BERMUDA MONETARY AUTHORITY

Instructions

2025 Global Financial Crisis Stress Test

May 2025

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INTRODUCTION

The Bermuda Monetary Authority (Authority or BMA) continues to monitor worldwide events and Bermuda's market developments. The Authority intends to gather market-wide information from Bermuda Commercial Long-Term Class C, D and E insurers (reinsurers) on their sensitivity to a severe economic crisis, such as the Global Financial Crisis (GFC) of 2008. The aim is to assess the market resilience in the face of a severe market event. This specific analysis will complement the regular stress tests performed by these insurers as part of their annual filings.

The approach to assessing this impact is for insurers (reinsurers) to calculate the impact on their financial strength by testing a GFC-style stress (the stress or stresses). In addition to the impact on their financial stability, companies will consider the appropriate triggers for treaty recaptures and the range of contractually enforceable or otherwise highly plausible management actions that may mitigate the risk of recapture.

To avoid doubt, the BMA does not use the stress testing exercise to set regulatory capital requirements.

The calibration of the stress test is based on the April 2023 Aggregation Method Data Collection exercise[1] (IAIS Specification) and will be performed based on the reinsurers' balance sheet as at 31 December 2024, or the closest financial year end (valuation date) used for annual regulatory filings. The definition includes individual stresses to interest rates, credit spreads, equities, real estate and realised credit defaults. The purpose of this document is to outline how the stresses should be applied to ensure consistency across the companies' submissions.

All the stresses below should be applied together and reported on a combined basis. They should also provide a stressed financial condition on both pre- and post-management actions.

For any additional queries, please contact the Authority at RiskAnalytics@bma.bm.

SCOPE

All BMA regulated commercial insurers (reinsurers) – Classes C, D and E – are expected to submit the GFC stress test. Non-insurance bearing entities (such as Insurance Groups) are excluded. Dual commercial insurers (reinsurers) are expected to perform the GFC stress test for both the long-term and general insurance segments, understanding that recapture triggers are related to entity-level Enhanced Capital Requirements (ECR) performance.

[1] "Instructions for the April 2023 Aggregation Method (AM) Data Collection Exercise of the Monitoring Period Project", 2023
https://www.iais.org/uploads/2023/06/Public-2023-AM-Data-Collection-Technical-Specifications.pdf

A reinsurer with no in-force reinsurance treaties at the valuation date, or otherwise agreed by the Authority, shall be defined as an out-of-scope reinsurer. Applications for this designation shall be made via email to RiskAnalytics@bma.bm by 1 June 2025.

'Out-of-scope reinsurers' should provide a submission on a best endeavours basis and note the lack of reinsurance treaties in the sheet titled Disclosure (Sheet 4) of the submission template. The submission will still quantify the impact of the stress on the reinsurer's financial strength as a minimum with the impact of appropriate management actions welcomed.

SUBMISSION DEADLINE

Unless otherwise agreed with the Authority, reinsurers must complete the GFC-style stress data call using the supplied submission template via email to RiskAnalytics@bma.bm by 16 June 2025 (the submission deadline).

An extended deadline of 30 June 2025 may be permitted for reinsurers who engage with the Authority ahead of the submission deadline with draft results and management actions.

GOVERNANCE

The Authority expects the submission to be reviewed by the company's risk function and signed off by the chief risk officer and another appropriately skilled senior executive (i.e., chief executive officer, chief financial officer or chief actuary). Companies are encouraged to engage the board, relevant board committees or other key stakeholders with the results and details of these engagements are welcomed in the section titled Disclosure (Sheet 4) of the submission template.

IMPACTS ON AVAILABLE CAPITAL

Market Risk (Interest Rate, Spread, Equity and Real Estate Stress)

- **Interest Rates** such as risk-free rates and the standard approach curve typically published by the BMA to be used in the stress are available here. For curves that are not published or for reinsurers who utilise an alternative risk-free curve, the curve shall have a parallel stress applied as defined in the IAIS Specification (e.g., 1.47% decrease for USD)

- **Market Value of Assets** (MVA) stressed by defined parallel shocks by currency (e.g., a 1.47% decrease in interest rates for USD and a 2.98% spread increase for

USD fixed income), a 45% decrease to developed equity holdings, and a 25% decrease to real estate holdings

