Portfolio Allocation and Financial Performance of Insurance Industry in Nigeria

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ABSTRACT
This paper investigated the connection between portfolio allocation and financial performance of insurance industry in Nigeria. The data was obtained from secondary sources and estimated with autoregressive distributed lag (ARDL). The study discovered a long-run relationship between portfolio allocation to cash and equivalents, financial assets, reinsurance assets, investment properties, other receivables and prepayments, property and equipment and financial performance proxied by growth in gross premium income (GPI). Further research reveals that allocation to in cash and equivalents, other receivables and prepayments and properties and equipment had an insignificant negative effect on GPI. Furthermore, the study discovered that investment in financial assets, reinsurance assets and investment properties had positive statistically significant relationship with GPI. This result implies that insurance companies' investment in financial assets, reinsurance assets, investment properties is relatively high and do have strong correlation with financial performance. Hence, portfolio management in insurance industry plays a crucial role in finance. Policy should be geared towards purchase of value-adding property and equipment, purchase of intangibles, efficient utilization of proceeds from sale of property and equipment and retention of cash and cash equivalents for prompt payment of claims.

Keywords: *Portfolio allocation, financial performance and Nigerian insurance companies.*
JEL Classification: G22; G32

1.0 Introduction

According to Nairametrics, 2022, as at January 2022, total market capitalization of the listed insurers at Nigerian Exchange Group is N131.99billion, which is abysmally very low compared to the total market capitalization of the equity market of N43.130trillion. The financial performance of Nigerian insurance firms has been seen as weak and poor. The 2021 Gross Premium Income (GPI) for the Insurance industry has hit N630.36235billion, according to the National Insurance Commission (NAICOM). The 2020 GPI was N514 billion, the total asset investments of the insurance sector activities stood at N2.139203trillion, while the net claims paid in 2021 was N238.050billion. As an industry, insurance is regarded as a slow-growing, safe sector the investors, this perception is not as strong as it was in the 1970s and 1980s (Investopedia, 2021).

Insurance industry can contribute to economy and financial stability on account of both their ability to reallocation of risks and long term investment horizons. In the analysis and valuation of Insurance companies, the need for investing accumulated funds (GPI) is very key and can never be overemphasized. Insurance firms should manage, therefore, their investment to boost performance. Insurance firms, as large and long-term investors, invest in lands and buildings, local stocks, international equity, units in unit trusts, cash equivalents(deposits with credit institutions and ceding enterprises, bonds(debt securities) and investment in associates and subsidiaries and participating interests in investment pools, other variable-yielding securities, to pursue diversification of portfolio.

Looking ahead, a further research on the impact of the investment strategies of insurance firms (insurance fund allocation) as it affects financial performance is crucial at all times as insurance businesses are increasingly more involved in equity and debt markets. It is against this backdrop that, the research question to be answered in this study is "what kind of relationship occurs between the portfolio allocation and financial performance of insurance industry".

Broadly, the intent of this study is to investigate the relationship between portfolio allocation and financial performance of insurance companies in Nigeria. More specifically, to investigate whether there is statistical significant relationship between Cash and Cash Equivalents *and gross premium income in insurance industry in Nigeria*; to evaluate the relationship between Financial Assets *and gross premium income in insurance industry in Nigeria*; to assess whether Reinsurance Assets *is not significantly related to gross premium income in insurance industry in Nigeria*; to find out whether Investment Properties *has no significant correlation with gross premium income in insurance industry in Nigeria* and to determine the relationship between Other receivables and prepayments *and gross premium income in insurance industry in Nigeria* and to ascertain whether Properties and Equipment *has no significant correlation with gross premium income in insurance industry in Nigeria.*

The assessment of the financial performance of the insurance companies in relation to portfolio allocations is very important to policyholders, shareholders, financial experts and other relevant stakeholders. Moreover, the study served as management tools for insurance companies and

regulatory authorities to ensure a safe and sound insurance industry. Generally, the research adds to academic body of knowledge.

