Prescribed Scenarios for the stress and scenario testing to be used by authorized insurers carrying on long term insurance business for the purpose of Own Risk Solvency Assessment Report

I. Introduction

I.1. The Guideline on Enterprise Risk Management ("GL21") takes effect from 1 January 2020. Section 9 of GL21 sets out the minimum requirements for the Own Risk and Solvency Assessment ("ORSA") Report that each authorized insurer which is subject to GL21 is required to observe. In particular, paragraph 9.5(k)(i) of GL21 stipulates that authorized (re)insurers carrying on long term insurance business to which GL21 applies[1] ("long term insurers") should include those scenarios provided in the Actuarial Guidance Note 7 on Dynamic Solvency Testing ("AGN7") issued by the Actuarial Society of Hong Kong as scenarios prescribed by the IA ("Prescribed Scenarios") until further revision in their scenario and stress testing ("SST") and include the results, with details of management actions and their impact and justifications, in their ORSA Reports.

I.2. This document sets out the latest updates in respect of the Prescribed Scenarios for the first ORSA Report, which is required for the financial year ended 31 December 2020.

I.3. The Prescribed Scenarios in this document are designed for a long term insurer to consider in its ORSA Report, the risk to its capital position of multiple severe events or stresses happening at the same time, and the management actions it would take in such extreme events or stresses. The Prescribed Scenarios outlined in this document are not designed to test for other purposes (e.g. business failure analysis or risk monitoring).

I.4. IA may request insurers to test scenarios in addition to the Prescribed Scenarios. In such cases, the case officer at IA will communicate with the insurer on the additional specific scenario(s) ("Specific Scenario(s)").

I.5. For a composite direct insurer which has 95% or more of its insurance liabilities[2] arising from long term business as at valuation date, it is required to carry out Prescribed Scenario 2 under GI Prescribed Scenarios[3] but not other scenarios under the GI Prescribed Scenarios[3].

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[1] Please refer to Section 2 of GL21.

[2] Based on RBC2020 Technical Specifications.

[3] Details of GI Prescribed Scenarios can be referred to https://ia.org.hk/en/legislative_framework/files/GL21_GI_SST_20200113.pdf

I.6. This document should be read in conjunction with GL21 and AGN7. Unless otherwise specified, words and expressions used in this document shall have the same meanings as given to them in GL21.

II. Prescribed Scenarios

II.1. The Prescribed Scenarios are set out below, with reference to the scenarios A to D as provided in the AGN7 (extracted in **Appendix**).

Prescribed Scenario 1 – Market risk scenario

Part A – Interest rate, equity and property risks scenario

This scenario takes the more severe scenario from AGN7 scenario C or D with modifications below:

- The "rates projected" refers to rates up to the last liquid point of the risk-free yield curve;
- The shock on ultimate forward rate ("UFR") is set at 90%/110% of the base scenario under AGN7 scenario C or D respectively; and
- Smith-Wilson method is used to interpolate and extrapolate the risk-free yield curve.

The scenario is applied instantaneously at the valuation date and throughout the planning period. Long term insurer needs to justify the assumptions behind the choice of scenario.

Part B – Credit spread widening scenario

This scenario is based on immediate increase of credit spread, according to the below table, as at the valuation date, which trends down to 50% at the end of the first projection year, and further linearly to zero at the end of the third projection year[4].

Rating[5] (in bps)	Up to 5 years	Between 5 to 10 years	Between 10 to 15 years	Between 15 to 20 years	Between 20 to 25 years	Between 25 to 30 years	>30 years
	(0, 5]	(5, 10]	(10, 15]	(15, 20]	(20, 25]	(25, 30]	30+
1	95	85	75	70	65	60	55
2	110	100	90	85	75	70	60
3	175	145	130	120	110	100	90
4	275	220	200	180	165	150	135
5	425	390	355	325	295	265	245
6	640	585	530	485	440	400	365
7	640	585	530	485	440	400	365

For unrated fixed income assets, the insurer should assume the shock applied as the average of rating band 4 and 5.

[4] For example, for a BBB bond with maturity of 6 years, the increase of credit spread would be 220bps as at valuation date, 220bps x 50% at projection year 1, 220bps x 25% at projection year 2 and 0bps at projection year 3.
[5] Please refer to RBC2020 Technical Specifications for the definition of rating band.

Prescribed Scenario 2 – Life insurance risk scenario
This scenario is based on the combination of AGN7 scenarios A and B as at valuation date and throughout the planning period.

Prescribed Scenario 3 – Market risk with life insurance risk scenario
This scenario is based on the combination of life insurance risk scenario under Prescribed Scenario 2 above, and the more severe market risk scenario between Part A and Part B of Prescribed Scenario 1 above.

Prescribed Scenario 4 – Compound scenario (composite insurer only)
This scenario is based on the combination of:

(i) life insurance risk scenario i.e. Prescribed Scenario 2 above;

(ii) self-defined general insurance loss scenario i.e. Prescribed Scenario 2 under GI Prescribed Scenarios[3]; and

(iii) the worst case market risk scenario as elaborated in paragraphs II.3 and II.4.