- The same spread stress should be applied to all fixed income assets regardless of rating and duration
- Private equity holdings should be stressed consistently with public equity holdings
- Preferred shares and hybrid obligations, including subordinated debt, are subject to the equity risk charge within the Insurance Capital Standards (ICS[2]) specification. These assets should be subject to a stress of 100% of the relevant hybrid/preference share stress factor shown in Table 19 from section 7.3.4 of the ICS Technical Specification

Table 19: Stress factors for hybrid debt/preference shares

ICS RC	x%
1-2	4%
3	6%
4	11%
5	21%
6-7	35%

- Stresses for the calculation of the MVA are assumed to be instantaneous with no opportunity for rebalancing

- **Scenario Based Approach (SBA)** liabilities will be revalued to reflect the following factors:
  - The specified stress scenarios should stress MVA
  - For the interest rates stress test, each SBA scenario should be reprojected according to the stress. The BMA will publish appropriate risk-free curves to be used as the base scenario
  - For the credit spread stress, the existing assets and reinvestment assets should be re-projected assuming current spreads are shocked and graded to the

[2] The Insurance Capital Standard (ICS) has been developed as a consolidated group-wide capital standard for IAIGs. The ICS is the quantitative element of ComFrame. The purpose of the ICS is to create a common language for supervisory discussions of group solvency to enhance global convergence among group capital standards. The ICS was adopted by the IAIS at its Annual General Meeting in December 2024.
2024-ICS-data-collection-Technical-Specifications.pdf

company's long-term spreads according to their current SBA reserving practice
    - The Best Estimate Liabilities (BEL) shall be set as the highest asset requirement across all scenarios
    - Assets approved to back long-term liabilities (long term investment credit assets) [3], are to be revalued using the stresses, with no stress applied to future return assumptions

- **The Standard Approach (SA) BEL** will be revalued using curves provided by the BMA that reflect the stress
    - For currencies that the BMA does not publish, the stress applied will be a parallel stress to the risk-free rate, as defined in the IAIS Specification, in addition to a tapered application of the credit spread stress defined in the IAIS Specification
    - The tapering shall be 95% at the one-year tenor and 70% of the stress at the 20-year tenor. The taper shall be linearly interpolated for tenors between one year and 20 years. For tenors beyond 20 years, the taper shall be 70%

- **The Risk Margin** is revalued based on the adjusted Bermuda Solvency Capital Requirements (BSCR) framework and risk-free rates

Credit Default Risk

The IAIS specification requires a credit default shock calibrated to 50% of the ICS credit risk capital factors. For clarity, there is no downgrade shock in this stress.
Stresses are applied on a pre-diversification basis. Credit default stresses will be applied after the market risk stresses are applied.

Preferred Method: A stress is defined as 50% of the IAIS capital factors (Section 7.4 of the ICS Technical Specification).

- Companies map their existing asset categories to those published by ICS (extract below):

    > *Credit exposures to national governments, multilateral development banks, and supranational organisations are not subject to credit risk charges. Regional governments, municipal authorities, and other government entities whose debt is not issued or guaranteed by the national government are classified as public sector entities. Exposures to commercial undertakings owned but not guaranteed by governments or municipal authorities are classified in the corporate category.*

[3] Paragraph 28 subparagraph 17 from the INSURANCE (PRUDENTIAL STANDARDS) (INSURANCE GROUP SOLVENCY REQUIREMENT) AMENDMENT RULES 2024 (2024 Rules)

The corporate category includes exposures to banks and securities dealers but excludes exposures to reinsurers. Rated[4] *commercial mortgages are included in the corporate exposure class.*

The securitisation category includes all holdings of mortgage-backed securities and other asset-backed securities.

- Companies calculate the effective maturity for each asset as follows:

$$Effective\ Maturity = \frac{\sum_t t * CF_t}{\sum_t CF_t}$$

- BSCR ratings can map directly to the ICS Rating Category (RC) mappings, for example:

ICS RC	BSCR Rating
1	1
2	2
3	3
4	4
5	5
6	6
7	7

- For unrated commercial mortgages, companies should use the LTV/DSCR mapping table or the NAIC Securities Valuation Office (SVO) or CM rating, where available, to arrive at the ICS stress factors as described in section 7.4.1.7 of the ICS Technical Specification
- For residential mortgages, companies would need to use LTV to assign the stress factors described in section 7.4.1.7 of the ICS Technical Specification
- Table 26 from the ICS technical specification provides the credit risk capital factors for corporate bonds depending on maturity and RC:

[4] Ratings by an allowed credit rating agency as listed in paragraph C2.3i subparagraph a) or b) of the 2024 Year-End Long Term Instructions Handbook. For this purpose, NAIC SVO or CM ratings are not considered, and such assets should be considered unrated.