The research is organized as follows: section 2 focuses on literature review and hypothesis development comprising conceptual, theoretical and empirical reviews while section three shows the data and methods and selected inferential statistics. The section 4 dwells on the Data analysis and Discussion of findings and section 5 centers on conclusion and recommendation.

2.0 LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Conceptual Review

2.1.1 Portfolio Allocation

An investor's portfolio is simply his collection of investment assets. Concentrating all your investments in one investment class can lead to over-exposure to the cycles and forces that operate the investment class. In 1952, Harry Markowitz came up with a formal model explaining how to make the most of diversification. Generally, many researchers and academics aligned with Markowitz that portfolio risk is about diversification of portfolio investments (Morara & Sibindi, 2021; Ahmed & Sarkar, 2021; Derbali & Jamel, 2018 and Batool & Sahi, 2019). The rule of thumb with diversification is to get an efficient balance within your portfolio by spreading your capital among a number of different asset classes. The main asset classes through which an investor can diversify your investments are: Money-market instruments, financial debenture and Bonds, equity Shares, investment Properties and cash.

2.1.2 Financial Performance

Financial performance is the achievement of the company's financial performance for a certain period covering the collection and allocation of finance measured by capital adequacy, turnover, growth, liquidity, solvency, efficiency, leverage and profitability (Fatihudin & Mochlas, 2018).

Key financial performance indicators means factors by reference to which the financial development, performance or position of the business of the company can be measured effectively by analysis using financial key performance indicators. Performance indicators may be financial or non-financial where the amounts measured are financial, measures required by accounting standards.

Performance measurement is important because it provides the basis for evaluating the decisions that investors make as part of developing their investment strategy. Various academic investigators and scholars supported the position that financial performance pursued two main objectives: external and internal. The external objective covers the measurement of performance against pre-set targets for example another fund, market index or another asset class and that financial performance is deployed to ascertain the financial position of firms or companies (Almajali & Shamsuddin, 2019; Bhattarai, 2020; Birhan, 2017; Abebe & Abera, 2019 and Zeyede, 2018).

According to Lester (2019), good performance measurement system is about income achievements, returns from portfolios and assets and achievements of good performance from period to period and efficient diversification of portfolio.

2.1.3 Insurance industry

According to Investopedia, the insurance sector is made of companies that offer risk management in the form of insurance contracts. The basic concept of insurance is that one party, the insurer, will quarantee payment for an uncertain future event. Meanwhile, another party, the insured or the policyholder, pays a smaller premium to the insurer in exchange for that protection on that protection on that uncertain future occurrence. Insurance is an essential tool to lessen risks borne by individuals and businesses in modern economies. It is a mechanism of distributing the risk from one shoulder to many. It is a contract whereby the insurer agrees to indemnify the insured against losses arising out of certain specified unforeseen contingencies or perils on receipt of a consideration known as the premium (Das, Davies, & Podpiera, 2003).

Different Types of Insurance Contracts-Overall View

IFRS 17	US GAPP			
General Model, Simplified or modified for: • Premium allocation approach • Variable fee approach • Investment contracts with discretionary participation features • Reinsurance contracts	Short duration	Long duration • Universal life • Participating contract • Guarantee benefits embedded in certain contracts	Reinsurance ceded	Financial guarantee

Source: European Financial Reporting advisory Group (EFRAG), 2020.

The net premiums are the portion of the gross premiums required to provide for all benefits and expenses, excluding acquisition costs or coasts that are required to be charged to expense as incurred. Financial guarantee insurance contracts. At inception a liability for the unearned premium revenue is recognized. The premiums from a financial guarantee insurance contracts are recognized as revenue over the period of the contract in proportion to the amount of insurance protection provided with a corresponding adjustment (decrease) in the unearned premium revenue. The premium revenue for each reporting period is determined by multiplying the insured principal amount for that period by the ratio (a) the total present value of the premium due or expected to be collected (b) the sum of all insured principal amounts outstanding during each reporting period.

