



# **BERMUDA MONETARY AUTHORITY**

## **THE BERMUDA CAPITAL AND SOLVENCY RETURN**

### **2022 INSTRUCTION HANDBOOK FOR INSURANCE GROUPS**

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## **A.OVERVIEW**

### **A1. INTRODUCTION TO THE GROUP CAPITAL AND SOLVENCY RETURN**

#### ***Introduction***

- A1.1 The capital and solvency return is an annual return relating to an insurance group's risk management practices and information used by an insurance group to calculate its Enhanced Capital Requirement (ECR) and Target Capital Level (TCL) as prescribed by Prudential Standard Rules (Rules) made under section 6A of the Insurance Act 1978 (the Act). Every Class 4, Class 3B, Class 3A, Class E, Class D and Class C insurer, and Insurance Group shall submit to the Bermuda Monetary Authority (Authority or BMA) a completed capital and solvency return on or before its filing date. The most recent version of the capital and solvency return is available on the BMA website.
- A1.2 The capital and solvency model is used to calculate an insurance group's ECR, an additional capital and surplus requirement imposed by Rules made under section 6A of the Act. The ECR of an insurance group shall be calculated at the end of its relevant year by the higher of the Bermuda Solvency Capital Requirement (BSCR) model and an approved internal capital model, provided that the ECR amount is equal to or exceeds the Minimum Solvency Margin (MSM). The TCL of an insurance group is calculated as 120% of the ECR and although not a capital requirement per se, insurance groups are expected to hold eligible capital resources to cover it; failure to do so will result in additional reporting requirements and enhanced monitoring, and in the submission of a remediation plan to restore capital above the TCL.
- A1.3 The BSCR model calculates a risk-based capital measure by applying capital factors to capital and solvency return elements, including investments and other assets, operational risk, and Long-Term insurance risks, in order to establish an overall measure of capital and surplus for statutory solvency purposes. The capital factor established for each risk element, when applied to that element, produces a required capital and surplus amount. The individual capital amounts generated for each risk element (excluding operational risk) are then summed. Covariance adjustments are made to arrive at the BSCR (after covariance adjustment), which is further adjusted to include insurance group -specific operational risk and capital add-ons, as assessed by the BMA, to finally produce the BSCR of an insurance group.
- A1.4 An insurance group's available statutory capital and surplus divided by the BSCR gives the BSCR ratio. An insurance group's available statutory capital and surplus divided by the ECR gives the ECR ratio. The BSCR and ECR ratios will assist the BMA to evaluate the financial strength of an insurance group.

A1.5 The BSCR, ECR and TCL establish solvency capital levels that are used by the BMA to monitor the capital adequacy of Class 4, Class 3B, Class 3A, Class E, Class D and Class C insurers and Insurance Groups.

A1.6 When completing the BSCR model, the insurance group should be advised of the following:

|    | <b><u>Requirement</u></b>  | <b><u>Consolidated</u></b> | <b><u>EBS</u></b> |
|----|--|----------------------------|-------------------|
| 1  | Cover Sheet and Solvency Certificate   | X                          |                   |
| 2  | Financial Condition Report<br>(with EBS valuations where applicable)   | X                          |                   |
| 3  | Form 1, 2 and 8<br>(based on the insurance group's GAAP** statements less the prudential filters)  | X                          |                   |
| 4  | Form 1EBS<br>(following the Prudential Standard Rules and the principles found in the Guidance Note – For Statutory Reporting)   |                            | X                 |
| 5  | Schedules II, IIA, III, IIIA, IV, IVA, IVB, IVC, V, VI, VII, VIII, VIIIA, XVIII, XIX, XX and XXI   | X                          | X                 |
| 6  | Governance Structure (Schedule V(a))   | Unconsolidated*            |                   |
| 7  | Group Structure (Schedule V(b)***)   | X                          |                   |
| 8  | Intra-Group Transactions (Schedule V(c))   | X                          |                   |
| 9  | Stress Scenarios (Schedule V(e))   | X                          |                   |
| 10 | LT Modified Coinsurance Arrangements (Schedule V(f))   | X                          |                   |
| 11 | Deposit Assets & Liabilities (Schedule V(k))   | X                          |                   |
| 12 | GISSA (Schedule IX);<br>*(note capital charges on a EBS basis)   | X                          | X*                |
| 13 | Catastrophe Risk Return (Schedule X)   | X                          |                   |
| 14 | Schedule of Regulated Non-Insurance Financial Entities (Schedule XIA)  | X                          |                   |
| 15 | Schedule of Unregulated Entities Where Parent Exercises Control (Schedule XIB)   | X                          |                   |
| 16 | Schedule of Unregulated Entities Where Parent Exercises Significant Influence (Schedule XIC)   | X                          |                   |
| 17 | Schedule of Entities Capital Deducted From Available Capital and Surplus (Schedule XID)  | X                          |                   |
| 18 | Schedule of Group Solvency (Schedule XII)  | X                          |                   |
| 19 | Eligible Capital (Schedule XIII)   |                            | X                 |
| 20 | Schedules IIB, IIC, IID, IIE, IIF, IVD, IVE, XXA, XXIA, XXIII<br>(For the 2022 year-end, insurance groups are required to complete both the 2018 year-end methodology and the 2019 year-end methodology, which is included in the latest release of the BSCR model. Guidance related to completing these |                            | X                 |

|  |  |  |  |
|--|--|--|--|
|  | <p>schedules are indicated in green text throughout this document (and are highlighted in yellow tabs in the BSCR model).</p> <p>For insurance groups wishing to complete the 2019 year-end only, groups are to apply for permission via email request to <a href="mailto:RiskAnalytics@bma.bm">RiskAnalytics@bma.bm</a>.)</p> |  |  |
|--|--|--|--|

\*EBS – Economic Balance Sheet

\*\*GAAP – Generally Accepted Accounting Principles

\*\*\*Governance Structure (Schedule V(b)) insurers are to provide total assets, net assets, gross premiums written, and net premiums written on a unconsolidated basis for each entity.

### ***Purpose***

- A1.7 This document presents clear instructions for persons responsible for computing the required capital and surplus and for submitting the completed capital and solvency return, including the BSCR model, to the BMA.
- A1.8 The capital and solvency return contains diverse risk elements of an insurance group's operation and will likely require the participation of experienced individuals within the accounting, finance, and actuarial areas of the insurance group. In order to ensure accurate completion, designated insurers of the insurance group are highly advised to refer to this instruction handbook.

### ***Overview***

- A1.9 Forms 1, 2, and 8 and are published in the Insurance (Group Supervision) Rules 2011. The filing guidance relating to Form 1EBS (refer to Schedule XIV for format and guidance) and Schedules II, IIA, III, IIIA, IV, IVA, IVB, IVC, V, V(a), V(b) V(c), V(e), V(f), V(g), V(k), VI, VII, VIII, VIII(a), IX, X, XIA, XIB, XIC, XID, XII, XIII, XVI, XVII, XVIII, XIX, XX, XXI and operational risk is published in the Prudential Standard Rules. The electronic copy of Forms 1, 2, 8 and Form 1EBS, and Schedules II, IIA, III, IIIA, IV, IVA, IVB, IVC, V, V(a), V(b) V(c), V(e), V(f), V(g), V(k), VI, VII, VIII, VIII(a), IX, X, XIA, XIB, XIC, XID, XII, XIII, XVI, XVII, XVIII, XIX, XX, XXI and operational risk are included in the capital and solvency return and have been appropriately linked to the BSCR model, where applicable
- A1.10 Also included is an appendix containing a glossary of terms that is meant to clarify the meaning of any terms used within the capital and solvency return, as well as to provide guidance on reconciling totals.

### ***Changes to the BSCR Formula***



- A1.11 Periodically, changes to the BSCR formula may be necessary due to changes in the capital and solvency return, accounting requirements, and enhancements to the formula or to the capital factors. Any such changes will be communicated to the designated insurer of the insurance group in a timely fashion, in order to allow adequate time for designated insurer to collect any additional information that may be required.

***Work Papers and Supporting Documents***

- A1.12 Work papers and documents used to prepare the BSCR submission should be retained and kept available for examination and discussion with the BMA, should the need arise.

***Contact Person for Questions***

- A1.13 Questions pertaining to the content or meaning of any of the items in this report should be addressed to [riskanalytics@bma.bm](mailto:riskanalytics@bma.bm).

## A2. SUBMISSION

- A2.1 For the 2019 year-end and beyond, insurers may file only an **electronic version** if they submit via the ‘**submit**’ macro embedded in the BSCR model. Otherwise, **both** an **electronic version** and **printed version** of the capital and solvency return is required to be forwarded to the BMA on or before its specified filing date. Insurance Groups are advised to refer to the BSCR E-Filing Manual, available on the BMA website, for guidance on electronic filing. Insurance groups are also advised not to alter or modify the capital and solvency return or any part thereof.