Table 26: Credit risk stress factors for corporates and reinsurance

ICS RC	Maturity: 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14+
1 or 2	0.2%	0.7%	0.9%	1.2%	1.4%	1.6%	1.7%	1.9%	2.0%	2.1%	2.2%	2.3%	2.4%	2.4%	2.5%
3	0.6%	1.3%	1.6%	1.8%	2.1%	2.3%	2.6%	2.8%	3.0%	3.2%	3.3%	3.4%	3.5%	3.6%	3.7%
4	1.4%	3.0%	3.6%	4.1%	4.5%	4.9%	5.1%	5.3%	5.4%	5.6%	5.7%	5.8%	5.9%	6.0%	6.0%
5	3.6%	7.1%	8.3%	9.0%	9.4%	9.7%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%
6	8.9%	14.4%	15.3%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%
7	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%
Unrated	6.3%	10.7%	11.8%	12.3%	12.5%	12.6%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%
In Default	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%

For example, for a BBB-rated corporation in the nine to ten-year maturity bucket, the capital factor would be 5.6%. Therefore, the stress to be applied would be 50% of this factor, i.e., 2.8%

Alternative Method for Mortgages: A stress is defined as 50% of the BSCR capital factor. This method should only be used by companies that do not have underlying data or those who assess the materiality of their mortgage exposure to be disproportionate to the effort required to perform the preferred method of determining the stress.

Firms should indicate that this method was chosen and justify the approximation on the sheet titled Disclosure (Sheet 4) of the submission template.

Application

The following steps should be taken to adjust the available capital:

- Calculate for each asset the appropriate ICS credit risk capital factor
- Apply 50% of the capital factor to the stressed MVA. Asset values are reduced by 50% of their applicable ICS credit risk capital factor
- No revaluation of the BEL (SBA and SA) or Risk Margin
- For SBA reporting firms, firms should assess whether they have sufficient SBA-eligible assets post-stress across the balance sheet (i.e., including surplus assets) to cover the SBA BEL. The first management action is reserved for this rebalancing. Further details on how this should be described are in the section called ‘Reporting Template’

- If insufficient eligible assets exist on the balance sheet to meet the requirements of all SBA portfolios, the firms should revalue the reserves for which insufficient SBA eligible assets exist using the Standard Approach and disclose the management actions available to restore SBA eligibility within the management actions section
- It is essential to ensure that there is no splitting of liabilities at the policyholder contract level and block-product level

IMPACT ON THE BSCR

Utilise the current BSCR charges and methodology applied to the revalued MVA and liabilities. To avoid doubt, the BSCR charges for assets should be applied to the value of assets after applying the market risk and credit default risk stresses.

REPORTING TEMPLATE

The reporting template to be completed for each company will be published with this technical specification.

Sheet 1. ECR Impacts: Sections A and B

Reinsurers will need to report a balance sheet, as well as the required capital and ECR. Three primary bases are required to be disclosed:

1. Simplified reported results as at the valuation date;
2. GFC combined stress impact; and
3. Simplified results following GFC combined stress (before management actions).

The balance sheet will include a detailed summary of the asset classes, split by assets backing surplus, SBA and the standard approach. Asset Types should be reported consistently, and the Lapse, Liquidity and Scenario-Based Approach Return (LLSBA) should be completed for the year-end filing. The total assets in each category should be reconciled with those provided in the LLSBA.

Balance sheet items other than assets and technical provisions should be revalued under the GFC stress test using approximations as the reinsurer deems reasonable.

Intermediate fields quantifying the separate impacts of the interest rate, credit spread, equity, real estate and credit default stresses may be provided if this information is readily available, but this is not required by the BMA. This information may assist the Authority in identifying any particular vulnerabilities of the market.

Additional lines for assets and liabilities called ‘miscellaneous’ have been included to capture relevant balance sheet features that are not appropriate to capture elsewhere in the simplified balance sheet.

The impact and stressed balance sheet should avoid categorising assets or liabilities between rows. For example, liabilities and assets backing SBA liabilities at the valuation date should remain in those rows in this step.

Sheet 1. ECR Impacts: Section C

This section should quantify the impact on each of the balance sheet items of each of the management actions described in the Management Actions section (Sheet 2).
The final column should restate the balance sheet, incorporating the impact of both the stress and the management actions.

Sheet 2. Management Actions

This sheet provides space for a description of the top five management actions following the stress.

