

# GUINEA INSURANCE PLC.

FINANCIAL CONDITION REPORT FOR NON-LIFE  
BUSINESS AS AT 31<sup>ST</sup> DECEMBER 2023



Building a better  
working world

## EXECUTIVE SUMMARY

This report provides an overview of the Financial Condition of the Company. We also understand that this report will form part of the Company's submission to NAICOM. The report has been prepared in accordance with the General Insurance Business Actuarial Reports Guidance Notes (GN12v5.0) published by the Institute and Faculty of Actuaries.

**The following are the key conclusions of the report.**

- ▶ As at 31st December 2023, the business had a Net Book Asset Value of N3.49 or 117% of the statutory minimum capital of N3billion. Hence the business is capitalized from the current regulatory point of view.
- ▶ We estimate the economic/risk-based capital required to support the business at 31st December 2023 as N809.8 million, a coverage of 432% of the shareholder's Funds of 3.49 million. The company thus holds a cushion above its economic capital which enhances its ability to meet its obligations to policyholders in adverse scenarios.
- ▶ We noted that the proportion of GWP brought in by the Broker channel is 84%. We advise that the company expands other distributions channels such as digitization and bancassurance to write its business to widen its reach and increase its penetration in the market.
- ▶ The highest contributor to total GWP remains General Accident line of business which contributed approximately 56% to premiums. We recommend that the company continues to monitor the portfolio to mitigate the pending concentration risk in general accident.
- ▶ Return on equity for the past three years (2021 - 2023) have been negative except for the year 2023 and was still below the risk-free rate. We advise that the company targets average returns over a rolling period (e.g., 3 years) to exceed Treasury bill rates with the aim of rewarding shareholders for the risk they have undertaken by investing in the company.

## Table of Contents

EXECUTIVE SUMMARY .....	1
1. Introduction, Purpose and Limitations .....	3
2. Development in Business .....	5
3. Business Overview .....	6
4. PRICING & PREMIUM ADEQUACY .....	9
5. ASSET LIABILITY MANAGEMENT .....	10
6. Capital Management & Adequacy .....	11
6. Economic Capital .....	14
7. Reinsurance Management Strategy .....	16
8. Financial Condition as at 31 <sup>st</sup> December 2023 .....	178
9. New Business Plans .....	189
10. Solvency Projections .....	20
11. Economic Capital....	12
12. Conclusion and Recommendations .....	193

## APPENDICES

1. RELIANCE & LIMITATIONS	
2. REINSURANCE TREATY PROGRAM	
3. REVENUE ACCOUNTS	
4. COMBINED RATIO TABLE	
5. ECONOMIC CAPITAL RESULTS AT 99% CONFIDENCE LEVEL	
6. ECONOMIC CAPITAL RESULTS AT 95% CONFIDENCE LEVEL	
7. ECONOMIC CAPITAL METHODOLOGY & STRESS LEVEL DERIVATION	

The Managing Director  
Guinea Insurance Plc  
33 Ikorodu-Ososun Rd,  
Fadeyi  
Lagos.

July 2024

## FINANCIAL CONDITION REPORT FOR NON-LIFE BUSINESS AS AT 31<sup>ST</sup> DECEMBER 2023

Dear Sir,

### Introduction, Purpose and Limitations

1.1 We are pleased to present our Financial Condition Report (“FCR”) for **Guinea Insurance Plc.** (“the Company”) as at 31st December 2023.

Purpose:

1.2 This report sets out the outcome of our assessment of the criteria stipulated in the Guidance note (GN12v5.0), issued by the Institute and Faculty of Actuaries, to the extent relevant to Guinea Insurance Plc for the year ended 31st December 2023.

1.3 This report is prepared solely for the purpose of providing an overview of the current financial condition of the Company. We understand that this report will form part of your submission to NAICOM. This report is not to be used for any other purpose other than that described above and should not be distributed to any other parties other than NAICOM.

Limitations:

1.4 Management is solely responsible for the contents and submission of the Financial Conditions Report in accordance with Guidance Note GN12V5.0

1.5 Because our assessment does not constitute either an audit or a review made in accordance with International Standards on Auditing or International Standards on Review Engagements (or relevant national standards or practices), we do not express any assurance on the financial statements, the financial conditions or the ability of the entity to continue as a going concern for the foreseeable future.

1.6 Had we performed additional procedures, or had we performed an audit or review of the financial statements in accordance with International Standards on Auditing or International Standards on Review Engagements (or relevant national standards or practices), other matters might have come to our attention that would have been reported to you.

1.7 Our report has been prepared based on certain assumptions and is subject to certain limitations. These have been described in Appendix 1 - Reliance and Limitations.

## 2. Developments in the Business

2.1 We illustrate in the table below how Guinea's books have developed over the year 2022 to 2023.

	2022 N'000	2023 N'000	YoY Movement
Insurance Revenue	1,390,650	2,077,012	49%
Insurance Service Expense	(571,292)	(1,117,590)	96%
Net expenses from reinsurance contracts held	(224,974)	(285,739)	27%
Insurance Service Result	594,385	673,683	13%
Investment Return	102,823	201,022	96%
Net fair value gains/(losses) on financial assets at FVTPL	9,500	321,377	3283%
Fair value gains on investment properties	6,700	37,000	452%
Other operating income	113,613	208,164	83%
Other Operating Expenses	(902,170)	(940,876)	4%
Impairment loss	(210)	(722)	245%
Profit before Tax	(75,359)	499,647	663%
Income Tax	(7,915)	(23,855)	201%
Profit after Tax	(83,274)	475,792	571%

There was a significant increase in the profit before tax due to the increase in insurance service result as well as notable increase in investment return.

## 3. Business Overview

### 3.1 Premium History

Gross Written Premium (GWP) has increased with an average of 36.4% over the years under review.

Line of Business	2021		2022		2023	
	₦' 000	%	₦' 000	%	₦' 000	%
Fire	287,871	21%	249,817	18%	503,906	21%
Motor	326,691	24%	352,120	26%	444,439	19%
General Accident	667,413	49%	659,918	49%	1,097,287	47%
Marine	74,433	5%	97,392	7%	84,349	4%
Oil & Gas	-	0%	-	0%	216,259	9%
<b>Total</b>	<b>1,356,408</b>	<b>100%</b>	<b>1,359,247</b>	<b>100%</b>	<b>2,346,240</b>	<b>100%</b>
<b>% Increase (YoY)</b>			<b>0.21%</b>		<b>73%</b>	

Line of Business	2022	2023	YoY Movement
Fire	249,817	503,906	102%
Motor	352,120	444,439	26%
General Accident	659,918	1,097,287	66%
Marine	97,392	84,349	-13%
Oil & Gas	-	216,259	100%
<b>Total</b>	<b>1,359,247</b>	<b>2,346,240</b>	<b>73%</b>

3.1.1 The GWP increased for all the lines of business from 2022 to 2023 except for Marine class of business.

3.1.2 The main drivers of growth are the Fire and General Accident classes of business which led to an 73% increase in 2023.

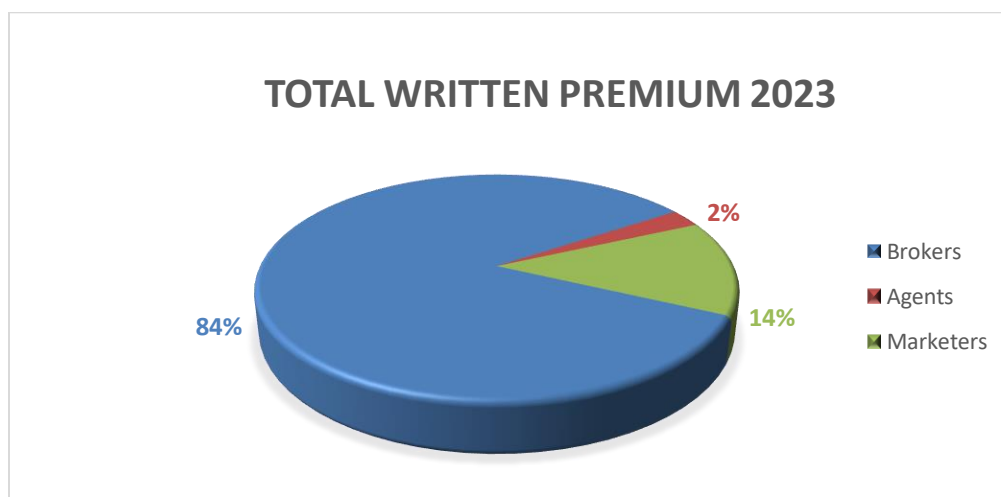
3.1.3 The General Accident and Fire have consistently contributed the highest to the GWP in the years under review.