### *Items*

- A2.2 Input Data — Input data in each form and schedule, applicable.
- A2.3 Submit — Submit the capital and solvency return by clicking the ‘SUBMIT’ button.

### *Additional Guidance*

- A2.i. If the designated insurer of the insurance group is having difficulty submitting the capital and solvency return following the above instructions, it is recommended to review the BSCR E-Filing Manual found on the Authority’s website: [www.bma.bm](http://www.bma.bm) > Document Center > Reporting Forms and Guidelines > Insurance
- A2.ii. If there are still issues with the submission, send an email to [riskanalytics@bma.bm](mailto:riskanalytics@bma.bm) with the capital and solvency return attached. If the capital and solvency return is too large to send via email (limited to 15MB), the Authority will advise a course of action.

### **A3. CONTENTS**

- A3.1 The Contents tab replaces the Index tab. The Contents tab has validation checks to various Forms/Schedules in the model as well as hyperlinks to each of the tabs in the model.
- A3.2 Insurance groups should review validation checks prior to submission and acknowledge any errors by selecting 'Confirm Message' as applicable. A comment to explain the validation check is to be included on the Submission tab.

### **A4. IMPORT**

- A4.1 The Import tab includes links to each of the input cells in the model.
- A4.2 Users of the BSCR model can either enter data via the Import tab or can manually enter data throughout the model.
- A4.3 Note that cells highlighted in blue are drop-down cells. White highlighted cells are numerical/text entry fields.

### **A5. EXPORT**

- A5.1 The Export tab includes links to each of the data cells in the model.
- A5.2 This function is useful if there is a need to re-enter data from an existing model to a new model. A user would use the data stored in the Export tab and copy to the Import tab.

## **A6. ATTACHMENTS**

- A6.1 Insurance groups can attach any necessary files through the Attachments tab, up to ten files for each category provided. When an attachment is provided, the insurance group is to include the Schedule and/or item the attachment references in the comment field. Note once attached, the file is embedded in the capital and solvency return and sent to the BMA when the model is transmitted using the 'Submit' macro found in the Submission tab. The BSCR E-Filing Manual provides guidance on how to attach, view and remove files.

### ***Additional Guidance***

#### **Attachments for Financial Statements and Financial Condition Report Reduced to one attachment**

- A6.i. Sections 1-3 for General Purpose Financial Statements and Financial Condition Report have been reduced from ten rows to one row. Further the Authority would like to advise of the following:
- a) General Purpose Financial Statements – registrants are expected to attach their audit report, financial statements and notes to the financial statements in one document;
  - b) Financial Condition Report – registrants should include this as required under section 3 of the Insurance (Public Disclosure) Rules 2015. Any additional document for this requirement is to be included in the 'Other Attachments' section.

## **A7. GROUP INFORMATION**

### ***Items***

- A7.1      Insurance Group Name — Input the name of the insurance group.
- A7.2      Name of the Parent Company — Input the name of the parent company which is the head of the group.
- A7.3      Place of Incorporation of Parent Company — Input the jurisdiction where the parent company is incorporated or licenced.
- A7.4      Designated Insurer Name — Input the name of the specified insurer, licenced in Bermuda, which is a member of the group.
- A7.5      Registration No. — Input the corresponding registration number of the designated insurer, as it appears in the designated insurer's Certificate of Registration.
- A7.6      Contact Person Information — Input the insurance group's contact person who will be the main conduit through which the BMA will make and respond to enquiries about the BSCR and related information. Note that the contact person also has the responsibility to ensure that all amounts reported in the group capital and solvency return respond to the group's statutory financial return, where appropriate.

## **A8. CAPITAL AND SOLVENCY RETURN DECLARATION**

A8.1 The capital and solvency return declaration should be signed and dated by two directors, one of which may be the chief executive, and either the chief risk officer or chief financial officer of the parent company. in

A8.2 Revoked.

## B. ADDITIONAL SUPPORTING SCHEDULES

- B1.1 Included in the capital and solvency return are the Cover Sheet and Solvency Certificate which is to be completed in its entirety. Nevertheless, the Financial Condition Report is not included in the model and this handbook provides guidance on the requirements that are to be included in the submitted.

### B2. COVER SHEET

#### *Background*

- B2.1 To provide the Authority with details of the insurance group's organisational structure and details to review the statutory statements, the Cover Sheet is to provide more additional information to better assess the insurance group.

#### *Items*

| Line Item |   | Description  |
|-----------|---|--|
| a         | Name of Insurance Group                         | Row (1) The name of the insurance group shall automatically populate based on the name entered in the Information Sheet tab.   |
| b         | Designated Insurer Contact Information          | Row (2) The name and address of the designated insurer and the contact person:   |
| c         | Competent Authorities Contact Information       | Row (3) The name and address of other competent authorities supervising other companies that are members of the insurance group:   |
| d         | Certificate of Registration Approved Conditions | Row (4) The Certificate of Registration Approved Conditions is to be entered based on the conditions stipulated on approved certificate of registration. This includes the start date, end date and condition description. |
| e         | Filing Period                                   | Row (5) The Filing Period Start Date is to be manually entered and the Period End Date shall automatically populate based on the date entered in the Information Sheet tab.  |
| f         | Nature of Business                              | Row (6) Confirmation whether the insurance business carried on is general business or Long-Term business or both; and  |

### **B3. SOLVENCY CERTIFICATE**

#### ***Background***

B3.1 To provide the Authority with approval from the directors that the information contained in the capital and solvency return have been reviewed and confirmed of the following items:

#### ***Items***

| Line Item |                                       | Description  |
|-----------|---------------------------------------|--|
| a         | Name of Insurance Group               | Row (1) The name of the insurance group (this information is automatically populate based on the name entered in the Group Information Sheet tab).   |
| b         | Statement Availability                | Row (2) whether or not the statements are available at the designated insurer's principal office in Bermuda pursuant to Rule 28 or, as the case may be, have been filed pursuant to Rules 23(9) and 24 to 27;  |
| c         | Regulation and Direction Compliance   | Row (3) whether or not the group has complied with every direction issued by the Authority under the Act, rules, any regulations or legislation pertaining to it;  |
| d         | Minimum Margin of Solvency            | Row (4) whether the group has complied with the Minimum Margin of Solvency in accordance with these Rules;   |
| e         | Statutory Capital and Surplus         | Row (5) whether the group has complied with the requirements of the available statutory capital and surplus in accordance with Rules 22(1) and 22(3);  |
| f         | Group Statutory Assets                | Row (6) the aggregate value of the group's assets as shown in the group statutory balance sheet for the relevant year;   |
| g (i)     | Group Statutory Assets Valuation      | Row (7) that the group statutory balance sheet assets value was determined in accordance with the requirements of the Act and of any applicable Rules pursuant to Rule 24(2);  |
| g (ii)    | Group Statutory Assets Valuation      | Row (8) that the value of the group's assets at the end of the relevant year was in the aggregate at least equal to the group statutory balance sheet assets value;  |
| h         | Group Statutory Capital & Liabilities | Row (9) whether in the opinion of those signing the certificate the aggregate amount of the group's liabilities at the end of the relevant year (after taking into account all prospective and contingent liabilities, but not liabilities in respect of share capital) is not more than the aggregate amount of the liabilities as shown in the group's statutory financial statements for that year; |



| Line Item |                                   | Description  |
|-----------|-----------------------------------|--|
| i         | Group Statutory Capital & Surplus | Row (10) the aggregate amount of the statutory capital and surplus as shown in the group statutory statement of capital and surplus for the relevant year; |
| j         | Currency Used                     | Row (11) whether the currency in which amounts in the group's statutory financial statements for the relevant year have been shown;                        |
| k         | Exchange Rate                     | Row (7) the rate of exchange used, in compliance with Rules 23(7), 24(3) and 26(3), for the purposes of any statement called for by these Rules.           |

a. Confirmation of Corrective Action

| Line Item |                                   | Description  |
|-----------|-----------------------------------|--|
| 3         | Confirmation of Corrective Action | Row (1) If any question in sub-paragraph (1)(b), (c), (d), (e), (f), (g) or (h) of this paragraph has been answered in the negative, whether or not the parent company has taken corrective action |

## **B4. FINANCIAL CONDITION REPORT**

### ***Background***

- B4.1 To assist with Bermuda being a jurisdiction committed to the principles of transparency to policyholders, beneficiaries and counterparties, the BMA has required Insurance Groups, Class 4, Class 3B, Class 3A, Class C, Class D and Class E insurers to submit a Financial Condition Report with details of inter alia; measures governing the business operations, corporate governance framework, solvency and financial performance of a commercial insurer.
- B4.2 The Financial Condition Report is an opportunity for an insurance group to describe its business to the public in relation to the insurance group's business model, whereby the public may make an informed assessment on whether the business is run in a prudent manner. The presentation of the Financial Condition Report is not templated by the BMA. Insurers are expected to prepare the Financial Condition Report in accordance with the requirements per the Insurance (Public Disclosure) Rules 2015.
- B4.3 A copy of the Financial Condition Report shall be published on the insurance group's website within 14 days of the date the report was filed with the BMA. If an insurance group does not have a website, the insurance group is to provide the public a copy of a Financial Condition Report within ten days of receipt of a request made in writing.