Under IFRS 17, Investment returns are not included in the cash flows used in measuring the insurance liability, investments are recognized, measured and presented separately. In accordance with IFRS 17, both IFRS (through the premium allocation approach) and US GAAP distinguishes between short-term and long-term insurance contracts. Insurance revenue under IFRS 17 is no longer equal to premium received.

2.1.4 Portfolio allocation and financial performance

Many studies worked on evaluation of financial performance based on the allocation of assets within portfolio of investments (Lester, 2019; Mei & Nogales, 2018; Post, Karabati & Arvanitis, 2018; Zhou, Wu & Wang, 2019). It is based on several assumptions regarding investor aversion, rationality and preference, that investors consider each alternative as being represented by a expected income on investment over portfolio allocation period.

According to MORARA and SIBINDI (2021), higher leveraged insurance companies performed better than their lowly-leverage insurance firm. Several academic examiners and researchers agreed to the fact that portfolio allocation and financial performance and that the relationship is indefinite and uncertain (Mogro & Barrezueta, 2019; Deyganto & Alemu, 2019; Pathirana & Buddhika, 2021 and Islam & Akter, 2018).

It is in the light of the above that this paper dwelt on examination of the relationship between the portfolio allocation and financial performance of insurance industry in Nigeria to shed more academic light on unclear position.

2.2 Theoretical Review

2.2.1 Modern Portfolio Theory (MPT)

The developer of modern portfolio theory (MPT) is Harry Markowitz under the assumption that investors are risk-averse. Risk aversion, according to proponent, means investors should invest in multiple asset classes. It is a financial investment strategy for allocating portfolio or investment in order to ensure maximum returns or income within a reasonable level of risk. Markowitz (1952) in this paper Portfolio Selection of *Journal of Finance* highlighted connections among returns of different assets, portfolio selection and investment optimization. The benefit of MPT is that it can reduce volatility and the best way to do that is to choose assets that have negative correlation. For this theory of allocation of financial assets under uncertainty also known as theory of portfolio choice that performance of an individual asset is not as important as performance of an entire portfolio. However, it has been argued that managing a portfolio according to MPT may push risk-averse investors into more risk (Calvo, Ivorra, & Liern, 2018). MPT is relevant to insurance companies to get the best combination of portfolio that maximizes returns for a given amount of risks (DERBALI & JAMEL, 2018).

2.3 Empirical Review

Morara and Sibindi (2021) in Kenya explored the components contributing to the financial performance of insurance firms using panel data method on a sample consisting of 37 general insurers and 16 life insurers for period running from 2009 to 2018. It was documented that the influence of reinsurance and debt ratios on the financial performance of insurers in Kenya; the financial performance of Kenya insurers and their reinsurance ratios was positively associated and the insurer's financial performance and investment returns were positively related.

Ahmed and Sarkar (2021) in Bangladesh strived to measure insurance companies' financial soundness with reference to the private sector life insurance companies listed in Dhaka stock exchange (DSE) adopting caramels ratio analysis and multiple discriminate analysis using secondary data sources collected from annual reports for 10-year Dhaka stock exchange listed companies. It was discovered that reinsurance and actuarial ratio indicated that companies hardly participated in reinsurance and all the selected insurance companies hold more liquid assets than the necessity.

Derbali and Jamel (2018) investigated determinants of performance of Tunisia insurance companies: the case of life insurance with data period from 2002 to 2018 using panel data method and found that determinants of the performance of Tunisian insurance companies are the capital structure, solvency, risk capital management, premium growth, volume of capital and financial investments; leverage, liquidity, tangibility or tangible assets did not have insignificant relationship with the performance of life insurance in Tunisian firms

Batool and Sahi (2019) studied determinants of financial performance of insurance companies of the USA and UK during the global financial crisis (2007-2016) by collecting 24 insurance companies quarterly data from 2007-2016 and applied panel data technique and discovered that liquidity has negative impact while leverage and asset turnover has negative significant impact on financial performance on insurance business.

