

12 September 2024

## **Insurance Authority's Review of Actuarial Reports on Reinsurance, Investment & Solvency for Year 2023**

The year 2023 was the fourth consecutive year of insurance companies submitting actuarial reports under the Actuarial Work Rules (AWR) issued in March 2020. The primary objective of those Rules is to enhance the role and responsibilities of actuaries in the insurance sector in order to facilitate informed decision-making by management and to provide greater technical support to the business as the market sophistication continues to grow in the Kingdom.

Under the above Rules, an Appointed Actuary is obligated to perform a number of actuarial analyses, at least, annually, and convey to the Senior Management, Board of Directors and the Insurance Authority (IA) the outcome of those analyses in the form of an actuarial report, prepared separately on each individual topic

This document encompasses IA's observations from its review of the following actuarial reports:

1. Reinsurance Adequacy Report 2023 (pages 2-12)
2. Investment and Asset Liability Management Report 2023 (pages 12-17)
3. Solvency and Capital Report (pages 17-19)

A number of important observations emerged from our review. We would like to share those observations with the Company's management, together with our expectations in respect of those observations, in anticipation that management will consider each of those observations and recommendations diligently, internal discussions will be held at the Board of Directors' level and with all relevant functions, and appropriate actions will be taken by management.

Furthermore, similar to last year, a separate brief document accompanies this letter that summarizes IA's expectations on each topic mentioned in this letter.

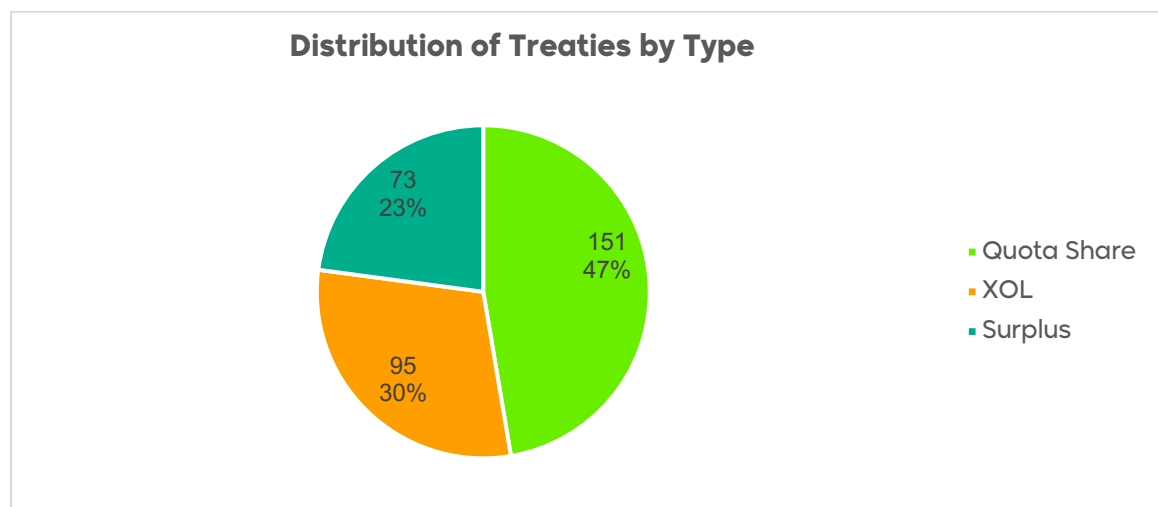
## 1. Reinsurance Adequacy Report 2023

For Property & Casualty insurance, the majority of insurers in Saudi Arabia rely heavily on reinsurance companies as a large proportion of business is ceded to them. It is therefore important that each insurance company assesses its reinsurance requirements using sound technical basis, and with due regard to its risk appetite.

The Actuarial Work Rules 2020 require an annual report from the Appointed Actuary, assessing the appropriateness of the Company's reinsurance arrangements and risk retention levels for each line of business. The Appointed Actuary is also required to make recommendations for an optimal reinsurance arrangement to the Board of Directors and Senior Management. The task requires application of sophisticated actuarial modelling techniques and is commensurate with IA's objective to raise the standards of actuarial practice in the Kingdom.

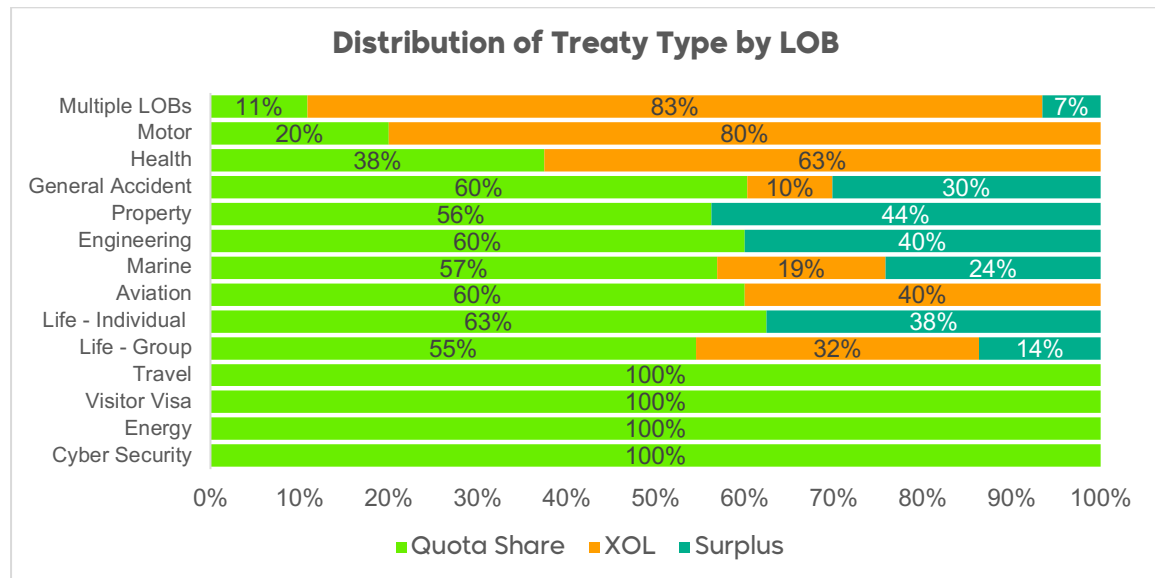
### 1.1 Treaty-Type Composition

The graph below shows the current distribution of treaties purchased by insurance companies into Quota Share, Surplus, and Excess of Loss.



It can be seen that proportional treaties, particularly Quota-Share, dominate the market, comprising approximately 70% of all treaties.

The graph below shows the distribution of existing treaties by type and by line of business.