### ***Items***

- a) Business and Performance - particulars regarding the organisational structure, insurance business activities and financial performance

| Line Item | Description  |
|-----------|--|
| a         | Name of the insurance group;   |
| b         | Name and contact details of the group supervisor;  |
| c         | Name and contact details of the approved group auditor;  |
| d         | A description of the ownership details including proportion of ownership interest of the insurance group;                  |
| e         | A group structure chart detailing the group structure;   |
| f         | Insurance business written by business segment and geographical region by the insurance group during the reporting period; |

| Line Item | Description   |
|-----------|---|
| g         | Performance of investments by asset class and details on material income and expenses incurred by the insurance group during the reporting period and |
| h         | Any other material information.   |

b) Governance Structure - particulars of corporate governance, risk management and solvency self-assessment frameworks

| Line Item | Description   |
|-----------|---|
| a         | Parent Board and Senior Executive:<br>i. A description of the structure of the parent board of directors (board) and senior executive, the roles, responsibilities and segregation of these responsibilities                        |
| a         | ii. A description of remuneration policy and practices and performance-based criteria governing the parent board, senior executive and employees  |
| a         | iii. A description of the supplementary pension or early retirement schemes for members of the insurance group, the board and senior executive  |
| a         | iv. Any material transactions with shareholder controllers, persons who exercise significant influence, the parent board or senior executive  |
| b         | Fitness and Propriety Requirements:<br>i. A description of the fit and proper process in assessing the parent board and senior executive  |
| b         | ii. A description of the professional qualifications, skills, and expertise of the parent board and senior executives to carry out their functions  |
| c         | Risk Management and Solvency Self-Assessment:<br>i. A description of the insurance group's risk management process and procedures to effectively identify, measure, manage and report on risk exposures                             |
| c         | ii. A description of how the risk management and solvency self-assessment systems are implemented and integrated into the insurance group's operations; including strategic planning and organisational and decision-making process |
| c         | iii. A description of the relationship between the solvency self-assessment, solvency needs, and capital and risk management systems of the insurance group   |
| c         | iv. A description of the solvency self-assessment approval process including the level of oversight and independent verification by the parent board and senior executives  |
| d         | Internal Controls:<br>i. A description of the internal control system   |
| d         | ii. A description of how the compliance function of the insurance group is executed   |
| e         | Internal Audit - A description of how the internal audit function of the insurance group is implemented and how it maintains its independence and objectivity when conducting its functions   |

| Line Item | Description  |
|-----------|--|
| f         | Actuarial Function – A description of how the insurance group’s actuarial function is implemented                                      |
| g         | Outsourcing:<br>i. A description of the outsourcing policy and information on any key or important functions that have been outsourced |
| g         | ii. A description of material intra-group outsourcing  |
| h         | Any other material information   |

- c) Risk Profile - particulars on exposures on underwriting risk and market risk including off balance sheet exposures, credit risk, liquidity risk, operational risk and other material risks

| Line Item | Description   |
|-----------|---|
| a         | Material risks that the insurance group is exposed to, including how these risks are measured and any material changes that have occurred during the reporting period |
| b         | How risks of the insurance group are mitigated including the methods used and the process to monitor the effectiveness of these methods                               |
| c         | Material risk concentrations  |
| d         | How assets are invested by and on behalf of the insurance group in accordance with the prudent person principle as stated in paragraph 12(1)(a) of these Rules        |
| e         | The stress testing and sensitivity analysis to assess material risks, including the methods and assumptions used by the insurance group, and the outcomes             |
| f         | Any other material information  |

- d) Solvency Valuation - particulars of the valuation basis, methods and assumptions on the inputs used to determine solvency

| Line Item | Description  |
|-----------|--|
| a         | The valuation basis, assumptions and methods used to derive the value of each asset class  |
| b         | The valuation basis, assumptions and methods used to derive the value of technical provisions and the amount of the best estimate. The amount of the risk margin as well as the level of uncertainty to determine the value of the technical provisions should be included |

| Line Item | Description   |
|-----------|---|
| c         | A description of recoverables from reinsurance contracts, including Special Purpose Insurers (SPI) and other risk transfer mechanisms |
| d         | The valuation basis, assumptions and methods used to derive the value of other liabilities  |
| e         | Any other material information  |

e) Capital Management- particulars regarding an assessment of capital needs and regulatory capital requirements

| Line Item | Description   |
|-----------|---|
| a         | Eligible Capital:<br>i. A description of the capital management policy and process to determine capital needs for business planning, how capital is managed and any material changes during the reporting period      |
| a         | ii. A description of the eligible capital of the insurance group categorised by tiers in accordance with the Eligible Capital Rules   |
| a         | iii. A description of the eligible capital insurance group categorised by tiers, in accordance with the Eligible Capital Rules used to meet the ECR and the MSM defined in accordance with section (1) (1) of the Act |
| a         | iv. Confirmation that insurance group's eligible capital is subject to transitional arrangements as required under the Eligible Capital Rules   |
| a         | v. Identification of any factors of the insurance group affecting encumbrances availability and transferability of capital to meet the ECR  |
| a         | vi. Identification of ancillary capital instruments that have been approved by the Authority  |
| a         | vii. Identification of differences in shareholder's equity as stated in the financial statements versus available statutory capital and surplus   |
| b         | Regulatory Capital Requirements:<br>i. Identification of the amount of the insurance group ECR and MSM at the end of the reporting period   |
| b         | ii. Identification of any non-compliance by the insurance group with the MSM and the ECR  |
| b         | iii. A description of the amount and circumstances surrounding the insurance group's the non-compliance, the remedial measures taken and their effectiveness  |
| b         | iv. Where the non-compliance has not been resolved, a description of the amount of the non-compliance at the end of the reporting period  |
| c         | Approved Internal Capital Model Used to Derive the ECR:<br>i. A description of the purpose and scope of the business and risk areas where the Group BSCR Model is used  |

| Line Item | Description   |
|-----------|---|
| c         | ii. Where a partial internal model is used, a description of how it is integrated with the Group BSCR model                                       |
| c         | iii. A description of methods used in the Group BSCR Model to calculate the ECR   |
| c         | iv. A description of aggregation methodologies and diversification effects  |
| c         | v. A description of the main differences in the methods and assumptions used for the risk areas in the internal model versus the Group BSCR model |
| c         | vi. A description of the nature and suitability of the data used in the Group BSCR model  |
| c         | vii. Any other material information   |

f) Significant Event – particulars and explanations of a significant event

| Line Item | Description  |
|-----------|--|
| a         | A description of the significant event   |
| b         | Approximate date(s) or proposed timing of the significant event  |
| c         | Confirmation of how the significant event has impacted or will impact, any information provided in the most recent financial condition report filed with the Authority |
| d         | Any other material information   |

*Additional Guidance*

**Item (i)(g) Business and Performance – investment performance and material income and expenses**

B4.i. For item (i)(g) Business and Performance, the insurance group shall provide details of the investment performance for the reporting period only. Material income and expenses shall be for the reporting period only and include all activities of the insurance group (underwriting, investment, etc.).

## **B5. ASSETS QUALIFYING FOR RISK MITIGATING PURPOSES**

### ***Background***

- B5.1 In order to promote good risk management and increase risk sensitivity, the scope of risk mitigation in the BSCR is extended by allowing insurance groups to explicitly take into account their hedging programmes within market risk calculations, subject to certain rules and restrictions.
- B5.2 Credit for risk mitigating effect in the BSCR calculations is only allowed if the risk mitigation techniques fulfil a set of criteria set out in the next section.

