ACTUARIAL APPROACH

HEALTHIER, LONGER, BETTER LIVES

Insurance Risk

Insurance contracts are contracts that transfer significant insurance risk. These contracts may also transfer financial risk. Significant insurance risk is defined as the possibility of paying significantly more in a scenario where the insured event occurs than in a scenario in which it does not. Scenarios considered are those with commercial substance.

The risk under any one insurance contract is the possibility that the insured event occurs and the uncertainty of the amount of the resulting claim. By the very nature of an insurance contract, the risk is random and therefore unpredictable.

The principal risk that the Company faces under its insurance contracts is that the actual claims and benefit payments exceed the carrying amount of the insurance liabilities. Factors that aggravate insurance risk include lack of risk diversification in terms of type and amount of risk.

For contracts with DPF[1], a significant portion of the insurance risk is shared with the insured party. For contracts with fixed and guaranteed benefits and fixed future premiums, there are no similar mitigating terms and conditions in the contracts that can reduce the insurance risk accepted. However, the Company mitigates insurance risk by utilizing underwriting limits to the size and type of risks and underwriting to price the accepted risks.

Experience shows that the larger the portfolio of similar insurance contracts, the smaller the relative variability about the expected outcome will be. The Company has developed its insurance underwriting strategy to diversify the type of insurance risks accepted and within each of these categories to achieve a sufficiently large population of risks to reduce the variability of the expected outcome.

The Company also mitigates insurance risk for contracts with fixed and guaranteed benefits and fixed future premiums through risk transfer:

- Sharing risks with reinsurers. Mortality risk and morbidity risk in excess of their respective retention limits are ceded to reduce fluctuations in claims payments. Retention limits are set mainly based on underwriting expertise, operational results, the expected size of the business portfolio and other considerations. Yearly renewable term reinsurance is used for most products. For new products/risk types with greater uncertainty in claim experience, quota share arrangements or co-insurance are used.

- Catastrophe reinsurance is used to protect the Company from catastrophic loss exceeding its risk tolerance. Catastrophic loss shall mean all individual losses arising out of and directly occasioned by one or series of accidents, disasters, casualties, or happenings arising out of or caused by one event, subject to meeting the limitations on duration and extent of the loss occurrence.

Sensitivity tests for insurance risk were performed to assess the impact to policy liabilities, based on 31 December 2021 position:

- For an increase in mortality and morbidity rates by 10%, life insurance policy liabilities increase by 1%.
- For a reduction in mortality and morbidity rates by 10%, life insurance policy liabilities reduce by 1%.
- For an increase in loss ratio by 10%, general insurance policy liabilities increase by 1%.
- For a reduction in loss ratio by 10%, general insurance policy liabilities decrease by 1%.

[1] Discretionary Participating Feature (DPF) entitles the policyholder to receive additional benefits or bonuses, in addition to the guaranteed benefits. The future bonuses are non-guaranteed and are dependent on the future performance of the fund and other factors. The Board has the discretion to vary the amount or timing of the distribution of these bonuses.

Risk Concentration

Concentration of risk may arise where a particular event or series of events could significantly impact the Company's liabilities. The Company is exposed to geographical concentration of risk as most of the business is resident in Singapore.

The Company manages its economic sectoral concentration by diversifying its insurance portfolio across the Singaporean population, covering different working classes and different levels of society.

The Company manages its insurance risk concentration by transferring risk above its retention limit per life, through reinsurance arrangements. There are also catastrophe reinsurance arrangements in place to protect the Company from catastrophic risk. The Company uses internal reinsurance where permitted and viable. Reinsurers are selected from a list of eligible counterparties in accordance with the AIA Group Reinsurance Credit Risk Standard.

Capital

The primary insurance regulator of the Company is the Monetary Authority of Singapore (MAS). The Company is in compliance with the fund solvency and capital adequacy requirements as prescribed in regulation 4 of the Insurance (Valuation and Capital) Regulations 2004 and section 2 of the MAS Notice 133. As of 31 December 2021, the Company has a Capital Adequacy Ratio (CAR) of 210%, which is above the regulatory requirement levels. Regulated capital of the Company as at 31 December 2021 comprised Financial Resources of S$16.48 billion and Total Risk Requirement of S$7.84 billion.

Determination of Policy Liabilities

Life Insurance

The principles of valuation adopted are in accordance with regulation 20 (Valuation of liabilities of life business (net of reinsurance)) and regulation 20A (Recognition and valuation of liabilities of life business (gross of reinsurance)) of the Insurance (Valuation and Capital) Regulations 2004, MAS Notice 133 (Notice on Valuation and Capital Framework for insurers), SAS SAP L01 (Singapore Actuarial Society Standard of Actuarial Practice for Appointed Actuaries on Singapore Life Insurance Funds), SAS SAP L02 (Singapore Actuarial Society Standard of Actuarial Practice for Appointed Actuaries on Valuation of Policy Liabilities for Life Insurance Business) and any subsequent revisions to the regulations, notice and standards.