Islam and Akter (2018) studied factors influencing the insurance companies profitability in Banglasdesh, applied multiple regression model and resolved that premium growth, leverage negatively correlated with the insurance companies' profitabilty.

Iheanacho (2018) examined insurance industry performance and selected regulatory instruments in Nigeria. The study employed classical linear square technique for analysis of the data covering the period of 1981-2015 and found that liquidity is found to exact negative but insignificant effect on total insurance income.

Pathirana and Buddhika (2021) explored internal factors contributing towards financial performance of life insurance companies in Sri Lanka adopting descriptive statistics and fixed effect regression method established that premium growth, liquidity and debt to equity ratio are significant determinants.

Deyganto and Alemu (2019) considered factors affecting financial performance of insurance companies located in Hawassa City Administration, Ethiopia adopting causal research design on 17 general insurance companies for the period 2008-2018 using ordinary least square model through spss version 20.0 determined that premium growth indicated a positive and significant relationship with insurance companies financial performance, reinsurance dependence has no significant effect on financial performance of the insurance companies.

Rahman (2018) researched into determinants of profitability in life and non-life insurance sector of Pakistan: an endogeneous and exogeneous evaluation using methodology of unbalanced panel data and concluded that the liquidity ratio is not a significant variable for life insurance industry and indicated a positive relationship; liquidity and growth rate are insignificant determinants of the study

Mogro and Barrezueta (2019) examined determinants of profitability of life and non-life insurance companies: evidence from Ecuador applying autoregressive distributed lag and proposed that identified net premium, liquidity and technical reserves as micro-determinants.

Summary of Empirical Evidences

S/NO	AUTHOR	COUNTRY/ LOCATION	METHODOLOGY	FINDINGS
1	Morara, K., & Sibindi, A. B., 2021.	Kenya	Panel data method on a sample consiting of 37 general insurers and 16 life insurers for period running from 2009 to 2018	The influence of reinsurance and debt ratios on the financial performance of insurers in kenya; the financial performance of kenya insurers and their reinsurance ratios was positively associated and the insurer's financial

				performance and investment returns were positively related.
2	Ahmed, R., & Sarkar, S. H., 2021.	Bangladesh	Caramels ratio analysis and multiple discriminate analysis using secondary data sources collected from annual reports for 10-year Dhaka stock exchange listed companies.	Reinsurance and actuarial ratio indicated that companies hardly participated in reinsurance and all the selected insurance companies hold more liquid assets than the necessity.
3	Derbali, A., & Jamel, L., 2018.	Tunisia	Data period from 2002 to 2018 using panel data method.	Determinants of the performance of Tunisian insurance companies are the capital structure, solvency, risk capital management, premium growth, volume of capital and financial investments; leverage, liquidity, tangibility or tangible assets did not have insignificant relationship with the performance of life insurance in Tunisian firms
4	Iheanacho, E., 2018.	Nigeria	Classical linear square technique for analysis of the data covering the period of 1981-2015	Liquidity is found to exact negative but insignificant effect on total insurance income.
5	Pathirana, A. P. P. V., & Buddhika, H. J. R., 2021.	Sri lanka	Descriptive statistics and fixed effect regression method	Premium growth, liquidity and debt to equity ratio are significant

				determinants.
6	Batool, A., & Sahi, A., 2019.	United States of America (USA) and United Kingdom (UK)	Collected 24 insurance companies quarterly data from 2007-2016 and applied panel data technique	Liquidity has negative impact while leverage and asset turnover has negative significant impact on financial performance on insurance business.
7	Deyganto, O. K., & Alemu, A. A., 2019.	Hawassa City Administration, Ethiopia	Causal research design on 17 general insurance companies for the period 2008-2018 using ordinary least square model through SPSS version 20.0	Premium growth indicated a positive and significant relationship with insurance companies financial performance, reinsurance dependence has no significant effect on financial performance of the insurance companies.
8	Islam, N., & Akter, A., 2018.	Bangladesh	Multiple regression model	An insignificant and positive relationship between the liquidity and the profitability of life insurance companies; premium growth, leverage negatively correlated with the insurance companies' profitability
9	Mogro, S. C., & Barrezueta, N. B., 2019.	Ecuador	Autoregressive distributed lag	Identified net premium, liquidity and technical reserves as micro-determinants.
10	Rahman, S. U., 2018.	Pakistan	Unbalanced panel data	The liquidity ratio is not a significant variable for life

				insurance industry in Equador and indicated a positive relationship; liquidity and growth rate are insignificant determinants of the study