### ***Instructions***

- B5.3 The calculation of the ECR will allow for the effects of risk mitigation techniques through a reduction in capital requirements commensurate with the extent of risk mitigation notwithstanding the provisions set in this section.
- B5.4 The ECR calculation for market risk is made on the basis of the assets and liabilities existing at the reference date of the ECR calculation and through the use of scenario and factor-based approaches; this design setting excludes by definition allowance for the full effect of dynamic hedging programmes which can only be applied appropriately in a context where capital charges are being stochastically calculated.
- B5.5 Internal capital models are allowed to be used in the context of the BSCR standard formula for the calculation of the variable annuity guarantees capital charge which, despite being part of the long term insurance risk module, is predominantly market risk driven; concomitantly in these cases insurance groups may take into full account the effect of their dynamic hedging programmes as long as they comply with the provisions set in paragraphs B5.6 and B5.9 below. In all other cases, the risk mitigating effect of dynamic hedging programmes will be subject to the provisions set in paragraphs B5.6–B5.8 and thus taken into account in a limited manner.
- B5.6 When calculating the ECR, insurance groups shall only take into account risk-mitigation where all of the following qualitative criteria are met:
- a) The contractual arrangements and transfer of risk are legally effective and enforceable in all relevant jurisdictions and there must be an effective transfer of risk to a third party;
  - b) The contractual arrangement ensures that the risk transfer is clearly defined
  - c) The insurance group has taken all appropriate steps to ensure the effectiveness of the arrangement and to address the risks related to that arrangement;
  - d) The insurance group is able to monitor the effectiveness of the arrangement and the related risks on an ongoing basis;

- e) The calculation of the ECR makes reasonable allowance for any basis risk effects due to changes in risk mitigation assumptions and relationships during a stress scenario and there is appropriate treatment of any corresponding risks embedded in the use of risk mitigation techniques (e.g. credit risk). These two effects should be separated;
- f) Providers of risk mitigation should have adequate credit quality (demonstrable through either adequate rating, capitalisation or collateralisation levels) to guarantee with appropriate certainty that the insurance group will receive the protection in the cases specified by the contracting parties;
- g) The insurance group has, in the event of a default, insolvency or bankruptcy of a counterparty or other credit event set out in the transaction documentation for the arrangement, a direct claim on that counterparty; and
- h) There is no double counting of risk-mitigation effects in technical provisions and in the calculation of the ECR or within the calculation of the ECR.

**B5.7** Only risk-mitigation techniques that are in force for at least the next 12 months and which meet the qualitative criteria set out in paragraph B5.6 shall be fully taken into account in the ECR. In all other cases, the effect of risk-mitigation techniques that are in force for a period shorter than 12 months and which meet the qualitative criteria set out in paragraph B5.6 shall be taken into account in the ECR in proportion to the length of time involved for the shorter of the full term of the risk exposure or the period that the risk-mitigation technique is in force.

**B5.8** Where contractual arrangements governing the risk-mitigation techniques will be in force for a period shorter than the next 12 months and the insurance group intends to replace that risk-mitigation technique at the time of its expiry with a similar arrangement, the risk-mitigation technique shall be fully taken into account in the ECR provided all of the following qualitative criteria are met:

- a) The insurance group has a written policy on the replacement of that risk-mitigation technique;
- b) The replacement of the risk-mitigation technique shall not take place more often than every month, except in duly justified circumstances which require prior approval from the Authority;
- c) The replacement of the risk-mitigation technique is not conditional on any future event, which is outside of the control of the insurance group. Where the replacement of the risk-mitigation technique is conditional on any future event, that is within the control of the insurance group, then the conditions should be clearly documented in the written policy referred to in point (a);
- d) The replacement of the risk-mitigation technique shall be realistic based on replacements undertaken previously by the insurance group and consistent with its current business practice and business strategy;
- e) The risk that the risk-mitigation technique cannot be replaced due to an absence of liquidity in the market is not material under different market conditions and



there is no material basis or operational risks compared to the risk mitigation effect;

- f) The risk that the cost of replacing the risk-mitigation technique increases during the following 12 months is reflected in the ECR by deducting it from the value attributed to the risk-mitigation technique;
- g) Any additional risk stemming from the risk mitigation arrangement (e.g. credit risk) is taken into account in the ECR;and
- h) The hedge effectiveness and any related risks are monitored on an ongoing basis.

**B5.9**

In the cases of insurance groups using internal capital models in the context of the BSCR standard formula for the calculation of the variable annuity guarantees capital charge, where portfolio rebalancing is being performed, the risk-mitigation effect shall be fully taken into account in the ECR provided all of the following qualitative criteria are met:

- a) The insurance group has a written policy on portfolio rebalancing;
- b) The portfolio rebalancing shall be realistic based on actions undertaken previously by the insurance group and consistent with its current business practice and business strategy;
- c) The risk that the portfolio rebalancing cannot be performed due to an absence of liquidity in the market is not material under different market conditions.
- d) The risk that the cost of the portfolio rebalancing increases during the following 12 months is reflected in the ECR;
- e) Any additional risk stemming from the portfolio rebalancing (e.g. credit risk) is taken into account in the ECR; and
- f) The hedge effectiveness and any related risks are monitored on an ongoing basis.

## **B6. MANAGEMENT ACTIONS**

### ***Background***

- B6.1 With the introduction of new shock-based capital charge calculations for certain risks in the BSCR standard formula, the use of management actions will be allowed under certain conditions (as set out in the next section).
- B6.2 Management actions are relevant for products where profits are shared with policyholders, for example participating or ‘with-profits’ products. This means that management actions, in the sense used here, are mainly relevant for long-term business only.
- B6.3 For BSCR purposes, allowable management actions will be confined to actions reducing or increasing liabilities for Future bonuses or other Discretionary Benefits (FDB).  
a) These include changes to profit sharing / bonuses / policyholder dividends / credited rates, but can also include actions such as changes in investment policy (e.g. the equity backing ratio) affecting FDB.
- B6.4 Given that the effect of management actions is considered separately for each risk in the modular BSCR standard formula, there is a risk of double counting the credit for management actions when the individual capital charges are aggregated (through the correlation matrices). For this reason, a cap on the overall credit must be included.
- B6.5 The natural cap for the credit for management actions is the total amount of (best-estimate liabilities held for) future discretionary benefits.  
a) The most an insurance group can do to reduce its discretionary liabilities is to reduce the profit sharing – policyholder dividends, credited rate – to zero (in all future scenarios), which corresponds to FDB going to zero.

### ***Instructions***

- B6.6 Management actions are confined to actions reducing or increasing liabilities for future bonuses or other discretionary benefits.
- B6.7 Management actions must comply with all the requirements of paragraph 196 of the Guidance Notes for Commercial Insurers and Groups Statutory Reporting Regime (30th November 2016).
- B6.8 Given the modular structure of the BSCR standard formula, management actions are to be considered in each applicable risk calculation separately.
- B6.9 Management actions can be reflected in the shock-based components of the BSCR standard formula and in the variable annuity guarantees capital charges (when an

internal capital model is used). Management actions shall not be taken into account in the factor-based components of the BSCR standard formula. The exception the duration effective durations for liabilities.

**B6.10** The shock-based components of the BSCR standard formula are based on the impact of instantaneous stresses (equity risk, interest rate and liquidity risk calculated under the alternative approach, and currency risk), and insurance groups shall not take credit for future management actions at the time the stress occurs (i.e. during the stress), due to the instantaneous nature of the stresses. Nevertheless, future management actions may be taken into account after the instantaneous shocks as a response to the shocks.

**B6.11** If management actions are used, the insurance group needs to ensure that the effects of specific management actions are not effectively counted multiple times when the different scenario components are aggregated into the total capital requirement.

***Loss-absorbing Capacity of Future Bonuses and Other Discretionary Benefits***

**B6.12** To prevent double-counting, the capital requirement for each risk should be calculated both gross and net of the loss-absorbing capacity of technical provisions. Therefore, the applicable capital charges will be calculated with (net of) and without (gross of) management actions. This will allow calculating the capital requirement with management actions (net BSCR) and without management actions (gross BSCR), by aggregating the respective (net, gross) component capital requirements using the applicable correlation matrices.

**B6.13** The *gross* capital requirement for each applicable risk is obtained as the decrease in the Net Asset Value (NAV) as a result of the shock, where the change in liabilities is calculated by comparing the after-shock gross best estimate liabilities to the base case best estimate liabilities. The gross capital requirement cannot be less than zero.

**B6.14** The *net* capital requirement for each applicable risk is obtained as the decrease in the NAV as a result of the shock, where the change in liabilities is calculated by comparing the after-shock net best estimate liabilities to the base case best estimate liabilities. The net capital requirement cannot be less than zero.

**B6.15** The *gross* BSCR (post diversification) ( $BSCR^{div}$ ) is calculated by aggregating the gross capital requirements using the relevant correlation matrices.

**B6.16** The *net* BSCR (post diversification) ( $nBSCR^{div}$ ) is calculated by aggregating the net capital requirements using the relevant correlation matrices.

**B6.17** The adjustment to the ECR for the loss-absorbing capacity of technical provisions is then

$$Adj_{TP} = -\max(\min(BSCR^{div} - nBSCR^{div}, FDB), 0)$$

Where FDB is the net present value of future bonuses or other discretionary benefits corresponding to the best estimate calculation. The FDB amount is used as a cap on the overall credit allowed for in the capital requirement calculation.