3.1.4 We note that there is an impending concentration risk in the General Accident line of business. We recommend that Guinea writes more businesses in the other lines to help further diversify its portfolio to avoid an impending concentration risk in general accident line of business.

## 3.2 Distribution Channel

The chart below indicates three channels through which gross written premiums are channeled in.

Experience data shows that a significant proportion of business written by Guinea came through Brokers which contributed 84% of the total Gross Written Premiums, Agents contributed 3% and Marketers brought in 14% Of the total GWP.



## 3.3 Financial Performance

3.3.1 We illustrate below that the company's return on equity, as published in the Annual Financial Statements, has been consistently lower than the risk-free rate with the three years under review (2021 to 2023) being negative returns except for year 2023. We advise that the company targets average returns over a rolling period (e.g., 3 years) to exceed Treasury bill rates with the aim of rewarding shareholders for the risk they have undertaken by investing in the company.

Year	Shareholders Fund A'000	Return on Equity (as published in the Accounts) %	Risk Free Rate %
2021	2,089,533	-1%	13%
2022	2,038,009	-6%	14%
2023	3,449,081	14%	20%

## 4. Pricing & Premium Adequacy

We illustrate in the table below how premium income has been utilised from 2021 to 2023.

	2022 Restated	2023
	N'000	N'000
Net Insurance Revenue	956,466	1,458,966
Net Claims Incurred & Attributable expenses	104,709	232,367
Acquisition Expense	88,753	220,070
Investment Income	102,823	201,022
<b>Claims &amp; Attributable Ratio</b>	<b>11%</b>	<b>16%</b>
<b>Acquisition Expense Ratio</b>	<b>9%</b>	<b>15%</b>
<b>Combined Ratio</b>	<b>20%</b>	<b>31%</b>
<b>Investment Income (% NPI)</b>	<b>11%</b>	<b>14%</b>

We illustrate in the table above that claims & Attributable ratio remains increases from 11% to 16% and the acquisition expense increased from 9% to 15%. The combined ratio increased by 11% to 31% in 2023.

Based on the above analysis over a 2-year period, it is noted that Guinea has managed to achieve combined ratios below 35% in the last 2 years which demonstrate premium adequacy.

The investment income as a percentage of Net Premium Income increased to 14% (2023) from 11% (2022).

Metric	Definition
Claims & Attributable Expense Ratio	Net Claims Incurred & Attributable expenses / Net Insurance Revenue
Acquisition Expense Ratio	Acquisition Expenses / Net Insurance Revenue
Combined Ratio	Sum of Claims Incurred & Attributable Expense and Acquisition expense ratios
Investment Income (%NPI)	Investment Income / Net Insurance Revenue



## 5. Assets, Liabilities Management

### 5.1 Insurance Liability

We illustrate in the tables below the Gross Reserves of N 1.07 billion, Reinsurance Assets of N365.12 million giving a Net Reserve of N707.07 million.

Reserves	Gross Reserve (N'000)	Reinsurance Assets (N'000)	Net Reserve (N'000)
LIC	387,068,444	(109,903,271)	277,165,173
LRC_EX_Lc	685,118,846	(255,215,571)	429,903,275
LC	-	-	-
<b>Total</b>	<b>1,072,187,290</b>	<b>(365,118,842)</b>	<b>707,068,448</b>

### 5.2 Insurance Assets

We illustrate below that the company holds short-term assets i.e. Cash and Cash equivalents with leading banks and financial institutions to back its insurance fund. Guinea also has reinsurance assets from which are expected payments from leading reinsurers in respect of the technical reserves stated in section 3.1.

Assets	Insurance Funds			
	2023 (N'000)	%	Regulatory Maximum	Meet Requirement
Cash and cash equivalents	252,835	41%	No limit	Yes
Investment securities:		0%		
Reinsurance Assets	365,119	59%	Minimum of 20% of Policy holders funds.	Yes
<b>Total</b>	<b>617,954</b>	<b>100%</b>		

## 6. Capital Management & Adequacy

### 6.1.1 Balance Sheet Solvency

We illustrate in the table below that from 2021 to 2023, the company has a more than sufficient balance sheet solvency ratio.

Year	2021 (N'000)	2022 (N'000)	2023 (N'000)
Technical Liabilities (Net of Reinsurance)	483,801	496,031	707,068
Shareholders Fund (Free Assets)	2,119,752	2,078,055	3,495,474
<b>Balance Sheet Solvency Ratio</b>	<b>438%</b>	<b>419%</b>	<b>494%</b>

The solvency ratios give comfort that liability obligations will be met when they fall due. We highlight the regulatory solvency position below and discuss risk-based solvency in section 8.

### 6.1.2 Regulatory Solvency

We show in the table below that the company's admissible assets fall below the regulatory capital requirement of N3bn except for the year 2023.

Year	2021 (N'000)	2022 (N'000)	2023 (N'000)
Technical Liabilities (Net of Reinsurance)	483,801	496,031	707,068
Free Assets (allowing for admissible rules)	2,189,789	2,203,190	3,488,920
Minimum Capital Requirement	3,000,000	3,000,000	3,000,000
<b>Capital Adequacy Ratio (CAR)</b>	<b>453%</b>	<b>444%</b>	<b>493%</b>
<b>Regulatory Solvency Ratio</b>	<b>73%</b>	<b>73%</b>	<b>116%</b>

The below table demonstrates how the Capital Adequacy Ratio and Regulatory Solvency ratio would be materially impacted should claim ratio increase by 20%.

Year	2023 - Stressed (N'000)	2023 (N'000)
Technical Liabilities (Net of Reinsurance)	830,683	707,068
Free Assets (allowing for admissible rules)	3,365,306	3,488,920
Minimum Capital Requirement	3,000,000	3,000,000
<b>Capital Adequacy Ratio (CAR)</b>	<b>405%</b>	<b>493%</b>
<b>Regulatory Solvency Ratio</b>	<b>112%</b>	<b>116%</b>

While the regulatory solvency ratio falls to 112%, the Company would still meet its minimum capital requirement in the event of this extreme scenario.

#### DEFINITIONS

Metric	Definition
Capital Adequacy Ratio (CAR)	Free Assets/Minimum Capital Requirement
Balance Sheet Solvency Ratio	Shareholders' Funds/Technical Reserves
*Regulatory Solvency Ratio	Free Assets/Technical Reserves

\*Free assets include allowance for admissibility rules

## 6.1 Stress Scenario for 2023 Results

6.1.1 The below table demonstrates that the solvency margin would be materially impacted should the net claim ratio increase by 5%, 10% and 20% respectively.

Year	2023 - Stressed (N'000)	2023 (N'000)
Technical Liabilities (Net of Reinsurance)	737,972	707,068
Shareholders Fund (Free Assets)	3,464,570	3,495,474
<b>Balance Sheet Solvency Ratio</b>	<b>469%</b>	<b>494%</b>

Year	2023 - Stressed (N'000)	2023 (N'000)
Technical Liabilities (Net of Reinsurance)	768,876	707,068
Shareholders Fund (Free Assets)	3,433,667	3,495,474
<b>Balance Sheet Solvency Ratio</b>	<b>447%</b>	<b>494%</b>

Year	2023 - Stressed (N'000)	2023 (N'000)
Technical Liabilities (Net of Reinsurance)	830,683	707,068
Shareholders Fund (Free Assets)	3,371,860	3,495,474
<b>Balance Sheet Solvency Ratio</b>	<b>406%</b>	<b>494%</b>

The above stress tests shows that the Company's Balance Sheet Solvency ratio is above 400% at a 20% net increase in loss ratio across the whole account, which is considered an extreme scenario. This shows the resilience of the Company's Balance Sheet to short-term shocks, demonstrating a strong financial condition.