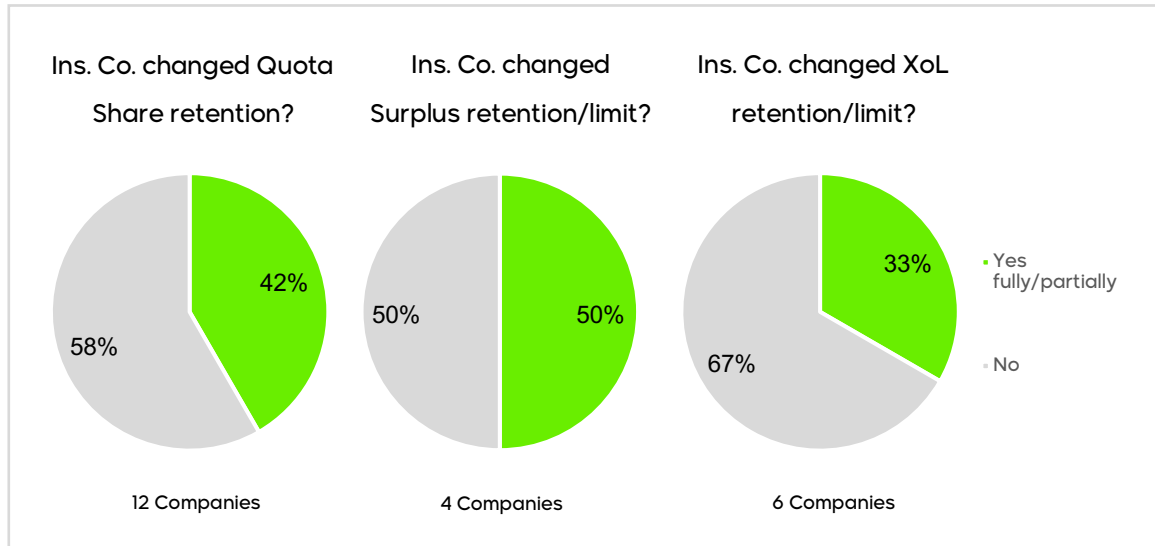
For Motor and Health, while majority of the treaties are of Excess of Loss, there remains a considerable percentage of companies using proportional structures, in particular of Quota share type, which may seem somewhat strange given the high frequency and low severity nature of these LOBs and the wealth of historical data available to insurance companies. It is also noted that some of these proportional arrangements could be driven by capital relief considerations for smaller companies.

For P&C lines, it can be seen that proportional arrangements, in particular of Quota Share type, dominate the treaties purchased by insurance companies, indicating less underwriting sophistication and low risk tolerance among insurance companies for these risks.

**The IA expects the Company's management to carefully consider the treaty type most appropriate for its portfolio, and make sure it is aligned with the Company's risk appetite, financial objectives, and market conditions.**

## 1.2 Management’s Response to the Appointed Actuary’s Recommendations from Previous Exercise

The graph below assesses how the Board of Directors responded to the Appointed Actuary’s recommendation for improvements to the reinsurance arrangements made in the previous year’s Reinsurance Optimization Report.

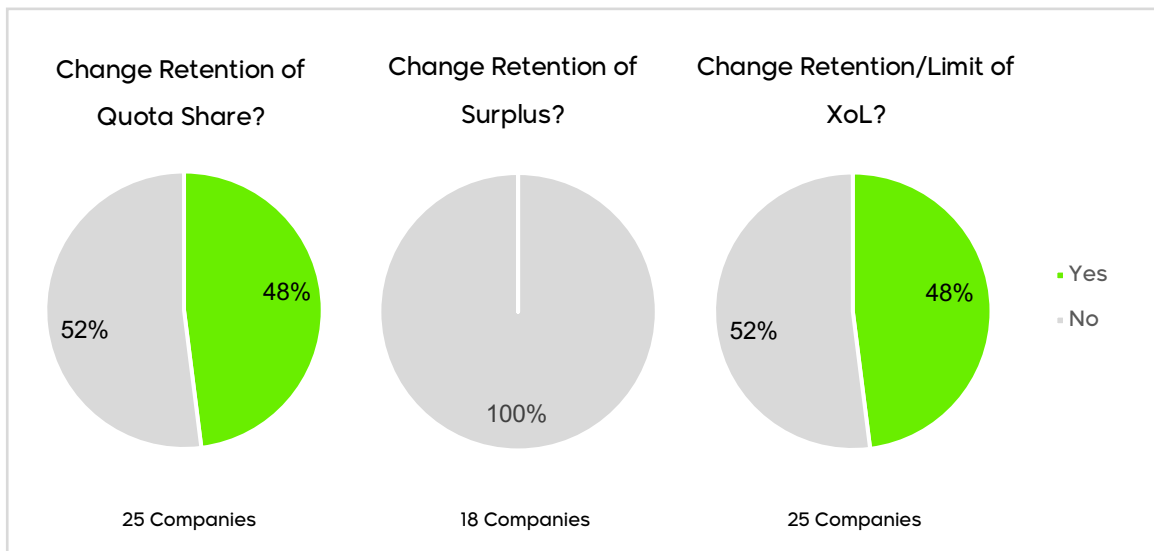


It can be seen that a considerable proportion of Boards accepted the recommendation from their Appointed Actuary to change the structure of their proportional and/or non-proportional treaties and management went ahead with making those changes, in part or in full. The above treaty amendments are of even higher significance considering that an Appointed Actuary usually forms his recommendations without taking into consideration the reinsurance market conditions.

**When making reinsurance purchase decisions, the IA expects the Board of Directors and Senior Management to actively consider the recommendations of their Appointed Actuary, with due input from Underwriting and Reinsurance functions.**

### 1.3 Changes Recommended for Treaties in Reinsurance Optimization Report 2023

The graph below shows the outcome of the actuarial analysis performed in year 2023 and recommendations made by Appointed Actuaries as a result.



Note: In the last year’s DEAR CEO letter, the recommended changes were shown as a proportion of the total number of companies, irrespective of whether they had a specific treaty-type in place. This year, the statistics have been refined to be based on those companies only that have a specific type of treaty in place.

It can be seen that Appointed Actuaries have identified inefficiencies in the current Quota Share and Excess of Loss (XoL) arrangements across a significant number of insurance companies. On the other hand, no recommendations were made for existing Surplus arrangements.