- B6.18 The gross capital requirements per risk shall be calculated by keeping the future discretionary benefits unchanged at the best estimate (base scenario) level.
- B6.19 The net capital requirements per risk shall be calculated by allowing the future discretionary benefits to change as a result of a shock.
- B6.20 For those risks which are calculated using a factor-based approach, the net BSCR is defined to be equal to the gross BSCR (except for the duration-based approach to interest rate risk, if the durations are calculated by taking management actions into account).
- B6.21 The procedure as described above requires calculating the relevant capital charges twice: with and without management actions. Typically, this would mean that the insurance group needs to run two model runs per relevant capital charge. Nevertheless, as this may, in some cases significantly increase the workload and/or the time needed to produce the required numbers, a simplified way to calculate the ‘gross’ charges, as described below, may be used. This approach requires only one set of model runs (base scenario + ‘net’ runs).
- a) Obtain the value of guaranteed<sup>1</sup> benefits and future discretionary benefits, separately, in the base scenario<sup>2</sup>.
  - b) Calculate guaranteed benefits and future discretionary benefits, with management actions, in each applicable shock. This gives the net best estimate liabilities in the shock scenarios.
  - c) To derive the gross best estimate liabilities needed for the gross capital requirement calculations, add future discretionary benefits from the base scenario to the guaranteed benefits from the shock scenarios to obtain gross best estimate liabilities in the shock scenarios.

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<sup>1</sup> “Guaranteed” benefits here refers to those contractual benefits that the insurance group does not have the ability to change at its discretion. In particular, it is taken to mean all benefits other than future discretionary benefits.

<sup>2</sup> Where “baseline” level of management actions is assumed in calculating the best estimate liability for future discretionary benefits.

### ***Additional Guidance***

- B6.i. Regarding the restriction of management actions to those actions affecting liabilities for future discretionary benefits, it is noted that premium increases<sup>3</sup> or expense reductions are out of the scope of allowed management actions.
- B6.ii. With regards to paragraph B6.10, it is noted that management actions may be taken immediately after the (instantaneous) stress has happened (subject to reflecting in the modeling realistic time required to implement any management action). The stresses are assumed to happen ‘overnight’, and management actions can be taken immediately on ‘day 1’ afterwards.
- B6.iii. Both increases and decreases in future discretionary benefits as a result of shocks should be modelled. In particular, the liability for future discretionary benefits may increase as a result of certain shocks: For example, in the interest rate up shock the effect of higher future (reinvestment) rates may exceed any negative time-0 effect on the values of fixed-income assets, leading to more profit sharing.

### **Guidance – BSCR Model**

- B6.iv. Where applicable, the risk charges per module in the BSCR model are calculated both with and without management actions. This concerns principally those market risks that are calculated using shocks.
- B6.v. The Schedules feeding the relevant risk calculations contain input fields for entering after shock values for best estimate liabilities both with and without management actions.
- B6.vi. If no management actions are assumed, or if management actions do not affect a particular line, the ‘with’ value should be set equal to the ‘without’ value (where the latter is to be always calculated).
- B6.vii. The effect of management actions on the ECR is calculated by comparing the ‘Gross BSCR’ to the ‘Net BSCR’, where the former is derived by aggregating individual risk charges without management actions, and the latter is derived by aggregating individual risk charges with management actions (using the

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<sup>3</sup> The overall significance of premium increases is, in any case, mitigated by the fact that if the insurance group has the possibility to change premium at a certain point, then in most cases the cash flows after the said point will fall outside of the contract boundaries. Hence premium increases would only be relevant where the insurance group does have an ability to change the premiums, but only in a very limited way.

relevant correlation matrices). This is completed on the Summary tab of the BSCR model.

- B6.viii. Nevertheless, to avoid double- counting the same management actions in multiple separate risk modules, a cap on the overall credit for management actions needs to be imposed. The cap is equal to the initial reserve for FDB, which needs to be entered in cell M118 on the Summary tab.
- B6.ix. The overall adjustment for management actions, subject to the cap, is then automatically calculated in cell M119 of the Summary tab, and gets deducted from the final BSCR (in cell M63).

## **B7. LOOK-THROUGH**

### ***Background***

- B7.1 Previously look-through was allowed in the BSCR in concentration risk calculation. To more properly assess the risks of fund-type investments and similar assets (and liabilities) the look-through approach is extended to market risk calculated under a shock approach (equity, interest rate and currency risks). This means looking through funds to the underlying investments, and considering each of the underlying assets individually in appropriate risk calculation(s).
- B7.2 A full look-through of underlying assets should be used as a default option. If this is not achievable, then a number of partial look-through options are to be considered. As set out in the next section, these options form the following ladder:
- a) Full look-through;
  - b) Partial look-through based on target asset allocation;
  - c) Partial look-through based on investment limits; and
  - d) No look-through – capital charge for other equities/other assets used.

### ***Instructions***

- B7.3 In order to properly assess the risks inherent in collective investment vehicles, other investments packaged as funds, and other types of assets and liabilities (as defined below), each of the assets underlying them shall be considered individually (the look-through approach) in the BSCR calculation.
- B7.4 The scope of the look-through covers the following:
- a) Collective investment vehicles and other investments packaged as funds, including related undertakings used as investment vehicles;
  - b) Segregated accounts assets and liabilities;
  - c) Deposit assets and liabilities;
  - d) Other sundry assets and liabilities; and
  - e) Derivatives.
- B7.5 The look-through approach applies to market risk calculated under a shock approach (equity, interest rate and currency risks) and concentration risk calculations. It also applies to fund-type investments (as defined in B7.4a) within other risk calculations; for example, bond funds in fixed-income risk calculation.
- a) Look-through will be allowed for equity exposures classified as 'strategic holdings' or 'duration based' with underlying individual assets getting the 20% (strategic holdings, duration based) equity charge each.

- B7.6 The look-through is to be based on the current underlying assets as of the BSCR valuation date (typically year-end). The valuation of assets and liabilities subject to application of the look through must be consistent with the EBS rules.
- B7.7 Where the full look-through approach cannot be applied to collective investment vehicles or other investments packaged as funds, the capital requirement may be calculated based on the target underlying asset allocation of the vehicle or fund, provided that such a target allocation is available at a level of granularity necessary for the calculation, and the underlying assets are managed strictly according to the target allocation.
- B7.8 Where conditions of paragraph B7.7 are not fulfilled (i.e., a target allocation does not exist or it cannot be determined and the assets are managed strictly according to the target allocation), the capital requirement may be calculated by assuming that the vehicle or fund first invests to the maximum extent allowed under its investment limits in the asset class with the highest capital charge. It can then continue to make investments in descending order until the maximum total investment level is reached. This approach requires that such allocation limits exist.
- B7.9 Where no look-through is possible and neither the target-based approach of paragraph B7.7 nor the limit-based approach of paragraph B7.8 can be applied, the whole investment shall be treated as an equity holding of type ‘Other’ for capital charge purposes.
- B7.10 Insurance groups should perform a sufficient number of iterations of the look-through approach, where appropriate (e.g., in the case of fund of funds), to capture all material risk adequately.

#### ***Additional Guidance***

- B7.i. To illustrate the application of the limit-based approach of paragraph B7.8, consider the following hypothetical example: For a combination fund having allocation limits of 50-80% to equity and 20-50% to investment grade fixed income, with equity sub-limits of 50-100% to European Economic Area (EEA) equities and 0-50% to Eastern European (non-EEA) equities, the overall allocation would be considered to be 40% to non-EEA equities, 40% to EEA equities, and 20% to fixed income with rating BBB- to produce the most conservative capital charge consistent with the limits.
- B7.ii. Exactly as is for directly held investments, instruments resulting from look-through may need to be considered in several risk calculations if the instruments’ price is exposed to several sources of risk. For example, convertible bonds are typically exposed to interest rate, credit (spread) and



equity risk, and would typically need to be included under all three risk calculations (i.e., interest rate, fixed income, and equity).

- B7.iii. As set out in B7.4, related undertakings used as investment vehicles must be looked through and the assets underlying them must be considered individually. In particular, there is no economic difference in the risk of positions held directly on the balance sheet versus holding the same assets in a separate investment company instead. Therefore, the treatment and resulting capital charges should be the same in both cases.
- B7.iv. In the case of long-short funds or leveraged funds, shocks (capital charges) cannot simply be applied to the NAV of the fund; instead, the increased exposure caused by leverage must be taken into account.
- a) In the case of leveraged funds, where the leverage is implemented (e.g., by borrowing (instead of short sales)), the capital charge/shock needs to be applied to the gross exposure; and
  - b) In the case of long-short funds, only short positions that qualify as risk-mitigating under the BSCR rules can be ‘netted’ against long positions (as described below). Consider the two extremes (i.e., all shorts qualifying versus none qualifying). If none of the short positions qualify as risk mitigating, only the long positions are shocked (and the short positions ignored); whereas if all of the short positions qualify as risk mitigating, both the long and the short positions are shocked (separately) and the resulting changes in values summed, so that the short positions provide an offset to the longs. In the former case, the gross long exposure is considered, while in the latter case the calculation is effectively on a net basis (however, the longs and shorts are shocked separately and then added, instead of shocking the net position). If part of the short positions qualify (and part do not), then only the qualifying short positions are shocked and, therefore, provide some offset to the longs, in addition to shocking all of the long positions.