## 6.2 Economic Capital

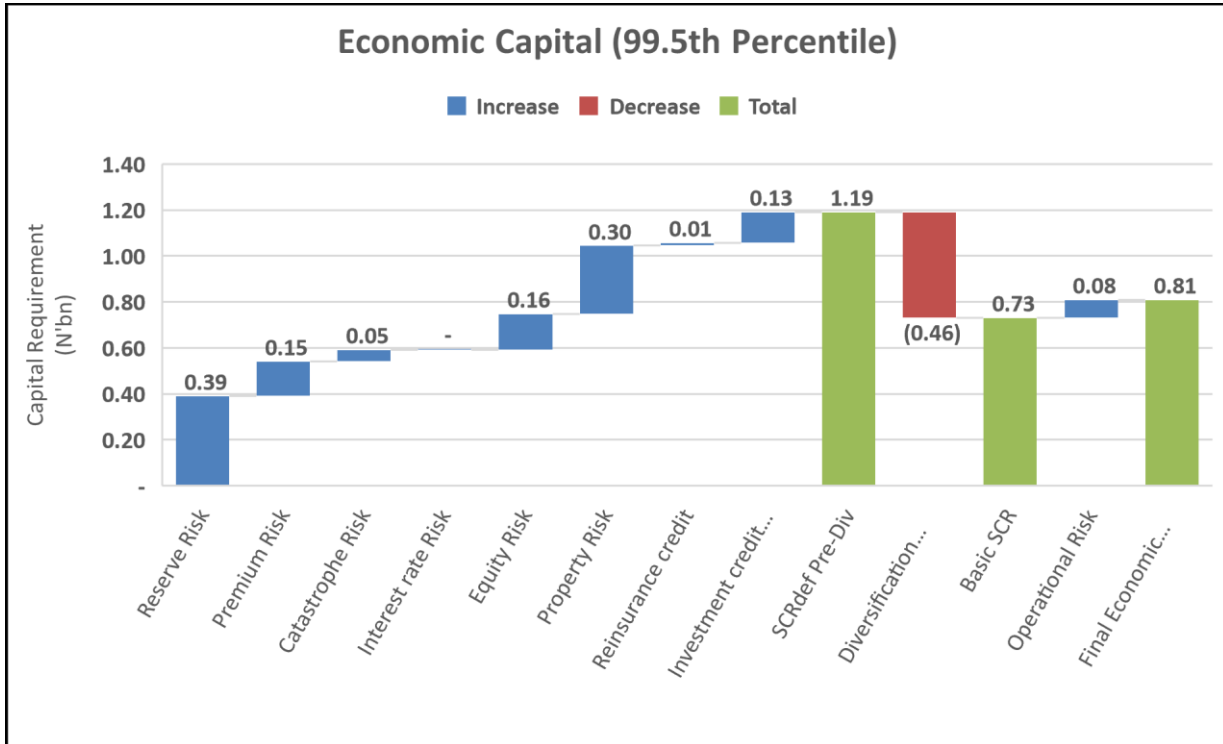
- 6.2.1 The technical figures (technical liabilities, reinsurance assets, etc.) estimated for balance sheet purposes are our 'best' estimate and broadly reflect the 'mean' of possible outcomes. However, in the course of time these estimates may fluctuate adversely as a result of unexpected realities.
- 6.2.2 It is prudent and best practice to estimate the extent to which the best estimate can be exceeded due to possible adverse situations and establish the corresponding risk capital, called economic capital. This is the amount of capital that a financial company requires to stay solvent given the riskiness of its assets and operations.
- 6.2.3 The key risks the company is exposed to are underwriting risk, market risk, counterparty risk and operational risk, they are described and discussed in appendix 6 of the report.
- 6.2.4 We have calculated for each of the risks, the amount of capital required as at year end 2023 at 95%, 99% and 99.5% level of confidence.
- 6.2.5 This report discusses in detail capital requirements at 99.5%, which is equivalent to a 1-in-200 event. Put differently, this is the capital required to sustain the company should extreme events that are expected to occur once every 200 years, occur in 2023. Such events would typically lead to large 'unexpected' losses that could significantly affect the fortunes of the company. The results at 95% (1 in a 20year event) and 99% (1 in a 100year event) are shown in appendix 5 and 6 of the report.
- 6.2.6 We have adopted the following methods in calculating the Economic capital:
- ▶ Value at Risk → this was applied to Market risk and Credit risk
  - ▶ Stochastic approach using Bootstrapping → this was applied to non-Life reserving and premium risks.
  - ▶ Solvency II standard formula approach was adopted for operational risk

Detailed explanation of each of the risks including derivation of the stresses applied are given in appendix 6 of the report.

- 6.2.7 In order to recognize that each individual risk event is unlikely to occur in the same year, aggregation of capital requirements was done. This has the effect of reducing the total required capital - technically called a diversification. The assumed correlation matrix is shown in appendix 7.
- 6.2.8 The calculations were based on same data used to prepare the IFRS valuation as at 31 December 2023 and asset information shown in section 2.3 of this report.

6.2.9 The following results at 99.5% confidence level were obtained.

Risk Type		Capital Requirement (N)
Non-Life Underwriting Risk	Reserve Risk	389,703,417
	Premium Risk	150,517,380
	Catastrophe Risk	51,212,961
	Lapse Risk	-
	SCR <sub>nl</sub> Pre-Div	591,433,757
	SCR <sub>nl</sub> Div Credit	141,437,147
	<b>SCR<sub>nl</sub> Post Div</b>	<b>449,996,610</b>
Market Risk	Interest Rate Risk	-
	Equity Risk	156,399,893
	Property Risk	296,683,299
	Spread Risk	-
	Currency Risk	-
	Concentration Risk	-
	<b>SCR<sub>mkt</sub> Post Div</b>	<b>368,351,088</b>
Counterparty Default Risk	Reinsurance credit	9,590,455
	Investment credit & Debtors	134,013,949
	SCR <sub>def</sub> Pre-Div	143,604,404
	SCR <sub>def</sub> Div Credit	-
	<b>SCR<sub>def</sub> Post Div</b>	<b>143,604,404</b>
Undiversified BSCR		961,952,103
Diversification Credit		232,054,861
Basic SCR		729,897,242
Operational Risk		78,619,750
<b>Final Economic capital</b>		<b>808,516,992</b>
<b>Shareholders' Funds</b>		<b>3,495,473,969</b>
<b>% of Economic Capital</b>		<b>432%</b>



6.2.10 As shown in the table above, the total Economic Capital required in connection with the business profile at 31st December 2023 was N809.8 Million which is lower than the shareholders' funds of N3.49 million.

6.2.11 This implies Guinea has capital excess which provides the management with capital flexibility to conduct its business plan over the forward-looking period considering inherent material risks (such as catastrophes) and in anticipation of continued difficult operating conditions in insurance, credit and financial markets.

## 7. Reinsurance Management Strategy

7.1 The Company's reinsurance arrangements are summarized in section 7.2.

For each line of business, we illustrate the 'value for money' being the ratio of total reinsurance inflow (i.e., commission income, reinsurance recoveries) to total reinsurance outflow/cost.