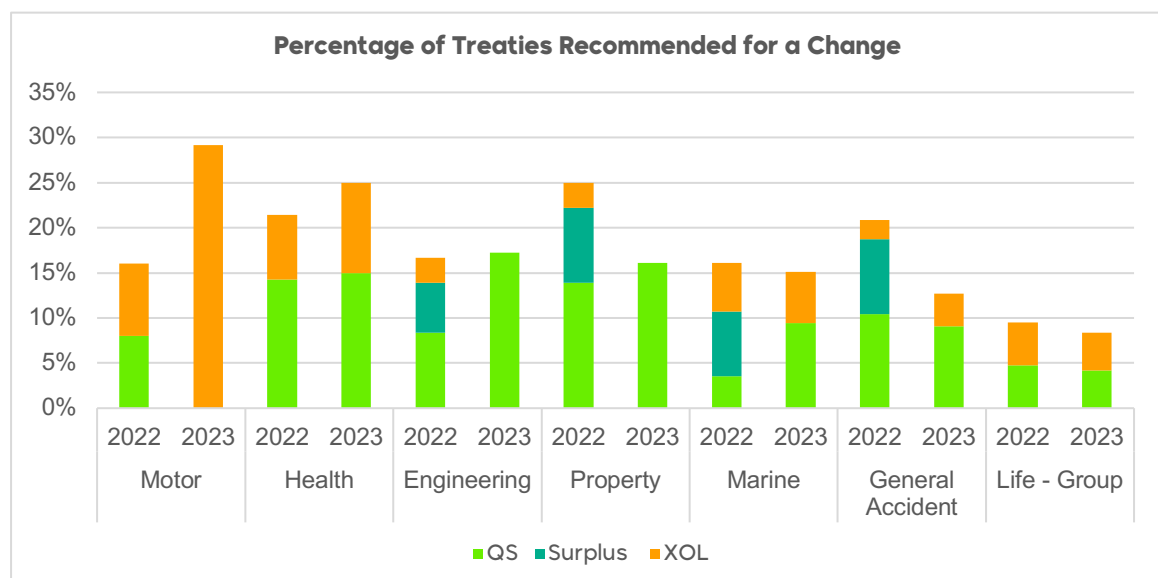
Furthermore, comparing with last year’s recommendations, the above shows that the number of recommendations for changes to Quota Share and XoL arrangements have increased. On one hand, this is somewhat surprising considering that a number of recommendations made last year were already addressed by management. On the other hand, it could be an indicator of

improvements in the sophistication and rigor of actuarial analysis performed by Appointed Actuaries compared to last year. Conversely, we note that recommendations made last year for changing Surplus arrangements and which were not accepted by managements of those insurance companies are notably absent from this year's recommendations, indicating possible updates to actuarial models.

**The IA expects the Board of Directors to seek to fully understand the rationale behind the recommendations of its Appointed Actuary, including impact of any changes to actuarial models and methodologies used, and actively consider those recommendations, with due consideration of the reinsurance market conditions, and the Company's own risk appetite.**

#### 1.4 Percentage of Treaties Recommended for a Change by Line of Business

The graph below shows the LOB-wise distribution of those treaties where a change in the existing structure was recommended by the Appointed Actuary.



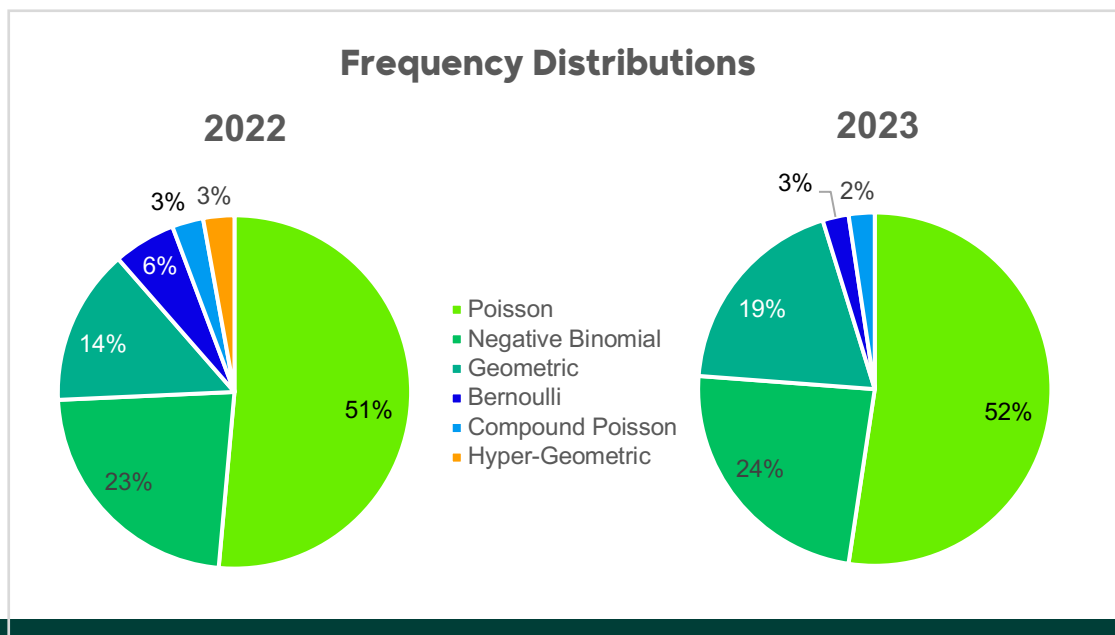
It is evident that in 2023, Motor and Health have the highest proportion of sub-optimal treaties, as identified by Appointed Actuaries, compared to last year when Property was leading in the proportion of treaties recommended for a change, followed by Health and General Accident. It can also be observed that for Motor and Health portfolios, the percentage of treaties deemed 'sub-optimal' by Appointed Actuaries this year has gone up compared to the prior year.

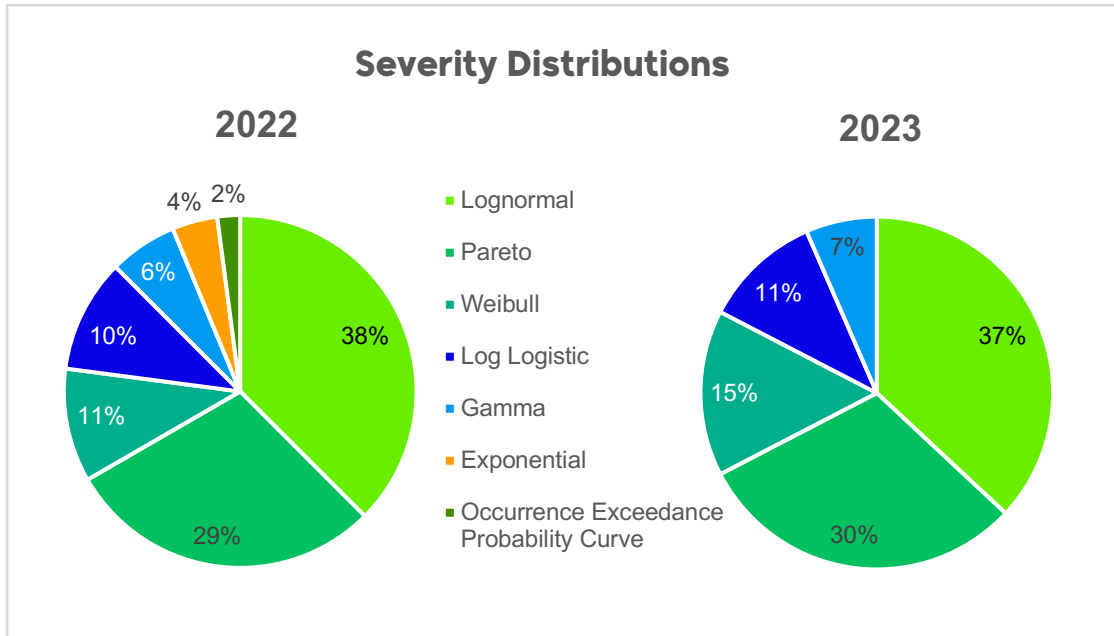
In Motor this year, all treaties deemed sub-optimal were of Excess of Loss in nature. Under other lines of business however, Quota Share agreements formed a greater proportion of the treaty structures that were identified as needing improvements.

