 0.055752 | -4.717910 | 0.0000 |

Effects Specification

Cross-section fixed (dummy variables)

| | | | |
|---|---|---|---|
| R-squared | 0.827928 | Mean dependent var | 0.588143 |
| Adjusted R-squared | 0.793811 | S.D. dependent var | 0.248722 |
| S.E. of regression | 0.112940 | Akaike info criterion | -1.369117 |
| Sum squared resid | 1.479629 | Schwarz criterion | -0.864835 |

| | | | |
|---|---|---|---|
| Log likelihood | 119.8382 | Hannan-Quinn criter. | -1.164192 |
| F-statistic | 24.26687 | Durbin-Watson stat | 1.237115 |
| Prob(F-statistic) | 0.000000 | | |