2022 Accident Year

N' 000

Class of Business	Fire	Motor	General Accident	Marine and Aviation	Total
<b>Outflow</b>					
<b>Cash paid to reinsurers</b>	126,871	17,979	264,422	40,264	449,536
<b>Inflow</b>					
<b>Reinsurance Contract Assets</b>	82,515	30,907	180,395	12,776	306,593
<b>Value for Money Ratio</b>	<b>65%</b>	<b>172%</b>	<b>68%</b>	<b>32%</b>	<b>68%</b>

2023 Accident Year

N' 000

Class of Business	Fire	Motor	General Accident	Marine and Aviation	Total
<b>Outflow</b>					
<b>Cash paid to reinsurers</b>	176,805	59,869	349,045	21,907	607,626
<b>Inflow</b>					
<b>Reinsurance Contract Assets</b>	91,552	41,681	215,182	16,704	365,119
<b>Value for Money Ratio</b>	<b>52%</b>	<b>70%</b>	<b>62%</b>	<b>76%</b>	<b>60%</b>

7.1.1 Guinea experienced decreased in the value for money ratio over the last 2 years from 68% (2022) to 60% (2023).

7.1.2 The decrease in Fire and Motor, lines of business are the highest contributors to the decrease in the value for money for this year.

7.1.3 The value for money ratios, however, does not take cognizance of other benefits reinsurance provides e.g. granting the company capacity to underwrite bigger risks than it would ordinarily have been able to take on due to its limited capital resources.

7.1.4 Also, the above suggests that the treaty arrangement are optimal. Details of the current reinsurance arrangement are provided in Appendix 3.



## 7.2 Reinsurance Management

### 7.2.1 Basis and Methods of Retention Levels

The retention limit and the associated product lines were established in liaison with the reinsurers. In setting these limits, the following were taken into consider:

- The nature and quality of the business
- Regulations imposed the regulatory body
- Risk appetite of Guinea

While Guinea reinsures six (6) reinsurers, majority of its businesses are with Continental Reinsurance and Waica Reinsurance which have stable ratings.

Illustrated in the table below is the list of Reinsurers and their ratings:

Reinsurer	Credit Rating
Continental Reinsurance Plc	B+
Waica Reinsurance Corporation plc	B+
African Reinsurance Corporation	A
Nigeria Reinsurance Corporation	BBB+
FBS Reinsurance Limited	Unrated
ZEP Reinsurance Company	BBB+

## 8. Financial Condition as at 31<sup>st</sup> December 2023

- ▶ We have illustrated above that the company has enough funds to meet its insurance contract liabilities under stressed conditions.
- ▶ The company's return on equity has also been consistently lower than the risk-free rate with the three years under review (2021 to 2023) with negative returns, except for year 2023.
- ▶ We are thus of the opinion that the company would be able to meet policyholder obligations if and when they fall due and is able to withstand stressed scenarios as evidenced by the stress tests.

### 8.1.1 We recommend that the company should:

- ▶ Explore other distributions channels such as digitization and bancassurance to write its business to widen its reach and increase its penetration in the market.
- ▶ Target average returns over a rolling period (e.g., 3 years) to exceed Treasury bill rates with the aim of rewarding shareholders for the risk they have undertaken by investing in the company.
- ▶ Continue to monitor the portfolio to mitigate the concentration risk in General Accident line of business.

## 9. New Business Plans

### 9.1 Business Plan Production

The table below indicates the year-on-year growth for the various lines of businesses.

Guinea has plans to grow at about 143% and 23% in 2024 and 2025 respectively. We illustrate the forecast in the table below.

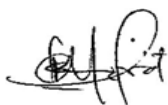
This seems quite ambitious given that the average growth for Guinea over the past 3 years is 36%. It is recommended that this forecast is monitored as the year progresses.

Line of Business	2023	2024		2025	
	₮' 000	₮' 000	YoY Growth	₮' 000	YoY Growth
Fire	503,906	1,254,000	149%	1,553,322	24%
Motor	444,439	1,197,000	169%	1,440,401	20%
General Accident	1,313,546	2,223,000	69%	2,743,122	23%
Marine	84,349	1,026,000	1116%	1,263,155	23%
<b>Total</b>	<b>2,346,240</b>	<b>5,700,000</b>	<b>143%</b>	<b>7,000,000</b>	<b>23%</b>

## 10. Conclusion and Recommendations

- 10.1 As at 31st December 2023, the business had a Net Book Asset Value of N3.49 or 117% of the statutory minimum capital of N3billion. Hence the business is capitalized from the current regulatory point of view.
- 10.2 We estimate the economic/risk-based capital required to support the business at 31st December 2023 as N809.8 million, a coverage of 432% of the shareholder's Funds of 3.49 million. The company thus holds a cushion above its economic capital which enhances its ability to meet its obligations to policyholders in adverse scenarios.
- 10.3 We noted that the proportion of GWP brought in by the Broker channel is 84%. We advise that the company expands other distributions channels such as digitization and bancassurance to write its business to widen its reach and increase its penetration in the market.
- 10.4 The highest contributor to total GWP remains General Accident line of business which contributed approximately 56% to premiums. We recommend that the company continues to monitor the portfolio to mitigate the pending concentration risk in General Accident.
- 10.5 Return on equity for the past three years (2021 - 2023) have been negative except for the year 2023 and was still below the risk-free rate. We advise that the company targets average returns over a rolling period (e.g., 3 years) to exceed Treasury bill rates with the aim of rewarding shareholders for the risk they have undertaken by investing in the company.
- 10.6 We are delighted to have conducted this Financial Conditioning Report for GUINEA Insurance Plc. We hope you find this helpful for preparing and submitting a report to NAICOM.
- 10.7 We will naturally be delighted to discuss it with you and make necessary presentations.

Yours sincerely,



.....  
**Miller Kingsley, FNAS, FSA**  
**Fellow, Nigerian Actuarial Society**  
**Fellow, Society of Actuaries, USA**  
**FRC/2012/NAS/00000002392**

## APPENDIX 1- RELIANCE & LIMITATIONS

### Reliance

In carrying out this work we have relied upon the financial statements, business plans and other information (including discussions with the Management) provided by Guinea Insurance Plc. The liability information used was the same as that used in the IFRS actuarial valuations. Where stated in this report we have reviewed this data for reasonableness, but we have not verified the accuracy of the information provided to us.

This report takes into account data made available as at 31 December 2023.

In some instances, we were unable to obtain granular information so had to make approximations in certain instances about the composition given knowledge of certain details during the normal end of year valuation process.

### Limitations

Our understanding is that this is a Board report that could be used to demonstrate regulatory compliance with NAICOM, when requested.

This report must be contained in its entirety, as individual sections, if considered in isolation, may be misleading.

Except with the consent of EY, the report and any written or oral information or advice provided by EY must not be reproduced, distributed or communicated in whole or in part to any other person or relied upon by any other person other than NAICOM.

The report may be distributed to the Senior Management of GUINEA Insurance Plc for the purpose of discussing its contents.

Actuarial estimates are subject to uncertainty from various sources, including changes in claim reporting patterns, claim settlement patterns, judicial decisions, legislation, and economic conditions. It should therefore be expected that the actual emergence of profits will vary, perhaps materially, from any estimates.

The report is subject to the terms and limitations, including limitation of liability, agreed when commencing this exercise.