II.2 All composite insurers are required to carry out Prescribed Scenario 4, while Prescribed Scenario 3 above and Prescribed Scenario 3 under GI Prescribed Scenarios[3] are optional.

II.3 Subject to paragraph I.5, composite insurers are not required to carry out Prescribed Scenario 1 above[6] if the Prescribed Scenario 1 under GI Prescribed Scenarios[3] is more severe. For the avoidance of doubt, all assets and liabilities of an insurer would be subject to the effect of market risk shocks in determining the scenario.

II.4 For composite insurers to which paragraph I.5 is applicable, the worst case market risk scenario under Prescribed Scenario 4 would take the more severe one from Part A or Part B of Prescribed Scenario 1 above.

III. Scenario Requirements

III.1. As stated in section 11.3 of GL21, for the base scenario to be included in its ORSA Report, a long term insurer, during the Initial Period, should use the regulatory balance sheet and regulatory capital requirements derived from the most recent Quantitative Impact Study, including any subsequent updates and clarifications made prior to the valuation date of the ORSA Report. The time-horizon for the base scenario should be consistent with its medium-to-longer term business plan i.e. 3, 5 or more years.

III.2. For each scenario, a long term insurer should assess the impact of the scenario on its regulatory balance sheet, eligible capital resources and regulatory capital requirements

[6] Part A and Part B of Prescribed Scenario 1 above are considered separately.

as at the valuation date of the ORSA Report, and the subsequent projection to the business plan time horizon and include the results in its ORSA Report. The long term insurer should firstly assess the impact assuming no management actions are taken. This assessment should include consideration of ripple effects under the scenario.

III.3. For any scenarios that result in the value of a long term insurer's eligible capital resources falling below its Target Capital or regulatory capital requirement, the long term insurer should consider the potential management actions it should take as a result of such scenarios in order to restore the stressed solvency position to the regulatory or, ultimately, target capital level. Both kinds of management actions should be considered i.e. those within the control of the long term insurer and those require external support (e.g. raising additional capital or support from any group company). Any planned management actions should meet the criteria outlined in GL21 paragraph 6.4.5. Once appropriate management actions have been determined, the long term insurer should assess the positive impact on the value of its eligible capital resources or regulatory capital requirements assuming that the planned management actions are effectively taken, and include such assessment in its ORSA Report.

IV. Scenario Reporting

IV.1. The presentation of scenarios (including base scenario) in a long term insurer's ORSA Report should cover the following matters:

- **Assumptions** – A long term insurer should include the key assumptions[7] for each scenario including the key changes of assumptions from those adopted in the base scenario.

- **Results** – For the results of each scenario, as compared with the base scenario, a long term insurer should cover the impact on its PCR, eligible capital resources, solvency ratio (including target solvency ratio as appropriate) before and after planned management actions at the valuation date and over the planning period. Where necessary, the IA may further request the insurer to provide the underlying projection model or breakdown of results.

- **Impact** – A long term insurer should include in its ORSA Report a description of the impact of each scenario including commentary on the results and, where appropriate, a breakdown of the movements in capital (e.g. by asset/liability type) and PCR (e.g. by PCR risk type).

[7] Under paragraph 9.4(a), ORSA Report should cover, amongst others, summary of assumptions to determine the regulatory capital requirements.

- **Management actions** – A long term insurer should include in its ORSA Report a description of the management actions, including the order, timing and the impact of the management actions. Elaboration of whether each action has been approved at the Board, senior management or other appropriate level should also be included.

V. Additional Notes to Own Scenarios

V.1 Pursuant to paragraph 9.5(k) of GL21, insurers are also required to come up with their own scenarios, apart from the Prescribed Scenarios. Long term insurers may take reference to the AGN7 Part I section 3.8 and Part II section 4, as well as AGN7 scenarios G to K for the purpose of own scenarios. While the own scenarios are not necessary to have financial results more severe than the Prescribed Scenario with worst result, IA expects insurers to employ their own scenarios that are severe in respect of their financial or capital positions. Insurers should explain in its ORSA Report the range of scenarios it assessed in order to determine the chosen scenarios used, and discuss the justifications for the scenarios chosen (including the number and design of scenarios).

VI. Sign-off of SST

VI.1 Similar to AGN7, the Appointed Actuary should provide the opinion on the SST, including assumptions, proxy approach taken and results. This does not affect the Board's ultimate responsibility on the ORSA Report.

Appendix

Prescribed scenarios A to D (extracted from Section 3.7.1 of AGN7):

Scenario A:

- 15% deterioration in mortality rates for life business / endowment business;
- 15% deterioration in morbidity rates;
- 15% increase in incidence rates for disability, accident and sickness; and
- 15% improvement in mortality for annuity business.

Scenario B:

- an increase or decrease in lapse rates of 5%, depending on which alternative produces the most adverse results, by product.

Scenario C:

- interest rates to be set to 70% of the rates projected in the base scenario; and
- equity and real estate market values fall by 25% in the first year, and thereafter grow at the same rate as the base scenario.

Scenario D:

- interest rates to be set to 130% of the rates projected in the base scenario, or at the base scenario rates plus 2% if greater; and
- equity and real estate market values fall by 25% in the first year, and thereafter grow at the same rate as the base scenario.