### ***Guidance – BSCR Model***

- B7.v. When filling in Schedules feeding various risk calculations, the line items and the associated market values entered should already be after look-through. That is, the look-through of investments (necessarily) needs to be done outside the BSCR model, and the resulting numbers entered in the Schedules.
- B7.vi. If investments are looked-through, the amounts shown in different risk calculations do not match the balance sheet classifications any more.
- a) As a simple example, consider a mixed mutual fund with a market value of \$100, consisting of 60% equities and 40% corporate bonds. Assume it is originally

classified under equity in the balance sheet (line 2.(c)iii.) and is the only investment. After the look-through, \$40 would be entered in Schedule IIB (EBS) under corporate bonds and \$60 under listed equity securities in developed markets. This means that the balance sheet shows equity investments of \$100, but in the equity risk calculation the amount of equities is only \$60, corresponding to the true exposure after the look-through. Similarly, the balance sheet does not show fixed income exposure, but the fixed income risk calculation has bonds worth \$40 resulting from the look-through.

- B7.vii. An ‘Investment Reconciliation’ tab is included in the BSCR model to do a reconciliation between the balance sheet (Form 1EBS) amounts and the amounts in Schedules IIB-IIF feeding the risk calculations on the one hand; and reconciliation between Schedules IIB-IIF and the risk calculations (equity, interest rate risk) on the other hand.
- B7.viii. To illustrate the investment reconciliation tab, consider the example of paragraph B7.vi above.
- a) The opening balance on line 1 of the schedule (line 10 in the spreadsheet) would show the values from the balance sheet: \$0 in interest-rate sensitive investments (cell G10), and \$100 in equity sensitive investments (cell H10).
  - b) The adjustments for look-through could be done in either of two ways:
    - a) Entering the net adjustment directly. This would involve subtracting exposure of \$40 from equity (i.e., entering -\$40 to cell H13) and adding the \$40 to bonds (i.e. entering \$40 to cell G12).
    - b) Entering full amounts. Under this alternative, first indicate under which category the investment being looked-through was classified in the balance sheet. In the case of the example, the whole \$100 fund investment was under equity in the balance sheet; hence \$100 would be entered in cell F13 (balance sheet amounts reported under equities). Nevertheless, after looking through, the actual equity exposure was only \$60; this amount would be entered into cell H13. The remaining \$40, corresponding to bonds, would be entered into cell G12. Entering the original balance sheet amounts under columns E and F makes the reconciliation formula remove these amounts from the opening exposure, and then add the actual values resulting from the look-through back. In this example, the \$100 reported originally under equity in balance sheet is first removed from equity. Then only the actual equity exposure resulting from look-through (\$60) is added back to equity.
  - c) In either case, the final balances on line 18 of the schedule (line 27 of the spreadsheet) will show \$40 of interest-rate sensitive investments (in column G) and \$60 of equity-sensitive investments (in column H). These should match the amounts reported in Schedule IIB in the Schedule’s fixed income and equity parts.

## **B8. DEFINITIONS**

- B8.1 Developed markets** - are defined as means regulated markets in countries that are members of the Organisation for Economic Co-operation and Development (OECD) or the European Economic Area (EEA), or in Hong Kong or Singapore
- B8.2 Duration** - are defined as equity securities listed on developed markets (refer to section B8.1), held by long-term insurers to cover retirement products where:
- a) All assets and liabilities corresponding to the business are ring-fenced (Refer to section B8.5) without any possibility of transfer.
  - b) The average duration of the liabilities corresponding to the business held by the insurer exceeds an average of 12 years.
  - c) The equity investments backing the liability are type 1 equity exposures, equities listed on developed markets or preferred shares (PS 6 to PS 8).
- B8.3 Infrastructure investments** - are defined as “investment in an infrastructure project entity that meets all of the following criteria”:
- a) The infrastructure project entity can meet its financial obligations under sustained stresses that are relevant for the risk of the project.
  - b) The cash flows that the infrastructure project entity generates for equity investors are predictable.
  - (i) For the purposes of this paragraph, the cash flows generated for debt providers and equity investors shall not be considered predictable unless all except an immaterial part of the revenues satisfies the following conditions:
    - 1) One of the following criteria is met:
      - (a) The revenues are availability-based. That is, the revenues consist primarily of fixed periodic payments, usually from a public sector authority, and are based on the availability of project facilities for use as specified in the contract
      - (b) The revenues are subject to rate-of-return regulation
      - (c) The revenues are subject to a take-or-pay contract
      - (d) The level of output or the usage and the price shall independently meet one of the following criteria:
        - i. It is regulated;
        - ii. It is contractually fixed; or
        - iii. It is sufficiently predictable as a result of low-demand risk.
    - 2) Where the revenues of the infrastructure project entity are not funded by payments from a large number of users, the party which agrees to purchase the goods or services provided by the infrastructure project entity shall be one of the following:
      - (a) Central banks or governments, multilateral development banks or international organisations as established in instructions issued by the Authority

- (b) A regional government or local authority as established in instructions issued by the Authority
  - (c) An entity with a BSCR Credit Rating of at least 4
  - (d) An entity that is replaceable without a significant change in the level and timing of revenues
- c) The terms and conditions relating to matters such as the infrastructure project assets and infrastructure project entity are governed by a contract [which specifies the laws of the country under which it is governed] that provides equity investors with a high degree of protection, including the following:
  - (i) Where the revenues of the infrastructure project entity are not funded by payments from a large number of users, the contractual framework shall include provisions that effectively protect equity investors against losses resulting from the termination of the project by the party which agrees to purchase the goods or services provided by the infrastructure project entity; and
  - (ii) The infrastructure project entity has sufficient reserve funds or other financial arrangements to cover the contingency funding and working capital requirements of the project.
- d) The infrastructure assets and infrastructure project entity are located in Bermuda or in an OECD member country.
- e) Where the infrastructure project entity is in the construction phase the following criteria shall be fulfilled by the equity investor, or where there is more than one equity investor, the following criteria shall be fulfilled by all of the equity investors as a whole:
  - (i) The equity investors have a history of successfully overseeing infrastructure projects and the relevant expertise to oversee such projects;
  - (ii) The equity investors have a low risk of insolvency, or there is a low risk of material losses for the infrastructure project entity as a result of their insolvency; and
  - (iii) The equity investors are incentivised to protect the interests of investors.
- f) The infrastructure project entity has established safeguards to ensure the completion of the project according to the agreed specification, budget or completion date.
- g) Where operating risks are material, they are properly managed.
- h) The infrastructure project entity uses tested technology and design.
- i) The capital structure of the infrastructure project entity allows it to service its debt.
- j) The refinancing risk for the infrastructure project entity is low.
- k) The infrastructure project entity uses derivatives only for risk-mitigation purposes.

Infrastructure project entity – refers to an entity which is not permitted to perform any other function other than owning, financing, developing or operating infrastructure assets and is used as the primary source to facilitate payments to debt providers and equity investors out of the income generated by such assets.

Infrastructure assets – refers to physical structures or facilities, systems and networks that provide or support essential public services.

B8.4 **Qualifying unlisted equity investments** – refers to unlisted equity investments that have risk characteristics similar to listed Type 1 equities, and may be classified as Type 1 equities under the category ‘Listed equity securities in developed markets’ with the associated lower capital charge. ‘Qualified unlisted equity investments’ are defined as:

- a) Direct investments in the equity of unlisted companies; or
- b) Equity investments in unlisted portfolio companies resulting from the look-through of private equity funds or private equity funds of funds;  
where the investments fulfill all of the following conditions:

(i) Criteria on (underlying) equity investments:

- 1) Investments are in the common equity of companies that are unlisted;
- 2) The companies are established in, derive a majority of their revenues from, and have the majority of the staff that they employ located in, eligible countries. An eligible country here is defined as Bermuda or a country such that, if the company were listed in the stock exchange of the country, the listed equity of the company would qualify as Type 1 equity as set out in these instructions; and
- 3) The companies have been larger than small-sized enterprises in the last three years.
  - (a) For the purposes of this paragraph, a ‘small-sized enterprise’ is defined as an enterprise which employs fewer than 50 persons and whose annual turnover and/or annual balance sheet total does not exceed USD 10 million.