## Appendix 2 - Reinsurance Appendix

CLASS	2023		
	TREATY TYPE RETURNS	TREATY CAPACITY	TOTAL CAPACITY
<b>FIRE/ALLIED PERILS</b>			
Con Loss, Householder/Comprehensive	1st Surplus 39 lines of N60,000,000	3,900,000,000	4,000,000,000
Terrorism & Political Violence	1st Surplus 15 lines of N20,000,000	300,000,000	320,000,000
Fire Working Excess of Loss	N40,000,000 Xs N60,000,000 per risk and per loss	100,000,000	100,000,000
<b>MARINE CARGO</b>			
<b>MARINE HULL</b>	Surplus 30 lines of N50,000,000	1,500,000,000	1,550,000,000
Engineering	Surplus 30 lines of N50,000,000	1,500,000,000	1,550,000,000
<b>CONTRACTORS ALL RISKS</b>			
Erection All Risk, Machinery Breakdown, E.E Plant All Risk, Boiler and Pressure Vessel	Surplus 30 lines of N50,000,000	1,500,000,000	1,550,000,000
<b>BURGLARY</b>			
Private Premises	Surplus 50 lines of N20,000,000.00	1,000,000,000	1,020,000,000
Business Premises	Surplus 50 lines of N25,000,000.00	1,250,000,000	1,270,000,000
<b>MONEY INSURANCE</b>			
Transit Per Conveyance	Surplus 25 lines of N10,000,000.00	250,000,000.00	260,000,000
Safe	Surplus 25 lines of N10,000,000.00	250,000,000.00	260,000,000
Personal Custody	Surplus 25 lines of N10,000,000.00	250,000,000.00	260,000,000
Cash in Counting Area	Surplus 25 lines of N10,000,000.0	250,000,000.00	260,000,000
<b>GOODS-IN-TRANSIT</b>			
General Goods	Surplus 50 lines of N10,000,000.00	500,000,000	510,000,000
Own Goods	Surplus 50 lines of N10,000,000.00	500,000,000	510,000,000
<b>ALL RISKS</b>			
	Surplus 50 lines of N10,000,000.00	500,000,000	510,000,000
<b>FIDELITY GUARANTEE</b>			
Per Person	Surplus 25 lines of N7,500,000.00	187,500,000	195,000,000
Per Firm	Surplus 25 lines of N10,000,000.00	250,000,000	260,000,000
<b>PERSONAL ACCIDENT</b>			
Per Person	Surplus 50 lines of N15,000,000.00	750,000,000	765,000,000
Per known accumulation	Surplus 50 lines of N20,000,000.00	1,000,000,000	1,020,000,000
<b>OCCUPIER'S LIABILITY</b>			
Bodily Injury/Death	Surplus 50 lines of N7,000,000.00	350,000,000	357,000,000
Property Damage	Surplus 50 lines of N7,000,000.00	350,000,000	357,000,000
Public Liability	Surplus 50 lines of N7,000,000.00	350,000,000	357,000,000
Director's Liability	Surplus 100 lines of N7,500,000.00	750,000,000	757,500,000
Professional Indemnity	Surplus 50 lines of N20,000,000.00	1,000,000,000	1,020,000,000
Product Liability	Surplus 50 lines of N20,000,000.00	1,000,000,000	1,020,000,000
Employers' Liability	Surplus 50 Lines of N20,000,000.00	1,000,000,000	1,020,000,000
<b>BOND</b>			
Performance, Bid/Tender, Maintenance Bonds, Customs Bond, Excise Bonds, Court Bonds, Advance Payment, Supply Bond	Reinsurers - 50% Retention - 50% Reinsured's	200,000,000 per contract	200,000,000 per contract
<b>Agric Insurance</b>			
<b>Crop Insurance</b>	Reinsurers - 80% Retention - 20% Reinsured's	N20,000,000.00 Per Contract	N20,000,000.00 Per Contract
<b>Area Yield Index Based</b>	Reinsurers - 80% Retention - 20% Reinsured's	N50,000,000.00 Per Contract	N50,000,000.00 Per Contract
<b>Livestock Insurance</b>	Reinsurers - 80% Retention - 20% Reinsured's	N10,000,000.00 Per Contract	N10,000,000.00 Per Contract
<b>Power Risks Ins</b>	Capacity Per Power Plant Location	Deductible	
<b>Power Risk Stand Alone</b>	\$102,500,000.00	\$134,000.00	
<b>Political Violence and Terrorism</b>	Capacity Per Contract	Deductible	Aggregate Limit
	\$1,32,000,000.00	\$134,000.00	\$1,250,000,000.00
<b>Oil and Gas</b>			
<b>Facility By Gallagher Re</b>	Deductible		Capacity
	Operational Risks	\$134,000.00	\$636,500,000.00
	Construction Risk	\$67,460.68	
<b>Facility By Howden Specialty</b>	Operational Risks	\$134,000.00	\$318,250,000.00
	Construction Risk	\$67,460.68	

## APPENDIX 3 - PROJECTION ASSUMPTIONS

### a. Commission Rates

CURRENT AND EXPECTED COMMISSION RATE			
Class	Brokers	Agents	Direct
Fire	20.00%	10.00%	20.00%
Motor	12.50%	6.25%	12.50%
General Accident	20.00%	10.00%	20.00%
Marine and Aviation	20.00%	10.00%	10.00%
Oil & Gas	20.00%	0.00%	20.00%

### b. Reinsurance Commission

	Fire	Motor	General Accident	Marine and Aviation	Oil & Gas
Commission Income	32%	46%	20%	30%	3%