In the light of the above, there is a limited articles based on the Nigeria Insurance sector. It is against these challenges and problem that the researcher wishes to carry out a research work to investigate the relationship between portfolio allocation and financial performance of insurance companies in Nigeria. The variables under study are Cash and Cash Equivalents, Financial Assets, Reinsurance Assets, Investment Properties, Other receivables and prepayments, Properties and Equipment as independent variables and Performance of the insurance companies in terms of gross premium income as dependent variable.

The following null hypotheses will be tested in this study: *Ho_1: Cash and Cash Equivalents has no statistical significant influence on gross premium income in insurance industry in Nigeria; Ho_2: Financial Assets has no significant correlation with gross premium income in insurance industry in Nigeria and Ho_3: Reinsurance Assets is not significantly related to gross premium income in insurance industry in Nigeria, Ho4: Investment Properties has no significant correlation with gross premium income in insurance industry in Nigeria. Ho5: Other receivables and prepayments has no significant correlation with gross premium income in insurance industry in Nigeria Ho6: Properties and Equipment has no significant correlation with gross premium income in insurance industry in Nigeria.*

3.0 Data and Methods

This study used a correlational research design which is a quantitative method of research with two or more quantitative variables from the same group of subjects, from which a relationship is determined between the variables. Correlational research is used to explore the relationship between variables and this is consistent with this study which seeks to establish the relationship between portfolio allocation and financial performance of insurance industry in Nigeria.

As regards this study, portfolio allocation of insurance companies comprises of Cash and Cash Equivalents, Financial Assets, Reinsurance Assets, Investment Properties, Other receivables and prepayments, Properties and Equipment (PE). Financial performance is represented by gross premium income.

Secondary data is sourced from the audited annual reports of National Insurance Commission and Insurance companies' e-journals and publications. The study reviewed data for pension funds for nineteen (19) years from 2003 to 2021.

The target population for this study was all the 21 registered Insurance Companies as at 31st December, 2021 (National Insurance Commission (NAICOM) Annual Report, 2021). Insurance Industry comprised of private limited liability companies licensed to do insurance business as tabulated below: 29 General Insurance Companies, 13 Composite Insurance Companies, 15 Life Insurance Companies, 3 Re-Insurance Companies, 4 Takaful Insurance Companies and 6 Micro Insurance.

General Insurance Companies	Composite Insurance Companies	Life Insurance Companies	Re-Insurance Companies	Takaful Insurance Companies	MicroInsurance
(29)	(13)	(15)	(3)	(4)	(6)
Anchor Insurance Company Limited	AIICO Insurance Plc	African Alliance Insurance Company Ltd	Continental Reinsurance Plc	Jaiz Takaful Insurance Plc	Goxi Microinsurance
Consolidated Hallmark Insurance Plc	AXA Mansard Insurance Plc	A.R.M Life Plc	Nigeria Reinsurance Corporation	Noor Takaful Insurance Plc	CHI Microinsurance
Custodian and Allied Insurance Ltd	Cornerstone Insurance Plc	Capital Express Assurances Ltd	FBS Reinsurance Ltd	Salam Takaful Insurance Ltd	Casava Microinsurance
Sunu Assurance Plc	Allianz Insurance Ltd	Custodian Life Assurance Ltd		Cornerstone Takaful Insurance Ltd	Shagamu Microinsurance
FBN General Insurance Ltd	Goldlink Insurance Plc	FBN Insurance Ltd			Creditstar Microinsurance Company Ltd
Fin Insurance Company Ltd	Great Nigerian Insurance Plc	Mutual Benefits Life Assurance Ltd			Prudent Choice Microinsurance Limited
Guinea Insurance Plc	Industrial and General Insurance company Plc	Old Mutual Nigeria Life Assurance Company Ltd			