(ii) Criteria on the vehicle (only for fund-type investments)

- 1) The fund is closed-end;
- 2) The fund does not use leverage, with the following exceptions which are allowed:
  - (a) Borrowing arrangements entered into if these are temporary in nature and are fully covered by contractual capital commitments from investors in the fund
  - (b) Derivative instruments used for currency hedging purposes that do not add any incremental exposure, leverage or other risks
- 3) The fund meets the following requirements:
  - (a) The fund invests in unlisted companies, listed companies that are to become unlisted as a result of the investment made by the fund or listed companies as the temporary consequence of exiting the investment
  - (b) The investment strategy includes the intention to remain invested in the underlying companies for a number of years
  - (c) The fund manager has the power to appoint a director to the boards of the underlying companies and takes an active role in the company’s governance with the aim to bring about a significant development or transformation
- 4) The insurance group has all the information necessary to assess the fund manager’s performance (e.g., profit and loss, cash flows and profits of the

portfolio companies at a meaningful level of aggregation) and continues to get the information on a timely basis; and

- 5) The insurance group invests through several independent fund managers to avoid undue concentration.

(iii) Criteria on own risk management

- 1) Fund-type investments: the following requirements should be met:

- (a) The insurance group computes the portfolio beta whenever BSCR is calculated
- (b) The insurance group follows a due diligence process prior to investing in the fund, including but not limited to:
  - i. Qualitative and quantitative analysis of the companies in which the manager has invested with its prior funds
  - ii. Obtaining information on how the fund is managed and the processes followed before investing
- (c) The insurance group assesses the fitness of the fund manager on an on-going basis.
- (d) The insurance group benchmarks the performance of the fund against comparable funds.
- (e) There are regular and reliable reporting lines between the fund manager and the insurance group.
- (f) The insurance group is able to challenge the investment decisions made by the fund manager (this implies that the fund manager provides sufficient information on the underlying assets).
- (g) The insurance group verifies that the fund manager regularly interacts with the management teams of the companies in which the fund invests.

- 2) Direct investments: the following requirements should be met:

- (a) The insurance group computes the beta whenever BSCR is calculated.

(iv) Similarity criterion

- 1) The approach can only be applied to portfolios where any equity investment does not represent more than 10 % of the portfolio value.
- 2) The approach cannot be applied to financial companies.
- 3) The beta of the unlisted equity portfolio is determined via the following steps:
  - i. The hypothetical beta for each individual unlisted equity investment is calculated using the function set out below.
  - ii. The portfolio beta is calculated as the average of the individual betas weighted by the book values of the equity investments.
- 4) The beta for direct unlisted equity investments is calculated in the same way as the beta for individual portfolio companies above.

- 5) The similarity criterion is met if the beta of the portfolio or direct investment does not exceed a cut-off value of 0.80.
- 6) The beta for an individual unlisted equity investment is calculated with the following formula:  $\text{beta} = 0.9478 - 0.34\% * \text{AvgGrossMargin} + 0.0139 * \text{TotalDebt} / \text{AvgCFO} - 0.15\% * \text{AvgROE}$ ; where AvgGrossMargin = Average Gross Margin, TotalDebt = Total Debt, AvgCFO = Average Cash Flow from Operations, AvgRoe = Average Return on Common Equity. All the numbers should be entered as percentages/decimals multiplied by 100 (e.g., an ROE figure of 15.5% (i.e., 0.155 in decimal form)) would be entered as '15.5' in the formula; and
- 7) In the above formula, 'Avg' means the average of the annual figures over the last five financial years. If this information is unavailable, the value of the end of the last financial year must be used.

The value of unlisted equity investments to which the lower capital charge is applied shall not exceed 5% of the market value of all investments.

**B8.5 Ring-fenced** shall be defined as assets and liabilities that:

- a) Are managed and organised separately from other long-term businesses of the long-term insurer;
- b) Are recorded as a separate (internal) financial reporting segment within the long-term insurer's general account; and
- c) Have sufficient general account capital allocated to satisfy BSCR requirements on a stand-alone basis.

**B8.6 Selected Mutual funds** – is defined as units or shares of alternative investment funds authorised as European Long-Term Investment Funds in accordance with Regulation (EU) 2015/760 of 29 April 2015, or units or shares of collective investment undertakings which are qualifying social entrepreneurship funds in accordance with article 3(b) of Regulation (EU) 346/2013 of 17 April 2013 or units or shares of collective investment undertakings which are qualifying venture capital funds as referred to in Article 3(b) of Regulation (EU) 345/2013 of 17 April 2013, and units or shares of closed-ended and unleveraged alternative investment funds where those alternative investment funds are established in the European Union or, if they are not established in the European Union, they are marketed in the European Union according to Articles 35 or 40 of Directive 2011/61/EU of 8 June 2011, as well as other similarly purposed investment funds approved by the Authority.

**B8.7 Strategic holdings** – A qualifying strategic holding must fulfil all of the following criteria:



- a) The investing company holds at least 20 % of voting rights or share capital in the investment or is able to demonstrate it has significant influence (as defined by the applicable GAAP) over the investment;
- b) The value of the equity investment is likely to be materially less volatile than the value of other equities as a result of both the nature of the investment and the influence exercised by the participating company; and
- c) The nature of the investment is strategic, taking into account:
  - (i) The existence of a clear decisive strategy to continue holding participation for a long period;
  - (ii) The consistency of such strategy with the main policies guiding or limiting the actions of the participating company; and where the company is part of a group, the consistency of such strategy with the main policies guiding or limiting the actions of the group;
  - (iii) The ability of the company to continue holding the participation;
  - (iv) The existence of a durable link.



## C.STATUTORY STATEMENTS AND BSCR SCHEDULES

### C1. FORMS 1, 2, 8 AND FORM 1EBS

#### *Background*

- C1.1 The statutory balance sheet (Form 1), statutory statement of income (Form 2), and statutory statement of capital and surplus (Form 8) shall be completed by the insurance group in accordance with the filing guidance relating to these Forms found in the [Insurance \(Group Supervision\) Rules 2011](#).
- C1.2 Additionally, the designated insurer of the insurance group must ensure that amounts reported in these forms correspond to the general purpose financial statements less prudential filters such as prepaid expenses, intangible assets, and goodwill, where appropriate.
- C1.3 The Economic Balance Sheet (Form 1EBS) shall be completed by the designated insurer of the insurance group in accordance with [the Insurance \(Prudential Standard\) \(Insurance Group Solvency Requirement\) Rules 2011](#).

#### *Additional Guidance*

##### **Figures are to be reported in thousand units ('000s)**

- C1.i. Although the insurance group does not need to prepare its financial statements in thousands units, the Authority requires insurance group to report its statutory financial statements and economic balance sheet in thousands as this impacts the capital charges calculated in the BSCR model. The insurance group may attach its Statutory Financial Return under 'Other Attachments' to provide the BMA with a more accurate financial position.

##### **Future operating lease payments**

- C1.ii. For the 2019 year-end and beyond, insurers that have future operating lease payments are to gross up their balance sheet for the right of use assets and a lease liability equivalent to the discounted value of future payments under an operating lease **only if the underlying assets being leased are tangible assets.**
- Further in the Schedule V(e) stress test scenarios, lease liability should be included in the following scenarios:
- Interest Rate Stress Scenario;
  - Expected Inflation Stress Scenario;
  - Foreign Exchange stress (where relevant);

Insurers are to report the right of use assets on Form 1SFS and 1EBS as ‘Other Sundry Assets’ and on Schedule IIF ‘Other Sundry Assets and Liabilities’ on Line 28 ‘Other Equities / Other Assets.’

**Technical Provision Calculation – Risk Margin calculation**

- C1.iii. For reporting periods where the financial year-end falls within the BSCR transitional period, insurers are to determine the risk margin using projected future BSCRs that take into account the run-off of the transitional rules. That is, the risk margin should be determined by projecting both the old-basis BSCRs and the new-basis BSCRs into future, and applying the appropriate transitional weights at each future year-end within the projection to calculate the future transitional BSCRs that are then used in the Risk Margin calculation. After the transitional period ends in the projection, the new-basis BSCRs are to be used.

## **C2. SCHEDULE OF FIXED INCOME AND EQUITY INVESTMENTS BY BSCR RATING (SCHEDULE II)**

### ***Background***

- C2.1 The schedule of fixed income and equity investments by BSCR rating (Schedule II), provides a breakdown of an insurance group's bonds and debentures and equity investments by both investment categories (Corporate & Sovereign Bonds, Residential Mortgage-Backed Securities, Commercial Mortgage-Backed Securities/Asset-Backed Securities and Bond Mutual Funds) and BSCR Ratings (Ratings 0-8).
- C2.2 This schedule applies a capital charge based on the type of category and rating of the security held, which is aggregated in the fixed income and equity risk tab. Further this information provides the BMA with the type and quality of investments held for assessing the group's market risk. It is noted that the balances reported on this schedule also serves as a proxy of the group's liquidity position when assessed with the Schedule of Funds Held by Ceding Reinsurers in Segregated Accounts / Trusts by BSCR Rating (Schedule IIA), and Interest Rate/Liquidly Risk Charge.