## APPENDIX 4 - COMBINED RATIO TABLE

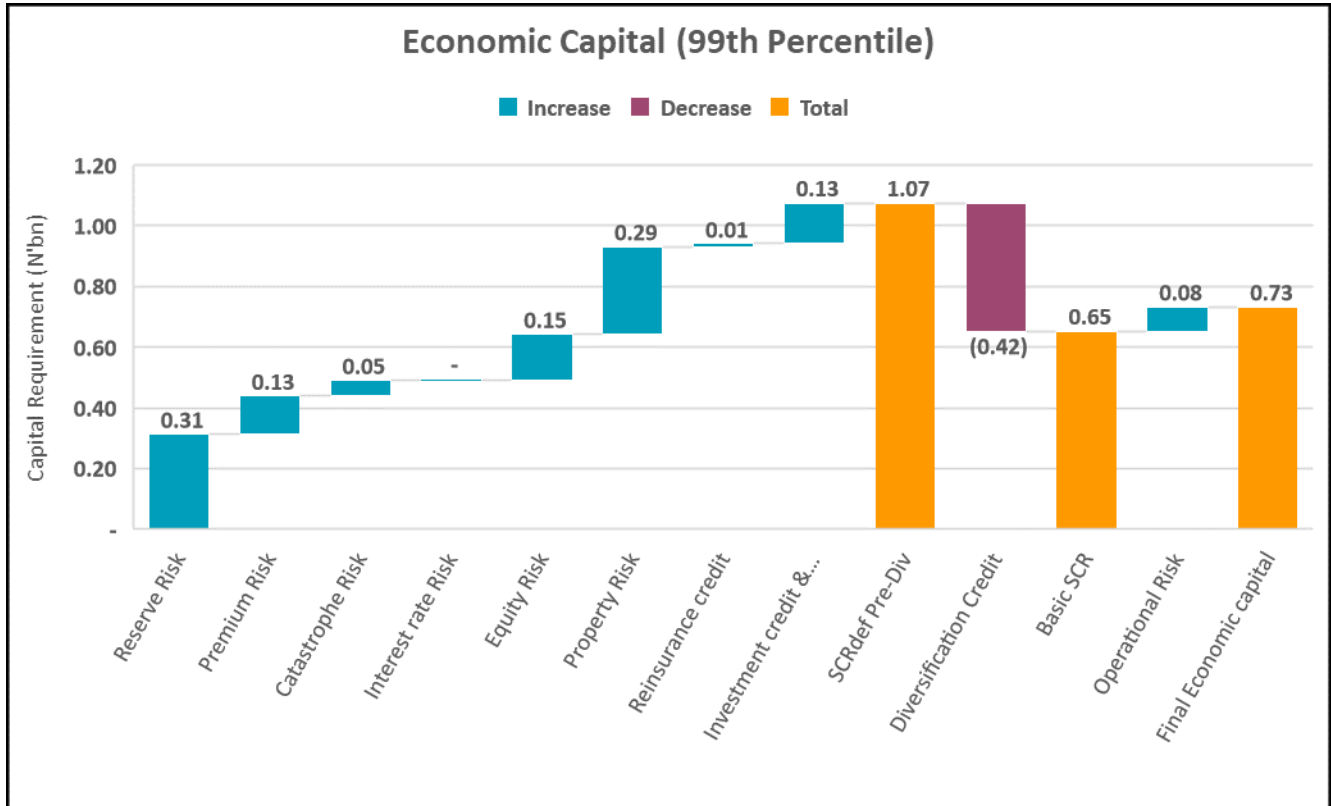
	Year	Fire	Motor	General Accident	Marine and Aviation	Oil & Energy	Total
Gross Written Premiums	2019	255,715	455,303	517,454	62,666		1,291,138
	2020	271,780	295,374	463,221	51,133	0	1,081,508
	2021	287,871	326,691	667,413	74,433	0	1,356,408
	2022	249,817	352,120	659,918	97,392	0	1,359,247
	2023	503,906	444,439	1,097,287	84,349	216,259	2,346,240
Reinsurance Cost	2019	(86,322)	(26,668)	(147,859)	(12,769)	0	(273,618)
	2020	(106,244)	(13,400)	(187,142)	(11,197)	0	(317,983)
	2021	(86,008)	(14,487)	(344,135)	(16,586)	0	(461,215)
	2022	(127,936)	(19,424)	(262,979)	(39,652)	0	(449,991)
	2023	(167,277)	(67,287)	(240,219)	(21,222)	(122,041)	(618,046)
Gross Earned Premium	2019	226,896	399,641	491,778	57,780	0	1,176,095
	2020	241,931	297,113	464,778	48,115	0	1,051,937
	2021	295,799	346,917	628,172	69,945	0	1,340,833
	2022	277,331	338,560	688,586	89,491	0	1,393,968
	2023	510,617	410,808	886,371	82,063	156,890	2,046,748
Net Earned Premium	2019	140,574	372,973	343,919	45,011		902,477
	2020	135,687	283,713	277,636	36,918	0	733,954
	2021	209,792	332,430	284,037	53,359	0	879,618
	2022	149,395	319,137	425,607	49,839	0	943,978
	2023	336,954	354,768	644,346	62,510	66,569	1,465,147
Incurred Claims (Gross)	2019	(122,130)	(60,929)	(95,991)	12,344	0	(266,706)
	2020	(58,537)	(59,642)	(179,158)	(2,735)	0	
	2021	(65,098)	(51,605)	17,087	(28,077)	0	(127,695)
	2022	(28,276)	(67,741)	(77,396)	(42,339)	0	(215,752)
	2023	(68,962)	(93,736)	(288,432)	1,923	(56,921)	(506,129)
Incurred Claims (Net)	2019	(108,068)	(49,630)	(107,980)	10,689	0	(254,989)
	2020	(24,082)	(29,623)	(99,296)	(2,212)	0	(155,213)
	2021	73,770	(43,344)	(49,838)	(28,800)	0	(48,211)
	2022	(310)	(46,609)	(49,936)	(23,510)	0	(120,365)
	2023	(62,752)	(32,772)	(239,133)	9,569	(20,731)	(345,819)
Commission Received	2019	28,087	4,127	35,219	3,527	0	70,960
	2020	33,981	2,345	40,883	3,275	0	80,484
	2021	19,834	19,820	27,475	4,261	0	71,390
	2022	51,397	3,146	70,599	13,876	0	139,018
	2023	55,293	10,489	75,640	7,518	9,982	158,923
Underwriting expenses	2019	(70,310)	(68,068)	(129,799)	(16,361)	0	(284,538)
	2020	(76,958)	(58,393)	(131,858)	(17,917)	0	(285,126)
	2021	(73,472)	(35,282)	(208,748)	(34,892)	0	(352,394)
	2022	(61,944)	(13,163)	(238,807)	(65,891)	0	(379,805)
	2023	(164,849)	(11,985)	(359,338)	(42,894)	(31,602)	(610,668)
Management expenses	2019	0%	0%	0%	0%	0%	(868,613)
	2020	0%	0%	0%	0%	0%	(736,287)
	2021	0%	0%	0%	0%	0%	(766,355)
	2022	0%	0%	0%	0%	0%	(862,801)
	2023	0%	0%	0%	0%	0%	(934,698)
Claims Ratio (Net)	2019	77%	13%	31%	-24%	0%	28%
	2020	18%	10%	36%	6%	0%	21%
	2021	-35%	13%	18%	54%	0%	5%
	2022	0%	15%	12%	47%	0%	13%
	2023	19%	9%	37%	-15%	31%	24%
Expense Ratio	2019	0%	0%	0%	0%	0%	106%
	2020	0%	0%	0%	0%	0%	123%
	2021	0%	0%	0%	0%	0%	117%
	2022	0%	0%	0%	0%	0%	121%
	2023	0%	0%	0%	0%	0%	80%
Combined Ratio	2019	77%	13%	31%	-24%	0%	135%
	2020	18%	10%	36%	6%	0%	144%
	2021	-35%	13%	18%	54%	0%	122%
	2022	0%	15%	12%	47%	0%	134%
	2023	19%	9%	37%	-15%	0%	104%



## APPENDIX 5: ECONOMIC CAPITAL RESULTS AT 99% CONFIDENCE LEVEL

Should the confidence level be lowered our confidence level to 99%, the total economic capital requirement reduces to N729.73 million which represents about 21% of the shareholder funds as at December 31, 2023.

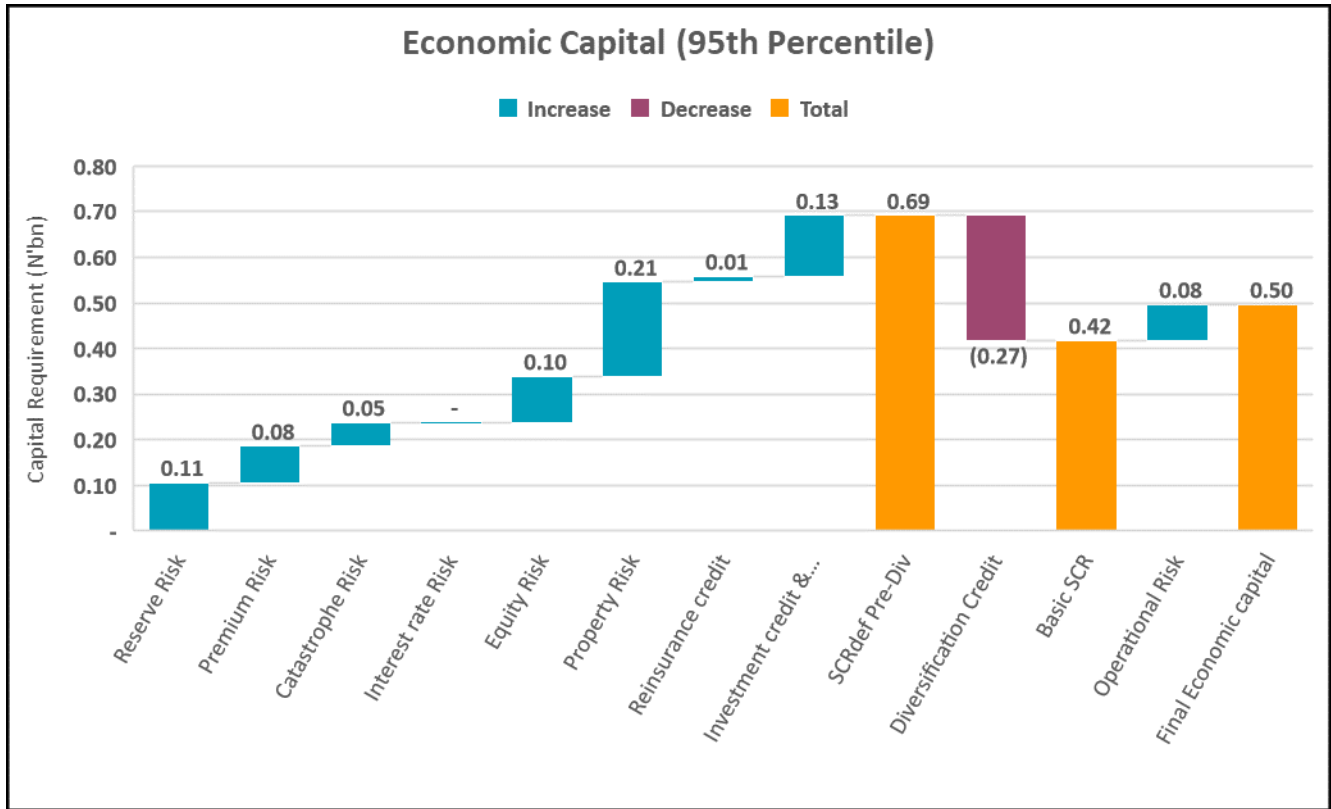
Risk Type		Capital Requirement (N)
Non-Life Underwriting Risk	Reserve Risk	313,309,008
	Premium Risk	126,785,656
	Catastrophe Risk	51,212,961
	Lapse Risk	-
	SCR <sub>nl</sub> Pre-Div	491,307,625
	SCR <sub>nl</sub> Div Credit	125,484,601
	<b>SCR<sub>nl</sub> Post Div</b>	<b>365,823,024</b>
Market Risk	Interest Rate Risk	-
	Equity Risk	150,210,614
	Property Risk	286,873,395
	Spread Risk	-
	Currency Risk	-
	Concentration Risk	-
	<b>SCR<sub>mkt</sub> Post Div</b>	<b>355,535,213</b>
Counterparty Default Risk	Reinsurance credit	9,590,455
	Investment credit & Debtors	134,013,949
	SCR <sub>def</sub> Pre-Div	143,604,404
	SCR <sub>def</sub> Div Credit	-
	<b>SCR<sub>def</sub> Post Div</b>	<b>143,604,404</b>
Undiversified BSCR	864,962,641	
Diversification Credit	213,850,140	
Basic Economic Capital	651,112,502	
Operational Risk	78,619,750	
<b>Final Economic Capital</b>	<b>729,732,252</b>	
<b>Shareholders' Funds</b>	<b>3,495,473,969</b>	
<b>% of Economic Capital</b>	<b>479%</b>	