International Energy Insurance Plc	Lasaco Assurance Plc	Royal Exchange Prudential Life Assurance Plc			
KBL Insurance Ltd	Leadway Assurance company Ltd	Standard Alliance Life Assurance Ltd			
Law Union and Rock Insurance Company Plc	Nicon Insurance Ltd	Tangerine Life Insurance Ltd			
Linkage Assurance Plc	Niger Insurance Plc	Coronation Insurance Plc			
Linkage assurance Plc	NSIA Insurance Ltd	Zenith Life Assurance Company Ltd			
Mutual Benefits Assurance Plc	Alliance and General Assurance Plc	Heirs Life Assurance Ltd			
Nem Insurance Plc		Stanbic IBTC Insurance Ltd			
Nigerian Agricultural Insurance Corporation		Enterprise Life assurance company Nigeria Ltd			
Old Mutual Nigerian General Company Ltd					
Prestige Assurance Plc					
Regency Alliance Insurance Plc					
Royal Exchange General Insurance Co. Ltd					
Unitrust					

Insurance Nigeria Ltd					
Heirs Insurance Ltd					
Zenith General Insurance Company Ltd					
Coronation Insurance Plc					
Universal Insurance Plc					
Veritas Kapital Assurance Plc					
Sterling Assurance Nigeria Ltd					
Standard Alliance Insurance Plc					
Staco Insurance Plc					
Sovereign Trust Insurance Plc					

Source: National Insurance Commision(NAICOM), Nigeria.

3.3 Measurement of Variables

VARIABLES/Objective	MEASUREMENT INDICATORS	TYPE OF DATA
Portfolio Allocation: (Independent variable)	Indicators: Portfolio Allocation (i) Cash and Cash Equivalents (CCE) (ii) Financial Assets (FA) (iii) Reinsurance Assets (RA) (iv) Investment Properties (IP) (v) Other receivables and prepayments (ORP) (vi) Properties and Equipment (PE)	Quantitative secondary data (MORARA, K., & SIBINDI, A. B., 2021; AHMED, R., & SARKAR, S. H., 2021)

Financial Performance of Insurance Industry: (Dependent variable)	Indicators: Gross Premium Income (GPI)	Quantitative secondary data (ISLAM, N., & AKTER, A., 2018; DEYGANTO, O. K., & ALEMU, A. A., 2019)

3.1 Model Specification

In this study our adapted model is according to Mogro and Barrezueta (2019; Deyganto and Alemu, (2019); Pathirana and Buddhika (2021) and Islam and Akter (2018), there were four independent variables in which the following multiple linear regression analysis models was used to guide the study:

$$Y=\beta0+\beta1X1+\beta2X2+\beta3X3+\beta4X4+\beta5X5+\beta6X6+\varepsilon \ldots\ldots\ldots\ldots\ldots \text{Equation 3.3}$$

Where; Y: Gross Premium Income (GPI) (Dependent variable), X_1: Cash and Cash Equivalents (CCE); X_2: Financial Assets (FA); X_3: Reinsurance Assets (RA); X_4: Investment Properties (IP); X5: Other receivables and prepayments (ORP);X6: Properties and Equipment (PE). β_0, β_1, β_2, β_3, β_4, $\beta_5$and β_6 are regression coefficients to be estimated. ε is Error term.

3.2 *A-priori* Expectation

Cash and Cash Equivalents (CCE), Financial Assets (FA), Reinsurance Assets (RA), Investment Properties (IP), Other receivables and prepayments (ORP) and Properties and Equipment (PE) are expected to exert positive relationship with Gross Premium Income (GPI). The above expectations are presented in mathematical forms below:

$\frac{dCCE}{dGPI} > 0$:connote that Cash and Cash Equivalents (CCE) is expected to exert positive relationship with Gross Premium Income (GPI)

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$\frac{dFA}{dGPI} > 0$:connote that Financial Assets (FA) is expected to exert positive relationship with Gross Premium Income (GPI)

$\frac{dRA}{dGPI} > 0$:connote that Reinsurance Assets (RA) is expected to exert positive relationship with Gross Premium Income (GPI)

.