**The IA expects management to consider the optimal treaty structure for each line of business individually so that any decision around purchasing a bouquet of-treaties can be taken from an informed position.**

### 1.5 Distribution of Frequency and Severity

The IA continues to encourage Appointed Actuaries to enhance the sophistication of modelling techniques when performing the reinsurance optimization analysis. The graph below shows the range of statistical distributions used by Appointed Actuaries for modelling the frequency and severity of claims, along with their comparison with approaches used last year.





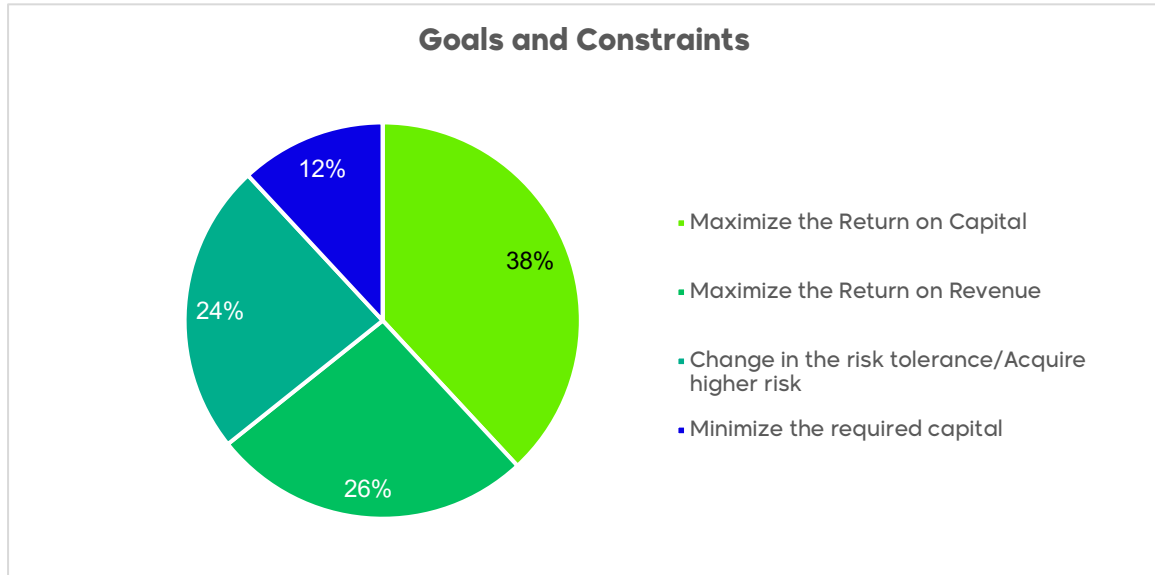
For Frequency modelling, Poisson was the most commonly used distribution, followed by Negative Binomial and Geometric distributions. For Severity modelling, Lognormal was the distribution of choice for many, followed by Pareto distribution.

Compared to last year, we observed an increase in the use of Geometric distribution for frequency projections, and an increase in the use of Weibull distribution for severity projections.

**The IA expects each Appointed Actuary to remain abreast of the latest professional developments in the area of reinsurance optimization and continue to explore and implement more sophisticated modelling techniques.**

## 1.6 Goals and Constraints

In order to perform the actuarial analysis for treaty optimization, it is important for the Board of Directors and Senior Management to set a clear goal for the Appointed Actuary. The graph below shows the distribution of goals and constraints used by Appointed Actuaries to guide their analysis.



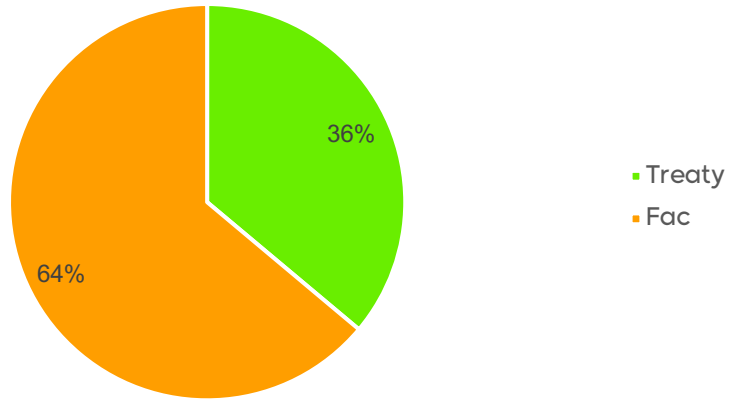
Similar to the last year's submissions, it can be observed that the majority of Appointed Actuaries aimed to maximize the return on capital, followed by the return on revenue and revised risk appetite of insurance companies, as the goal for their reinsurance optimization analysis.

**The IA expects the Board of Directors and Senior Management to set clear goals for the Appointed Actuary so that the output generated is in line with the expectations and business requirements of management.**

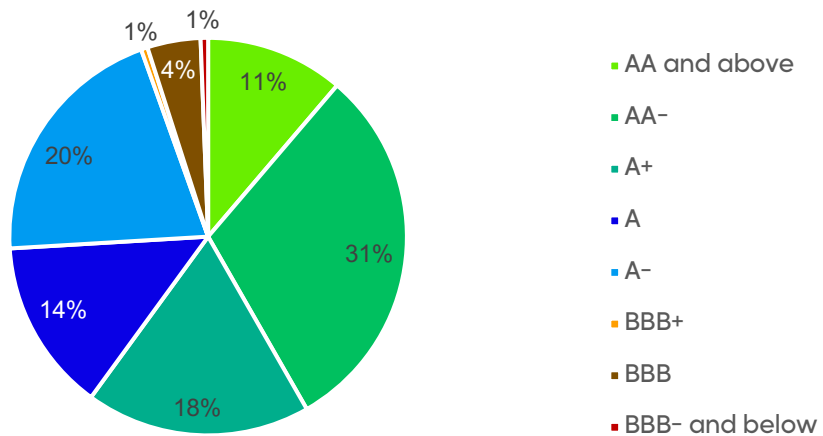
### 1.7 Reinsurers' Credit Rating – Treaty & Facultative