## APPENDIX 6: ECONOMIC CAPITAL RESULTS AT 95% CONFIDENCE LEVEL

Should the confidence level be lowered our confidence level to 95%, the total economic capital requirement reduces to N494.16 million which represents about 14% of the shareholder funds as at December 31, 2023.

Risk Type		Capital Requirement (N)
Non-Life Underwriting Risk	Reserve Risk	106,174,487
	Premium Risk	79,580,310
	Catastrophe Risk	51,212,961
	Lapse Risk	-
	SCR <sub>nl</sub> Pre-Div	236,967,757
	SCR <sub>nl</sub> Div Credit	75,290,909
	<b>SCR<sub>nl</sub> Post Div</b>	<b>161,676,848</b>
Market Risk	Interest Rate Risk	-
	Equity Risk	100,696,382
	Property Risk	208,394,167
	Spread Risk	-
	Currency Risk	-
	Concentration Risk	-
	<b>SCR<sub>mkt</sub> Post Div</b>	<b>253,101,086</b>
Counterparty Default Risk	Reinsurance credit	9,590,455
	Investment credit & Debtors	134,013,949
	SCR <sub>def</sub> Pre-Div	143,604,404
	SCR <sub>def</sub> Div Credit	-
	<b>SCR<sub>def</sub> Post Div</b>	<b>143,604,404</b>
Undiversified BSCR		558,382,338
Diversification Credit		142,843,166
Basic Economic Capital		415,539,172
Operational Risk		78,619,750
<b>Final Economic Capital</b>		<b>494,158,922</b>
<b>Shareholders' Funds</b>		<b>3,495,473,969</b>
<b>% of Economic Capital</b>		<b>707%</b>



## Appendix 7: Economic Capital Methodology & Stress Level Derivation.

We present below, detailed explanation on how each of the risk were modelled including stress levels derivation.

### A. MARKET RISKS

- 1.1 Market risk is defined as the potential for adverse change in the net assets (Market Value of assets less Market Value of liabilities) due to movements in market factors such as equity prices, interest rates, property prices and foreign exchange.
- 1.2 The company's insurance funds are mainly invested in money market instrument and hence have a very low exposure to market risks.
- 1.3 The market risk capital requirement  $C_{Mkt}$  for each risk was calculated using the following formula:

$$C_{Mkt} = (A_{Mkt} - A_0)$$

Where  $C_{Mkt}$  - capital calculation for market risk

$A_{Mkt}$  - stressed assets value

$A_0$  - base market value of assets

- 1.4 The stresses applied for the market risk module were as follows:

Asset class	Stress level @ 95%	Stress level @ 99%	Stress level @ 99.5%
Equity	24.06%	35.90%	37.38%
Property	15.72%	21.6400%	22.38%
Interest rate	29.1%	40.12%	41.5%

- 1.5 The above stresses were obtained by using a combination of fitting historical data of various market indices (were available) to find the appropriate stress level and benchmarking against the Solvency II widely used stress levels.
- 1.6 The details of the derivation and computation are contained below for each sub-risk module.

## 1.7 Equity risk

- I. This is the sensitivity of assets, liabilities and financial investments to fluctuations in the level or volatility of the market prices for equities.
- II. The company is invested in both quoted and unquoted equities. Both types of equities were stress tested.
- III. The level of stress was derived by considering the historical distribution of the total return Nigerian Stock Exchange ("NSE") index and fitting a distribution to determine the stress level at the various confidence levels.
- IV. We fitted the NSE historical index values from January 1985 to December 2020. The normal distribution was a good fit for the data. Using the normal distribution, we determined stress levels of 29%, 40% and 41% for confidence levels of 95%, 99% and 99.5% respectively.
- V. We also checked how frequently historical annual returns have fallen or been close to the 29.1%, 40.12% and 41.5% levels. In 2008, the stock index fell by about 46% and in 2011 also fell by about 23%.
- VI. Both the quoted and unquoted equities were assumed to be similarly affected by any declines in stock market. This assumption would need to be revisited in the next assessment.

## 1.8 Interest Rate risk

- I. Interest rate risk is caused by the sensitivity of the value of any assets, liabilities and financial investments to fluctuations in the term structure of interest rates or interest rate volatility, whether valued by mark-to-model or mark-to-market techniques.
- II. Stresses were determined by constructing the term structure of interest rates by referencing the 12-month, 3-year, 5 year, 7 year, 10 year and 20 year yields from the Federal Government Bonds.
- III. The historical returns were fitted to distributions to determine the best fit distribution. The normal distribution was a good fit. The normal distribution was used instead in order to apply some consistency with the other market risk stresses.
- IV. As the local term structure of interest rates show a flat yield curve; a flat stress level was applied to bonds of varying durations.
- V. The stresses used are shown in table 3 above at various confidence levels to all bond yields of varying duration according to the Company bond holdings.
- VI. The stressed yields were applied using the formula: current yield x (1+Upward stress) OR

current yield x (1+Downward stress).

- VII. The capital requirement was then determined by adopting the stress level (between the upward and the downward stress) that resulted in a higher capital requirement i.e. Interest Rate capital requirement = Max {0; Upward stress capital; Downward stress capital}

- 1.9 The overall market risk capital was then derived by combining the equity, property and interest rate risk capital using the suggested correlation matrix below.

$$C_{Mkt} = \sqrt{\sum CorrMkt_{ij} * C_{Mkt_i} * C_{Mkt_j}}$$

Where  $C_{Mkt}$  - overall market risk capital calculation including equity, property and interest rate

$C_{Mkt_i}$  - capital for i-th risk (i could be any of the three risks)

$C_{Mkt_j}$  - capital for j-th risk (j could be any of the three risks)

- 1.10 The correlation matrix used is shown in Appendix 7

### 1.11 Non-Life Insurance risks

The non-life insurance risks modelled were:

- ▶ Reserving risk
- ▶ Premium risk
- ▶ Catastrophe risk

#### I. Reserving risk

This is one of the sources of underwriting risk for general insurance.

Reserve risk results from fluctuations in the timing and amount of claim settlements.