The determination of the contract liabilities is based on sound actuarial principles. The provisions include both guaranteed and non-guaranteed benefits to policyholders.

The valuation is performed at policy level. The liability in respect of a policy is the value of expected future payments arising from the policy, including any expense that the insurer expects to incur in administering the policy and settling any relevant claims and any provision made for any adverse deviation from expected experience, less expected future receipts arising from the policy.

For Investment-linked funds, the unit reserves are calculated as the value of the underlying assets backing the units relating to the policy.

The liability in respect of any policy will not be less than zero unless there is money due to the insurer when the policy is terminated on the valuation date, in which event the value of the liability may be negative to the extent of the amount due to the insurer.

The total liability in each fund is the sum of the liability in respect of each policy of the fund determined in the manner described above.

Assumptions

Mortality, annuitant mortality and morbidity

Estimates are made as to the expected number of deaths for each of the years in which the Company is exposed to risk. The Company bases the mortality estimates on its own experience, reinsurer information and published tables, adjusted where appropriate to reflect recent trends and characteristics of special niche markets. The main source of uncertainty is that epidemics and wide ranging lifestyle changes could result in future mortality being significantly different than that in the past for the age groups in which the Company has significant exposure to mortality risk.

The best estimate assumptions for annuitant mortality are based on external tables and include mortality improvement factors.

In the review of the best estimate assumptions for critical illness and accident and hospitalization benefits, reference was made to the historical experience, available industry data, and taking into account of expectation of future trends.

Lapse and surrender rates

In the review of the best estimate assumptions for lapse and surrender rates, reference was made to the historical experience and taking into account expectation of future trends.

Expenses and inflation

Management expenses are computed using the expense unit cost factors based on the most recent expense analysis. An assumption for future expense inflation is assumed. The commission scales and other distribution costs used are those applicable to the various plans.

Discount rates

Risk-free discount rates, in accordance with MAS Notice 133, are used in determining the liability in respect of non-participating policies, the liability for guaranteed benefits of Universal Life policies, the non-unit reserves of investment-linked policies, and the Minimum Condition Liability (MCL) of participating policies (where MCL is the liability without any provision for non-guaranteed benefits).

The risk-free discount rates were derived using a three-segment approach in accordance with Appendix 3C of MAS Notice 133:

Segment 1: Valuation date to LLP - Discount rate based on market information on government bonds and use an LLP set as 20 years for SGD and 30 years for USD and AUD denominated liabilities.

Segment 2: From LLP to end of Convergence Period - Discount rate based on extrapolating risk-free forward rates between first segment and third segment. The length of segment 2 is known as the convergence period and is set as 40 years for SGD and 30 years for USD and AUD denominated liabilities.

Segment 3: From end of Convergence Period onwards - Discount rate is based on an ultimate forward rate (UFR) of 3.8% for SGD, USD and AUD denominated liabilities.

Positive adjustment to the spot risk-free discount rates is made in the form of a Matching Adjustment (MA) to portfolios approved by MAS or in the form of an Illiquidity Premium (IP) to applicable products in accordance with section 3.4 of MAS Notice 133.

The best estimate investment returns are used as the discount rates in determining the liability in respect of participating policies and liability for total benefits in respect of Universal Life policies. The best estimate investment returns are based on the expected investment return of policy assets backing the participating policies and the expected investment return of assets backing the Universal Life policies.

General Insurance

General insurance contract liabilities consist of premium liabilities (maximum of unearned premium reserves or unexpired risk reserves) and claim liabilities. The determination of these liabilities is based on sound actuarial principles.

The general insurance liabilities are calculated in accordance with regulation 19 (Valuation of liabilities of general business (net of reinsurance)) and regulation 19A (Recognition and valuation of liabilities of general business (gross of reinsurance)) of the Insurance (Valuation and Capital) Regulations 2004, MAS Notice133 (Notice on Valuation and Capital Framework for insurers), SAS SAP G01 (Singapore Actuarial Society Standard of Actuarial Practice for Actuaries Investigating Policy Liabilities Relating to General Insurance Business), and any subsequent revisions to the regulations, guidelines and standards.

Claims statistics (including Claims Development)

Claims are reflected in the profits or losses of the Company as and when reported to the Company. Liabilities for unpaid claims are estimated using the input of assessments for individual cases reported to the Company and statistical analyses for the claims incurred but not reported. Full provision is made for the estimated cost of all claims notified but not settled at the date of the balance sheet, less anticipated reinsurance recoveries, using the best information available at that date. An additional policy reserve is set up for claims incurred but not reported.

Gross claims settled during year 2021 for Life and General Insurance Fund was S$3,862 million and S$1.5 million respectively.

Pricing

The pricing of new products and re-pricing of existing products is in accordance with Section 24 of the Insurance Act (Chapter 142) of the Republic of Singapore, and is compliant with internal guidelines of AIA Group and the Company.