Action 1 is reserved for balance sheet rebalancing in relation to assets backing SBA or SA liabilities. Appropriate assets backing Standard Approach liabilities or backing Capital and Surplus may be re-allocated to back SBA liabilities to ensure SBA requirements continue to be met. No external trading is permitted under Action 1, so each asset class's total value (across SBA, SA and Surplus) shall be unchanged.

Subsequent management actions should be limited to those that are highly plausible and actionable following a GFC-style event. These are likely to be contractually in place (such as capital maintenance agreements or revolving credit facilities). The rotation of assets should be limited to public assets within time frames that exceed four weeks. Management actions should be specified as being within one of the following four categories:

- Immediate (or within one week)
- More than one week but within four weeks
- More than four weeks but within three months
- More than three months but within six months

Management actions should be congruent with the cure period of the appropriate recapture trigger.

Sheet 3. Recapture

This sheet provides a space for a list of any reinsurance treaties. Up to 92 treaties may be added. Treaties should be grouped where appropriate, given the same cedent and the same (or very similar) recapture triggers. The following table describes the fields that should be populated:

Field	**Description**
Treaty Identifier	This is a descriptive name of the treaty or group of treaties, which should be unique.
Cedent Jurisdiction	The two-letter ISO 3166 country code represents the jurisdiction the cedent resides in (e.g., US, GB, JP, etc.)
Cedent Affiliation	Identify whether the cedent is an affiliate, related or connected party as defined in the 2024 Rules
Assets Held	How the assets are held in the context of protecting the cedent in the following structures: • Pure Coinsurance • Coinsurance with Funds Withheld • Modified Coinsurance • Trust Account • Other Collateral Arrangement • Reinsurer Balance Sheet The most significant structure should be selected where a treaty includes multiple structures.
Reserve Balance (as Reported)	The reserve calculated at the valuation date before the stress.
ECR Trigger	The ECR trigger at which the cedent has the option or obligation to recapture the treaty. Where different trigger levels exist for option and obligation, the most relevant trigger should be included, e.g., if the stressed ECR is 110% and the triggers are 120% (option) and 100% (obligation), the most relevant trigger is 120% (i.e., the one which is breached). Where no ECR trigger exists, this field should be populated with 0%.
Recapture Impact	If the treaty is at risk of being recaptured (i.e., because one of the triggers has been breached or is at risk of being breached due to pro-cyclical recapture risks), then this field should identify whether the recapture of the treaty at this level would have an immediate positive or negative impact to the reinsurer's ECR. If the treaty has minimal risk of being recaptured in the stress scenario, then this field should be answered 'N/A'. The impact should be noted in the section titled Disclosure (Sheet 4).
Cure Period	Identify the reinsurer's time frame to remediate their ECR to mitigate the cedent's option or obligation to recapture.

Other Recapture Features (Description)	This should describe other recapture triggers of relevance, including but not limited to additional ECR triggers, liquidity triggers, rating triggers and guarantor triggers.

Sheet 4. Disclosure

This sheet provides space for additional information to be included with the submission:

#	Required	Description
1	Yes	The valuation date as defined in this document.
2	Yes	The reporting currency should be consistent between this submission and the year-end filings.
3	Yes	An identification of submissions by an out-of-scope reinsurer
4	Yes	An identification of whether the submission utilises the alternative method for mortgages as defined in this document for the credit default risk calculation
5	Yes	The names and positions of the two senior executives who have reviewed and approved the submission.
6	No	An optional space to describe any notable approximations or deviations from the ICS Technical Specification in the calculation of the stress
7	No	If any treaties are at risk of recapture, this should confirm that the management actions described are appropriate to be executed within the relevant recapture cure period(s).
8	No	Where recapture triggers may be breached, it should be noted whether the recapture would be solvency positive (i.e., the event of recapture would result in a higher ECR than the non-event) or solvency negative. Where this is solvency negative, it should be quantified to articulate the risk of contagion and pro-cyclical risk to the company (i.e., the risk of one recapture causing additional triggers to be breached and other treaties recaptured). Where the impact is solvency positive, then it may also be quantified to articulate the anti-cyclical impact and the avoidance of additional recaptures.
9	No	Where additional governance (above the review by the company's risk function and approvals as required by this document) or engagement with other relevant stakeholders has taken place or is planned to be performed with the results of this submission, then this can be described here.
10	No	If the 'miscellaneous' line of the assets or liabilities in Sheet 1 ECR Impacts has been used, then the details of the asset or liability of relevance should be included here.