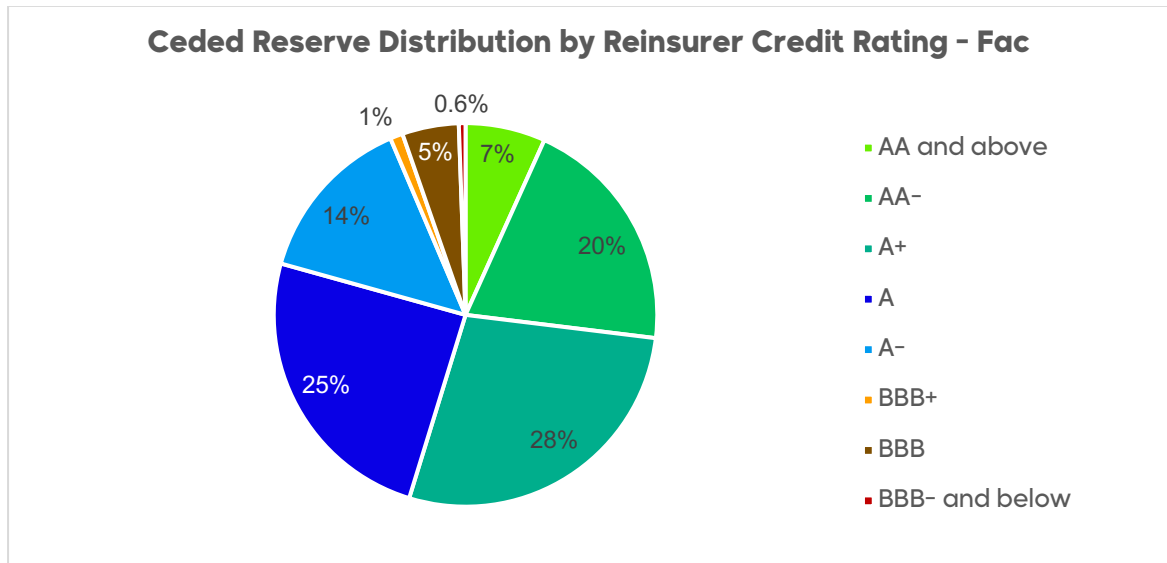
The graphs below show the split of reinsurance reserves between treaty and fac arrangement, and the distribution of reserves under each arrangement-type by the credit rating of those reinsurers. The credit ratings shown follow the S&P rating scale.

### Ceded Reserves by Reinsurance Arrangement Type



### Ceded Reserve Distribution by Reinsurer Credit Rating - Treaty





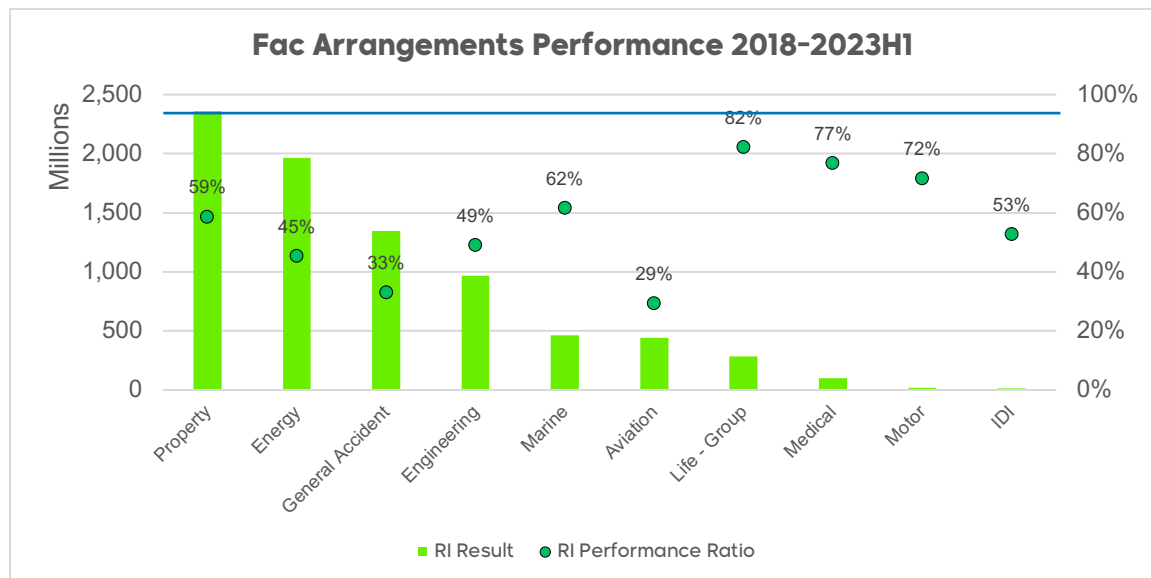
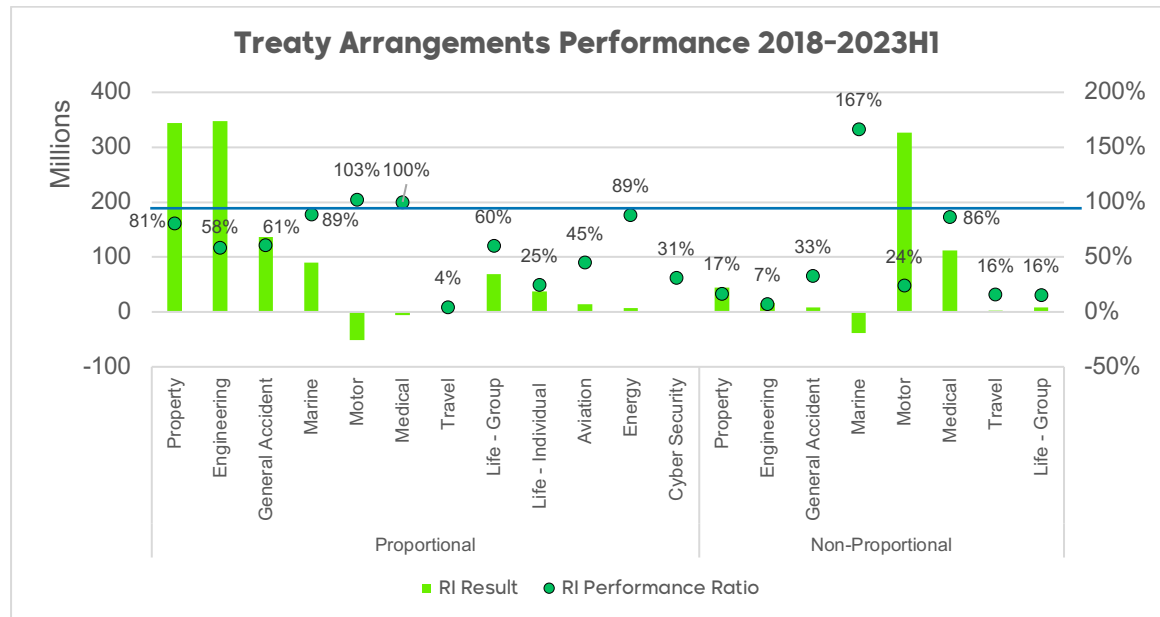
Similar to that noted last year, it can be observed that insurance companies cede the bulk of the reserves (IBNR + Case Reserves) to high-grade reinsurers for both treaty and fac arrangements, thus reducing their default risk. This is an important consideration under IFRS 17 where an insurance company must make allowance for the risk of non-performance by its reinsurer(s) when estimating the reinsurance contract assets.