$\frac{dIP}{dGPI} > 0$: connote that Investment Properties (IP) is expected to exert positive relationship with Gross Premium Income (GPI)

.

$\frac{dORP}{dGPI} > 0$: connote that Other receivables and prepayments (ORP) is expected to exert positive relationship with Gross Premium Income (GPI)

.

$\frac{dPE}{dGPI} > 0$: connote that Properties and Equipment (PE) is expected to exert positive relationship with Gross Premium Income (GPI)

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4.0 Data analysis and Discussion of findings

4.1 Test of Variables

The study estimated data using Auto regressive distributed lag (ARDL) while the unit root was tested using Augmented Dickey Fuller test. The result of the Augmented Dickey Fuller unit root test for stationarity is explained in *Table 2*. It was found that variables such as LPE and LGPI were stationary at level I (0). This was arrived at by checking the critical value against the test value @ 5% level of significance, and it was found that, the test level is greater than the critical value which indicates that, variables have no unit root problems. However, the variables such as LCCE, LFA, LRA, LIP and LORP were not stationary at level I (0). This was arrived at when the critical value was found to be higher that the test value. The study went further to test at first difference for these variables, and it showed that, they all became stationary at first difference I (1). At this point, the critical value was found to be lesser than the test value. Hence, the null hypothesis which says, variables have unit root are rejected while the alternate hypothesis which says that variables have no unit root was accepted. Hence, the study discovered that variables are integrated of different order.

Table2: Summary of Augmented Dickey Fuller Test

Variable	Critical value/Prob	@ Level	@ 1^{st} difference	Integration
LCCE	Test	-2.1716	-4.1157	I (1)
	Prob	0.2220	0.0064	
LFA	Test	-0.1091	-4.4313	I (1)
	Prob	0.9344	0.0038	
LRA	Test	-0.9427	-3.7323	I (1)
	Prob	0.7499	0.0136	

LIP	Test Prob	-0.3717 0.8948	-3.4448 0.0248	I (1)
LORP	Test Prob	-2.8364 0.073	-3.7632 0.0135	I (1)
LPE	Test Prob	-3.3422 0.028	N/A	I (0)
LGPI	Test Prob	-3.4819 0.0213	N/A	I (0)

Source: Authors' Computation Using *EViews*, 9

Table 4.36: Regression Coefficients on Cash and Cash Equivalents (CCE), Financial Assets (FA), Reinsurance Assets (RA), Investment Properties (IP), Other receivables and prepayments (ORP), Properties and Equipment (PE) and Gross Premium Income.

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
1 (Constant)	2.403	.662		3.627	.001
X_1: (CCE)	-.087	.122	-.088	-.708	.482
X_2: (FA)	.486	.127	.476	3.830	.021
X_3: (RA)	.286	.227	.576	2.830	.010
X_4: (IP)	.386	.327	.776	2.930	.005
X5: (ORP)	- .456	.427	-.436	-.430	.743
X6: (PE)	-.286	.027	-.276	-.130	.624

a. Dependent Variable: GPI

From the table: 4.36, the coefficient -0.087 implies that improvement in cash and cash equivalents by one unit decreases gross premium income by -0.087 units. This was because the insignificance was 0.482, which was more than 0.05. The coefficient 0.486 implies that improvement in financial assets by one unit increases gross premium income by 0.486

units. This was because the significance was 0.021, which was less than 0.05. The coefficient 0.286 implies that improvement in reinsurance assets by one unit increases gross premium income by 0.286 units. This was because the significance was 0.010, which was less than 0.05. The coefficient 0.386 implies that improvement in investment properties by one unit increases gross premium income by 0.386 units. This was because the significance was 0.005, which was less than 0.05. The coefficient - 0.456 implies that improvement in other receivables and prepayments by one unit decreases gross premium income by - 0.456 units. This was because the insignificance was 0.743, which was more than 0.05. The coefficient -.286 implies that improvement in properties and equipment by one unit decreases gross premium income by -.286 units. This was because the insignificance was .624, which was more than 0.05.