The reserve risk methodology was as follows:

- ▶ We used the bootstrap approach to calculate the mean and standard deviation of losses.
- ▶ We then used the mean and standard deviation to derive the parameters of the lognormal distribution which was used to estimate the 95th, 99th and 99.5th percentiles of the reserve distribution.
- ▶ Reserve capital is the difference between each of the following percentiles; 95th-percentile, 99th-percentile or 99.5th-percentile of the distribution and the 50th -percentile (Best estimate).

## II. Premium risk

This is another source of underwriting risk for general insurance.

Premium risk results from fluctuations in the timing, frequency and severity of insured events. It relates to the unexpired risks on existing contracts. Premium risk includes the risk that premium provisions turn out to be insufficient to compensate claims or need to be increased.

The premium risk methodology was as follows:

- ▶ Average loss ratios were derived from the expected loss ratio in the business plan (pricing)
- ▶ Historical loss ratios were investigated and deviations from the mean studied.
- ▶ The lognormal distribution was fit (which was the best fit) to the deviations

## III. Catastrophe risk

This is Catastrophe for the general insurance business.

It covers mainly high severity and low frequency catastrophic events e.g. floods, hurricanes, large accidents impacting on all general insurance lines of business insured by the Company.

There have been no major catastrophic events in Nigeria recently hence the data to use in determining the risk capital was scarce.

The catastrophe risk methodology was therefore as follows:

- ▶ The 2023 loss ratios were increased by 1000% for all lines of business to resemble a catastrophic-like event
- ▶ A 1% probability of occurrence was applied to determine the final capital requirement.

## B. CREDIT RISK

- I. Credit risk arises as a result of the unexpected default, or deterioration in credit standing, of an insurer's counterparties or debtors.
- II. The scope of the calculation under this risk module covered possible defaults by banks; where cash and cash equivalents are held by the Company, defaults by reinsurers compromising reinsurance recoveries and the inability by debtors to pay their dues.
- III. The following exposures to counterparties were used:
  - ▶ Banks → cash and cash equivalent holdings
  - ▶ Reinsurers → estimated reinsurance recoveries over the next 12 months



- ▶ Debtor → amounts owed.

IV. The expected losses given default were calculated using the latest credit ratings and associated probabilities of default for the different counterparties. A combination of local agencies and the S&P default rates were used for the bank holdings as per the following table:

Table 5

Rating Scale	Default Probability
AAA	0.00%
AA+	0.00%
AA	0.02%
AA-	0.03%
A+	0.05%
A	0.05%
A-	0.06%
BBB+	0.09%
BBB	0.15%
BBB-	0.24%
BB+	0.32%
BB	0.48%
BB-	0.96%
B+	1.98%
B	3.13%
B-	6.52%
Unrated	26.53%

- V. The above default rates were applied to both the banks and reinsurers' counterparties to the Company.
- VI. The formula used was: Estimated exposure x Probability of Default x Loss Given Default.
- VII. We assumed a 100% loss given default, which is a conservative assumption.

## C. OPERATIONAL RISK

- I. This is the risk of loss arising from inadequate or failed internal processes, or from personnel and systems, or from external events.
- II. Operational risk is generally a material risk and one of the major causes of organizational failure.
- III. There are several approaches used to assess Operational risk namely;
  - ▶ Basic indicators or some Standard Formula - this is a simpler approach and largely defined by regulatory bodies. It is transparent and a well-known approach.
  - ▶ Scenario approach - qualitative scenario assessments of the operational risks as defined by management through the risk heat map are transformed into quantitative assessments to determine the overall operational risk capital
  - ▶ Statistical or Loss Distribution Approach - this uses a lot of statistics. The amount of possible losses and frequency of losses are modelled separately and then combined to determine the overall capital requirement. This approach relies on the availability of credible historical and forward-looking data.
  - ▶ The Structural or Causal approach - this is the most complex and recently researched approach. It also relies on understanding the interdependencies across risks in addition to the data availability.
- IV. We adopted the standard formula approach due to limited quantity of data available. The approach took into account the earned premium, technical provisions and Base capital calculated before operational risk.
- V. The formula used to compute the capital requirement was as follows:

$$C_{op} = \text{Min} \{0.3 * BSCR, BOp\} + 0.25 \times Exp_{nl}$$

$Exp_{nl}$  is the amount of annual expenses incurred during the previous 12 months in respect of non-linked business

$BSCR$  is the preliminary capital required before allowing operational risk and, for the risk requirements it is defined as:

$$CR_{Op} = \sum(C_{ins} + C_{Mkt} + C_{Credit})$$

$BOp$  is the basic operational risk requirement for all business and is determined as follows:

$$BOp = \text{Max} \{Op_{premiums}; Op_{provisions}\}$$

Where

$$Op_{premiums} = 0.03 \times Earn_{nl} + \text{Max} \{0, 0.03 \times [Earn_{nl} - 1.1 \times pEarn_{nl}]\}$$

$$\text{and } Op_{provisions} = 0.03 \times \text{Max} \{0, Tp_{nl}\}$$

$Earn_{nl}$  are the gross premiums earned during the previous 12 months.

$pEarn_{nt}$  are the gross premiums earned during the 12 months prior to the previous 12 months.

$TP_{nt}$  are the technical provisions

VI. In the future, we recommend the following be recorded at granular level:

- ▶ Frequency of occurrence of all risk scenarios captured in the Risk Heat Map
- ▶ Identification of new exposures and new likelihood percentages after mitigation efforts have been applied.

This would improve how operational risk is quantified.

## APPENDIX 8 - CORRELATION MATRICES

Correlations for Market risks have been derived using actuarial judgement and referencing correlations being used in other jurisdictions for new solvency regimes.

Local market relevance was taken into account before applying these correlations.

As a rule of thumb, the following thought process was applied:

Correlation coefficient	Interpretation
0%	Independent
25%	Weakly correlated
50%	Moderately correlated
75%	Strongly correlated
100%	Dependent

The correlation matrices used for diversification are shown below.

### Market risk correlations

		Parameters					
Corr <sub>ij</sub>	Mkt <sub>int</sub>	Mkt <sub>eq</sub>	Mkt <sub>prop</sub>	Mkt <sub>sp</sub>	Mkt <sub>conc</sub>	Mkt <sub>fx</sub>	
Mkt <sub>int</sub>	100%	0%	0%	0%	0%	25%	
Mkt <sub>eq</sub>	0%	100%	25%	75%	0%	25%	
Mkt <sub>prop</sub>	0%	25%	100%	50%	0%	25%	
Mkt <sub>sp</sub>	0%	75%	50%	100%	0%	25%	
Mkt <sub>conc</sub>	0%	0%	0%	0%	100%	0%	
Mkt <sub>fx</sub>	25%	25%	25%	25%	0%	100%	

### Comments:

- ▶ Equity vs Property - the local stock and property markets have seen low correlations.
- ▶ The drop in equity values seem not to affect the property values, hence a weak correlation assumption.
- ▶ Interest rate vs Equity/Property - no correlation was assumed if under the interest rate stress an increase in interest rates triggered a capital requirement (as opposed to a decrease in interest rates). 50% correlation was assumed if the decrease in interest rates would trigger a capital requirement under the interest rate stress.
- ▶ Spread, concentration and foreign exchange risks were not modelled.

## EY | Assurance | Tax | Transactions | Advisory

### About EY

EY is a global leader in assurance, tax, transaction and advisory services. The insights and quality services we deliver help build trust and confidence in the capital markets and in economies the world over. We develop outstanding leaders who team to deliver on our promises to all of our stakeholders. In so doing, we play a critical role in building a better working world for our people, for our clients and for our communities.

© 2020 EYGM Limited.

All Rights Reserved.

EY refers to the global organization and/or one or more of the member firms of Ernst & Young Global Limited, each of which is a separate legal entity. Ernst & Young Global Limited, a UK company limited by guarantee, does not provide services to clients. For more information about our organization, please visit [ey.com](http://ey.com).