Between treaty and facultative arrangements, treaty reserves distribution has a higher proportion of 'AA- and above'-rated reinsurers than under facultative arrangements. This can possibly be attributed to the fact that while facultative arrangements provide flexibility to negotiate terms and conditions, higher-rated reinsurers may have more stringent underwriting criteria than lower-rated reinsurers.

**The IA expects the Board of Directors and Senior Management to seek to understand the impact of credit rating of its reinsurers on the reinsurance contract assets under IFRS 17, and ensure that its selection of reinsurers considers the attractiveness of the terms & conditions as well as the financial strength of the reinsurer, while also complying with the relevant IA regulations in this regard.**

## 1.8 Performance of Treaty and Facultative Reinsurance Arrangements

The graph below shows the performance under treaty and facultative arrangements for the period 2018 to 2023H1, as reported by Appointed Actuaries in their Reinsurance Optimization reports.



**Note:**

RI Result = RI Premium Ceded - RI Claims - RI Commission

$$\text{RI Performance Ratio} = (\text{RI Claims} + \text{RI Commission}) / \text{RI Premium Ceded}$$

For treaty arrangements, it can be observed that the positive RI results under the majority of portfolios suggest that significant profits have been ceded to reinsurers over the last five-and one-half years, particularly under Property and Engineering proportional treaties and Motor non-proportional treaties. Between proportional and non-proportional treaty arrangements, reinsurance performance ratios tend to be higher for proportional structures compared to non-proportional structures across most lines of business with the exception of Marine and Travel insurance. Notably, the reinsurance performance ratio reach or exceed 100% for Motor and Health lines under proportional treaties, and for Marine under non-proportional treaties.

For facultative arrangements, the volume of profits ceded to reinsures over the same period far exceeds that observed under treaty arrangements, with reinsurance performance ratio for each line of business staying well below 100%. The profits ceded under Property fac alone exceed the total profits ceded under all treaties combined. In terms of the reinsurance performance ratio, Aviation has the lowest value, whereas Group Life has the highest ratio.

It is worth noting that the above performance summary does not account for the savings in capital that insurance companies achieved due to those reinsurance arrangements.

**The IA expects management to put in place robust processes for providing underwriting, risk and actuarial support in aid to the reinsurance purchase decisions, thus ensuring that placement of risks under treaty and facultative arrangements is done at optimal terms for the Company.**

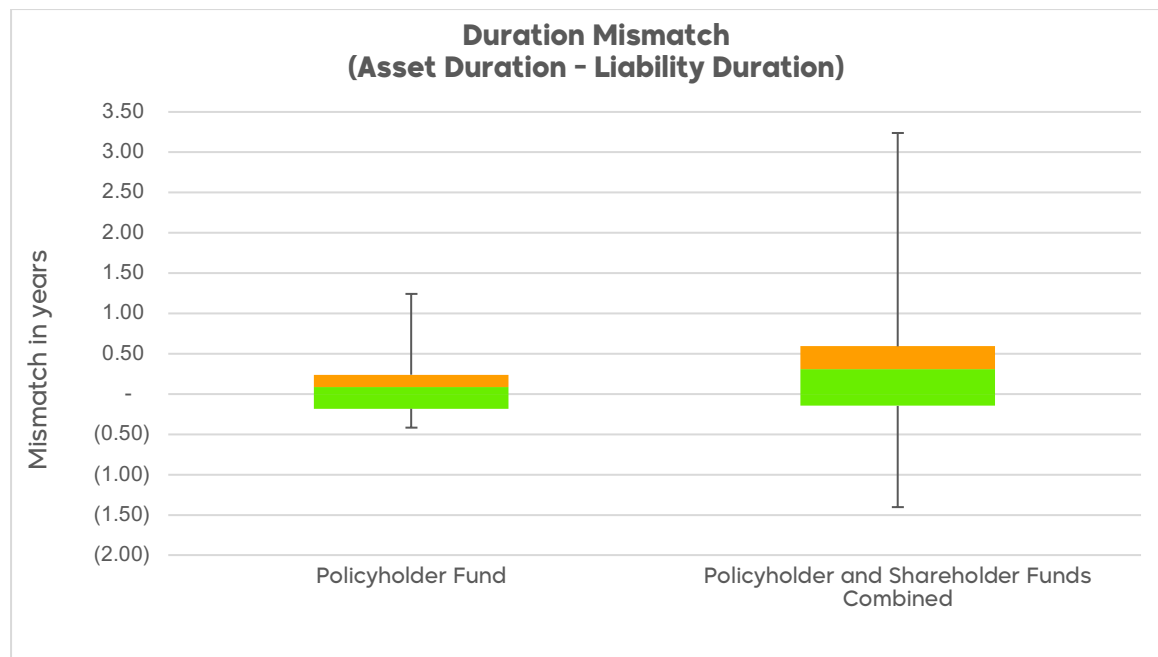
## **2. Investment and Asset Liability Management Report 2023**

Under the Actuarial Work Rules 2020, an Appointed Actuary is required to coordinate with the Investment Committee and investment manager of the insurance company and provide recommendations to the Company's Senior Management and Board of Directors regarding the Company's investment

policy and asset liability management strategy, keeping in view the nature and timing of assets and liabilities and the availability of appropriate assets.

## 2.1 Asset-Liability Duration Mismatch

The graph below shows the mismatch between the asset and liability durations, separately for the policyholder fund and for the policyholder and shareholder funds combined, depicting the median, inter-quartile range, and minimum and maximum values for each category.