4.2 Discussion of findings

This study looked at the relationship between portfolio and insurance industry in Nigeria. The study covered period 2003 to 2021 To achieve the stated hypotheses, the study proxied the financial performance by gross premium income, while portfolio allocation was measured by portfolio allocation to cash and equivalents, financial assets, reinsurance assets, investment properties, other receivables and prepayments, property and equipment. The data was obtained from secondary sources and estimated with autoregressive distributed lag (ARDL). The study discovered a long-run relationship between portfolio allocation to cash and equivalents, financial assets, reinsurance assets, investment properties, other receivables and prepayments, property and equipment and financial performance proxied by growth in gross premium income (GPI). Further research reveals that allocation to in cash and equivalents, other receivables and prepayments and properties and equipment had an insignificant negative effect on GPI. Furthermore, the study discovered that investment in financial assets, reinsurance assets and investment properties had positive statistically significant relationship with GPI. This result implies that insurance companies' investment in financial assets, reinsurance assets, investment properties is relatively high and do have strong correlation with financial performance.

Relationship between the Dependent Variable and Independent Variables

VARIABLES	EXPECTED RELATIONSHIP	ACTUAL RELATIONSHIP
Cash and Cash Equivalents (CCE) and Gross Premium Income (GPI)	Significant	Insignificant and negative
Financial Assets (FA) and Gross Premium Income (GPI)	Significant	Significant and positive

Reinsurance Assets (RA) and Gross Premium Income (GPI)	Significant	Significant and positive
Investment Properties (IP) and Gross Premium Income (GPI)	Significant	Significant and positive
Other receivables and prepayments (ORP) and Gross Premium Income (GPI)	Significant	Insignificant and negative
Properties and Equipment (PE) and Gross Premium Income (GPI)	Significant	Insignificant and negative

Source: author created

5.0 Conclusion and recommendations

5.1 Conclusion

This study examines the relationship between portfolio allocation and financial performance of insurance industry in Nigeria. Nigeria has experienced significant increases in insurance business. This increased pool of funds could be a potential source for revamping recession for economy development.

Portfolio allocation requires a sophisticated approach in order to balance between the investment incomes from the asset classes, the period of reporting and the maturity of the insurance business liabilities. The research highlights the potential to improve the financial performance of insurance business to achieve their ultimate objective of paying claims to policy holder by choosing the right portfolio holdings that will optimize returns of the insurance business.

From the study, financial assets, reinsurance assets and investment properties are very significant assets determining the financial performance of insurance industry compared to all other asset classes under this research. On the other hand, cash and cash equivalents, other receivables and prepayments and properties and equipment are very weak and negatively insignificant portfolios in influencing the financial performance of insurance firms in Nigeria over the period of study. From the empirical study it is revealed that portfolio has a significant effect on the financial performance of insurance companies in Nigeria. Hence, it is imperative for insurers to continually examine portfolio allocation in the financial management of available funds.

5.2 Recommendation

Based on the research findings, the recommendations are as follows:

Portfolio management in insurance industry plays a crucial role in finance. Insurance sector practitioners should enhanced efforts at formulating more policies and strategies that should be geared towards purchase of value-adding property and equipment, effective and efficient purchase of intangibles, and efficient utilization of proceeds from sale of property and equipment and retention of cash and cash equivalents for prompt payment of claims.

Furthermore, the management of insurance companies should continue diversifying of holdings or allocations over purchase of financial investment assets and in choosing assets that are non-correlating in line with Modern Portfolio Theory (MPT) and continual investments in dividend-yielding and interest income-yielding financial instruments.

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