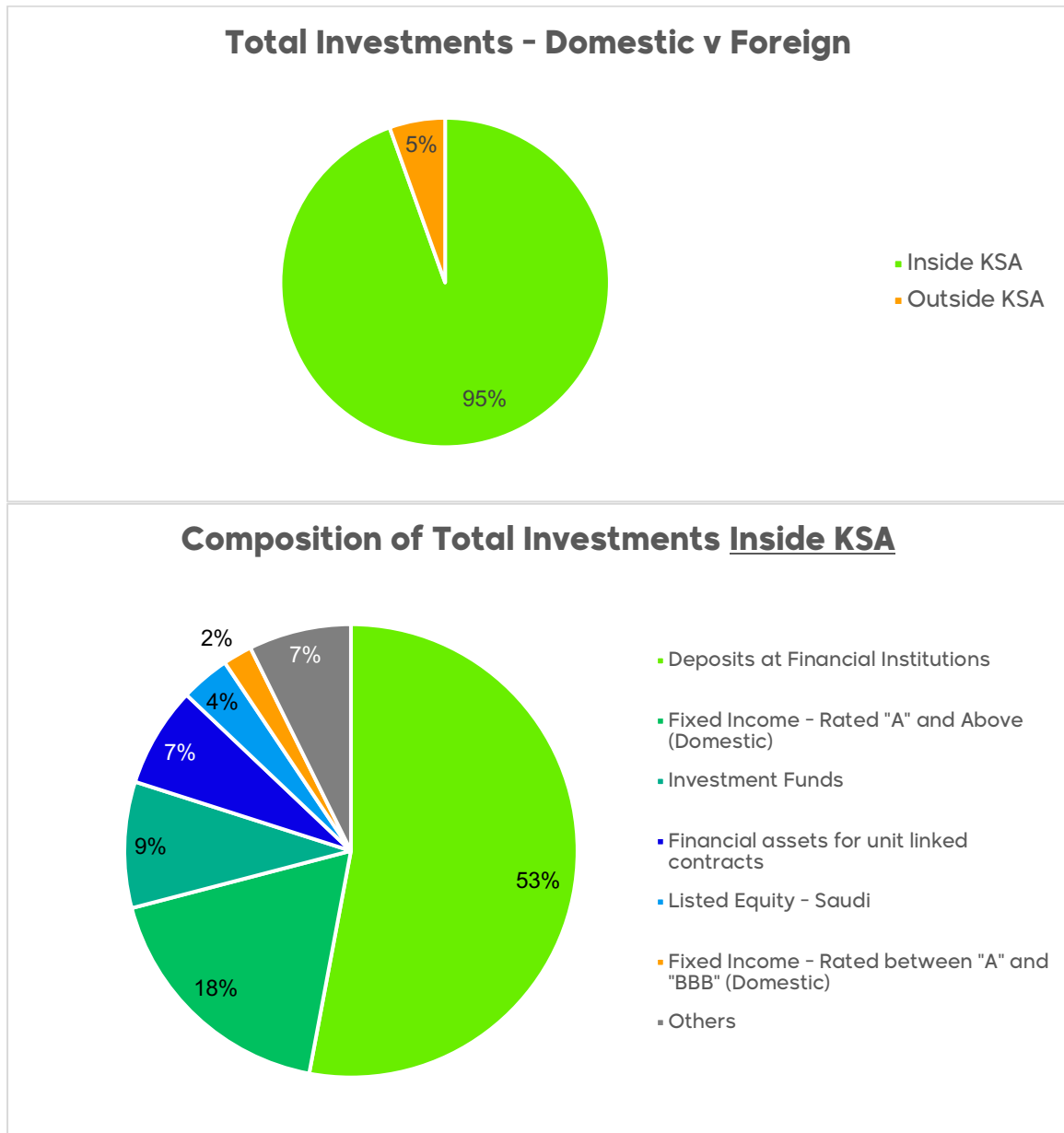
The assets and liabilities of the policyholder fund are generally well-aligned, as evidenced by the median being just above zero and a narrow interquartile range. This suggests that insurance companies effectively match their investments with the duration of their liabilities. On the other hand, when considering both the policyholder and shareholder funds together, a wider interquartile range indicates that insurance companies are more willing to take on additional risk with the shareholder funds to achieve higher investment returns.

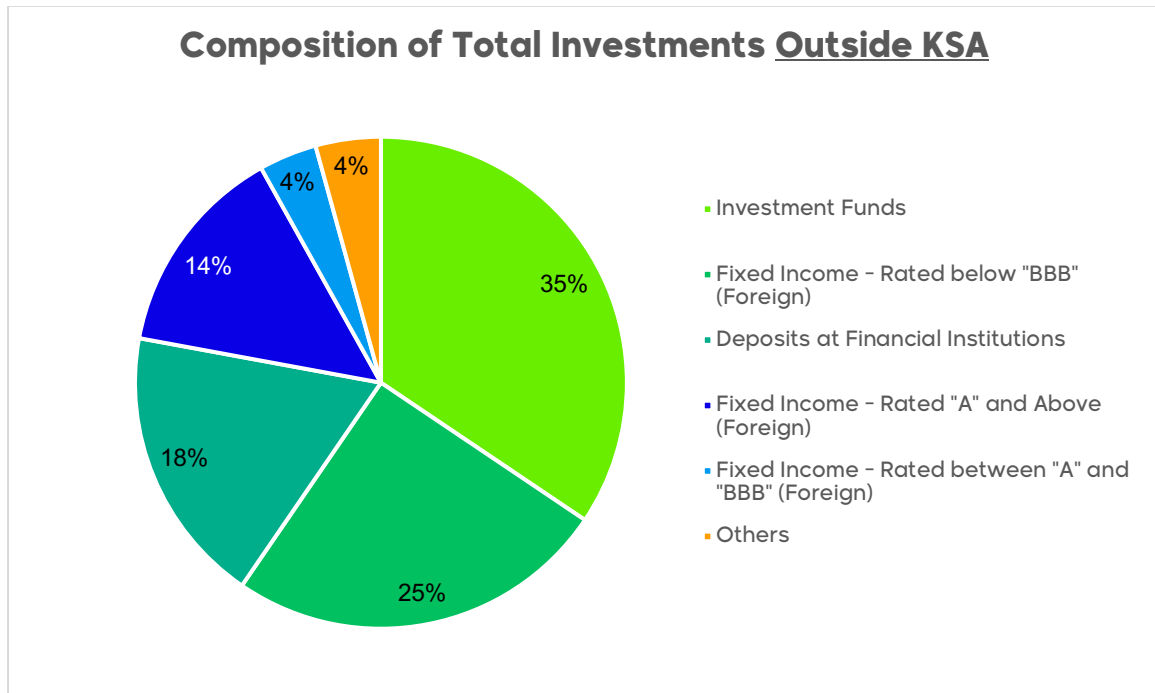
Additionally, there is at least one insurance company where the duration of policyholder assets exceeds the duration of policyholder liabilities by more than one year, potentially exposing the Company to material liquidity risk. It is

anticipated that the Company's Risk Function and relevant controls will investigate this issue more thoroughly.

## 2.2 Investments Inside versus Outside the Country

The graphs below show the split of total investments by insurance companies into domestic and foreign investments, and the composition of those domestic and foreign investments by type.





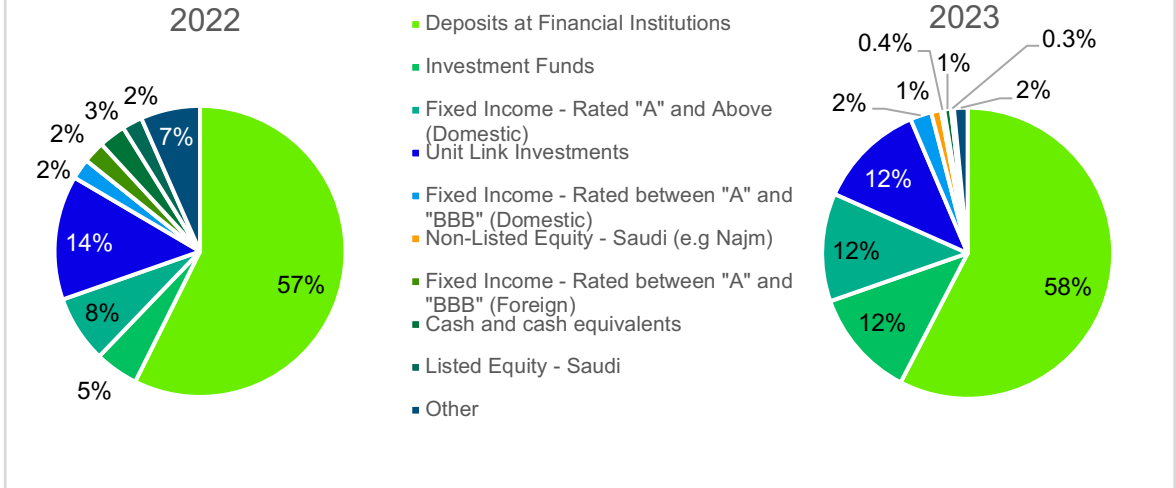
When investing domestically, deposits at financial institutions continue to be the first choice for insurance companies, which is probably a combination of liquidity needs commensurate with short term liabilities of insurance companies, limited availability of sophisticated investment instruments, and restrictions imposed by the IA regulations.

When investing internationally, which represents 5% of total investments only, investment funds are often the preferred choice due to their potential to enhance returns, manage risk, and benefit from professional expertise. In contrast, fixed-income securities rated below BBB, which represent the second largest category of investments outside KSA, can offer higher yields but require careful assessment of the associated risks.

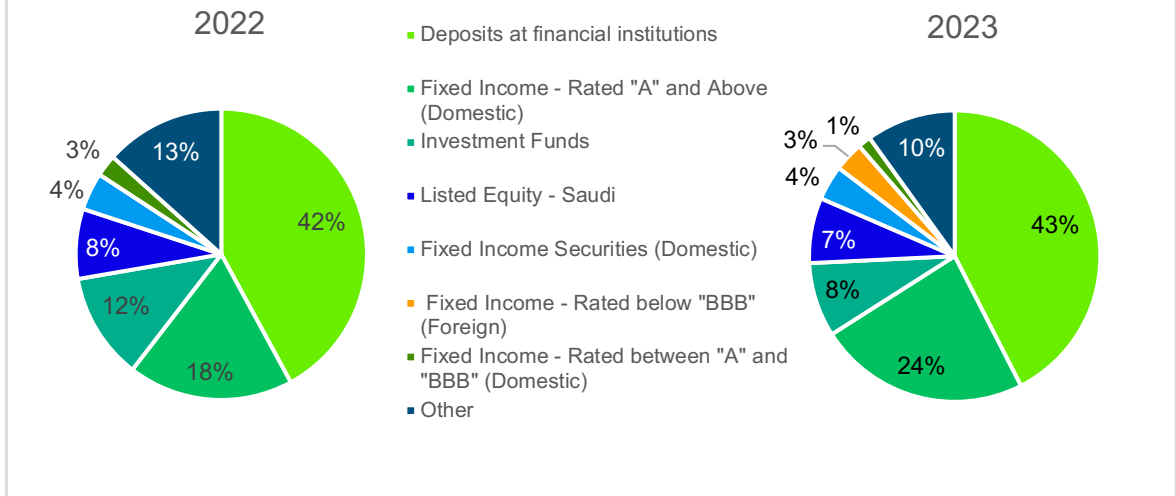
### **2.3 Composition of Investments of Policyholder Fund versus Shareholder Fund**

The graphs below show the difference in the composition of investments between policyholder fund and shareholder fund for all insurance companies in aggregate.

### Composition of Policyholder Investments



### Composition of Shareholder Investments



For Policyholder funds, it can be observed that although deposits with financial institutions constitute the biggest share of investments for both years, high-quality fixed income securities and investment funds have markedly higher shares in 2023. Moreover, the share of listed equities, which was already very low last year, has decreased even further.

For Shareholder funds, the share of investments in high-quality fixed income securities has increased from last year. When compared to Policyholder funds, the share of equities is materially higher for Shareholder funds, reflecting the ability and appetite of the former to take on more risk than the latter.

#### **The IA expects,**

- **the Appointed Actuary to perform thorough analysis and provide clear recommendations to the investment team and Senior Management that are insightful and assist in informed decision-making in the process of making suitable investments;**
- **the investment team, Senior Management and Board of Directors to seek to understand the recommendations made by the Appointed Actuary, including implications of the current investment choices and alternatives available on the Company's ability to meet its liabilities with sufficient confidence and in a timely manner.**
- **the Control functions within the Company to assess the Company's position against the market benchmarks above and where the Company is an outlier, seek justification or corrective action from the investment team, as appropriate.**

### **3. Solvency & Capital Report**

The Actuarial Work Rules mandate an Appointed Actuary to investigate and advise the Company on its solvency position and identify all major risks using a range of actuarial techniques. Initially, in 2020, the IA introduced a Stress & Scenario Test (SST) framework to assist the Appointed Actuary in meeting this requirement.

This framework evolved in sophistication year on year with the objective of making rapid progress towards a risk-based capital regime in a measured manner. The major enhancements included the following:

- Allowance for correlation between risks and sub-risks

- Recalibration of capital charge factors for Premium and Reserve risks using past experience of insurance companies in Saudi Arabia, while also considering the corresponding factors under the Solvency II regime
- Recalibration of capital charge factors for Equity and Property risks using data from the Saudi financial markets
- Recalibration of capital charge factors for Flood risk with reference to models used by international reinsurer(s)
- Addition of catastrophe risk sub-modules for Earthquake, Hail and Sandstorm perils, and calibration of capital charge factors for these perils with reference to models used by international reinsurers, where available
- Recalibration of capital charge factors for Receivables considering the local market practices
- Credit for Risk Adjustment and, for companies following the General Measurement Model, for Contractual Service Margin
- Diversification benefit for business written outside Saudi Arabia
- Alignment of Interest Rate risk sub-module with the two discounting approaches under IFRS 17, namely top-down and bottom up.

The above enhancements are expected to reflect the risk-based capital requirements for an insurer or reinsurer operating in Saudi Arabia with greater accuracy and relevance. The results of these exercises are aimed at providing insurance companies with early insights into the likely impact of transition to a risk-based capital regime.

Moreover, through multiple iterations since 2020, management of insurance companies were provided with the opportunity to understand the link between business strategy and risk-based capital requirement, and gradually embed a culture of risk-based decision-making within each insurance company. These annual studies since 2020 also offered valuable insights to the IA regarding the vulnerabilities of insurance companies to various risks.

The latest framework, updated in Q2 2024, is currently undergoing testing by the sector and the results produced by insurance companies are being

reviewed by the IA. Subsequently, we anticipate engagement with management of insurance companies to deliberate on the roll-out process for the risk-based capital regime.

**The IA expects the Company management to**

- **Inculcate a 'culture of risk' within the Company for deployment in day-to-day decision-making**
- **Fully understand the drivers of the latest iteration of risk-based capital calculation in liaison with its Appointed Actuary**
- **Use the results of the latest exercise to inform and refine long term business strategy and risk mitigation approaches**
- **Based on the results of the latest exercise, where required, start identifying and weighing the options for meeting the new capital requirements considering if and when a risk-based capital regime goes into effect.**

Copy to:

- Appointed Actuaries
- Heads of Actuarial Functions