### ***Items***

- C2.3 The Schedule is broken into three separate sections for which the total of each should correspond to a specific balance reported in Form 1EBS and Form 1 for the relevant year:
- a) Quoted and unquoted bonds and debentures – Line 10, Column (9) 'Total' corresponds to Form 1EBS and Form 1, Line 2(b) and 3(b);
  - b) Quoted and unquoted equities – Line 21, Column (9) 'Total' corresponds to Form 1EBS and Form 1, Line 2(d) and 3(d); and
  - c) Mortgage loans – Line 26, Column (1) 'Total' corresponds to Form 1EBS and Form 1, Line 5(c).

### ***Instructions Affecting Schedule II***

- C2.3a Fixed income investments, both quoted and unquoted, shall be categorised into corporate bonds and sovereign bonds, residential mortgage-backed securities, commercial mortgage-backed securities/asset-backed securities, and bond mutual funds and classified by BSCR rating;
- C2.3b Equity investments, both quoted and unquoted, shall be categorised into common stock, preferred stock and equity mutual funds;
- C2.3c Preferred stock shall be classified by BSCR rating;

- C2.3d Sovereign debt issued by a country in its own currency that is rated AA- or better shall be classified under BSCR rating 0 while all other sovereign bonds shall be classified in a similar manner as corporate bonds;
- C2.3e Debt issued by government-owned and related entities that were explicitly guaranteed by that government, with the exception of mortgage-backed securities, shall be assigned a BSCR rating of 0, provided that the country is rated AA- or better and the debt is in the local currency of the country and otherwise classified in a similar manner as corporate bonds; and
- C2.3f Bond mutual funds shall be classified based on the underlying bond ratings as advised by the fund manager; equity mutual funds shall be classified in a similar manner as direct equity investments;
- C2.3g Money market funds shall be classified by the underlying credit security based on the BSCR rating prescribed in Schedule XIX.

#### *BSCR Ratings*

- C2.3h The following process will apply to determine the BSCR rating classifications:
- a) Use the lowest BSCR rating comparable to the ratings of S&P, Moody's, Fitch and AM Best.
  - b) Insurers may select additional BMA named rating agencies to use, from those included in the table in the next paragraph, subject to the following:
    - (i) The additional BMA named rating agencies are Dominion Bond Rating Service, Egan Jones Rating Company, Japan Credit Rating Agency, Kroll Bond Rating Agency, and Morningstar Credit Ratings;
    - (ii) Insurers must document the selection process of credit rating agencies;
    - (iii) Insurers must use the selected rating agencies and their ratings in a consistent manner over time. There must be a documented process for making any changes to the list of selected rating agencies and how ratings are selected;
    - (iv) The selection process and its outcome must be approved by senior management; and
    - (v) The lowest BSCR rating comparable to the ratings of all the selected rating agencies, including the rating agencies from step (a), is used.
  - c) For any fixed income instruments for which a credit rating is not available from any of the rating agencies named in step (a) or step (b) (as per the insurer's selection), the insurer may elect to either leave the assets as unrated (i.e. BSCR

rating 8) or obtain the BSCR rating from the National Association of Insurance Commissioners (NAIC) Securities Valuation Office (SVO) rating.

- C2.3i The table below contains, for each credit rating agency, the rating categories for which their ratings are allowed for BSCR purposes (marked with 'X'). Additionally, the NAIC SVO ratings may be applied for otherwise unrated assets in accordance with the previous paragraph.

| Credit Rating Agency          | Principal Office | Financial institutions, brokers and dealers | Insurance companies | Corporate issuers | Issuers of asset-backed securities | Government securities, municipal securities, foreign government securities |
|-------------------------------|------------------|---|---------------------|-------------------|------------------------------------|--|
| Moody's Investor's Service*   | U.S.             | X   | X                   | X                 | X                                  | X  |
| Standard and Poor's*          | U.S.             | X   | X                   | X                 | X                                  | X  |
| Fitch Ratings*                | U.S.             | X   | X                   | X                 | X                                  | X  |
| Dominion Bond Rating Service* | U.S.             | X   | X                   | X                 | X                                  | X  |
| A.M. Best Company*            | U.S.             |   | X                   | X                 | X                                  |  |
| Morningstar Credit Ratings*   | U.S.             | X   |                     | X                 | X                                  |  |
| Kroll Bond Rating Agency*     | U.S.             | X   | X                   | X                 | X                                  | X  |
| Egan Jones Rating Company*    | U.S.             | X   | X                   | X                 |                                    |  |
| Japan Credit Rating Agency*   | Japan            | X   | X                   | X                 |                                    | X  |

\*) As determined by the SEC.

- C2.3j The mapping of credit ratings to BSCR ratings are:

| BSCR Rating | Standard & Poor's | Moody's      | AM Best      | Fitch        |
|-------------|-------------------|--------------|--------------|--------------|
| 1           | AAA               | Aaa          | aaa          | AAA          |
| 2           | AA+ to AA-        | Aa1 to Aa3   | aa+ to aa-   | AA+ to AA-   |
| 3           | A+ to A-          | A1 to A3     | a+ to a-     | A+ to A-     |
| 4           | BBB+ to BBB-      | Baa1 to Baa3 | bbb+ to bbb- | BBB+ to BBB- |
| 5           | BB+ to BB-        | Ba1 to Ba3   | bb+ to bb-   | BB+ to BB-   |
| 6           | B+ to B-          | B1 to B3     | b+ to b-     | B+ to B-     |
| 7           | CCC+ to CCC-      | Caa1 to Caa3 | ccc+ to ccc- | CCC+ to CCC- |
| 8           | Below CCC-        | Below Caa3   | Below ccc-   | Below CCC-   |

| BSCR Rating | KBRA       | DBRS                  | Egan-Jones | Japan Credit Rating Agency | Morningstar Credit Ratings |
|-------------|------------|-----------------------|------------|----------------------------|----------------------------|
| 1           | AAA        | AAA                   | AAA        | AAA                        | AAA                        |
| 2           | AA+ to AA- | AA (High) to AA (Low) | AA+ to AA- | AA+ to AA-                 | AA+ to AA-                 |
| 3           | A+ to A-   | A (High) to A (Low)   | A+ to A-   | A+ to A-                   | A+ to A-                   |

|   |              |                         |              |              |              |
|---|--------------|-------------------------|--------------|--------------|--------------|
| 4 | BBB+ to BBB- | BBB (High) to BBB (Low) | BBB+ to BBB- | BBB+ to BBB- | BBB+ to BBB- |
| 5 | BB+ to BB-   | BB (High) to BB (Low)   | BB+ to BB-   | BB+ to BB-   | BB+ to BB-   |
| 6 | B+ to B-     | B (High) to B (Low)     | B+ to B-     | B+ to B-     | B+ to B-     |
| 7 | CCC+ to CCC- | CCC (High) to CCC (Low) | CCC+ to CCC- | CCC+ to CCC- | CCC+ to CCC- |
| 8 | Below CCC-   | Below CCC (Low)         | Below CCC-   | Below CCC-   | Below CCC-   |

| BSCR Rating | NAIC SVO |
|-------------|----------|
| 1           | -        |
| 2           | -        |
| 3           | 1        |
| 4           | 2        |
| 5           | 3        |
| 6           | 4        |
| 7           | 5        |
| 8           | 6        |

C2.3k A BSCR rating of 0 (not included above) has been provided for certain high-quality fixed-income investments, specifically sovereign bonds and bond mutual funds.

### *Additional Guidance*

#### **Figures are to be reported in thousand units ('000s)**

C2.ii. Although the insurance group does not need to prepare its financial statements in thousands units, the Authority requires insurance groups to report its statutory financial statements and economic balance sheet in thousands as this impacts the capital charges calculated in the BSCR model. The insurance group may attach its Statutory Financial Return under "Other Attachments" to provide the BMA with a more accurate financial position

#### **Applying a BSCR Rating to unquoted internally rated investments**

C2.iii. Insurance groups that have developed an internal rating for unquoted investments shall apply a BSCR rating of 8. Nevertheless, if an insurance group would like to request permission to use an equivalent scale of these investments in their BSCR filing, the insurance group shall request such permission in writing to the BMA and include details on the internal rating assessment and a proposed equivalent scale to the BSCR Rating scale. Only upon approval shall the insurance group reclassify an unquoted investment from BSCR Rating 8.

**Government National Mortgage Association (GNMA), Federal National Mortgage Association (FNMA) and Federal Home Loan Mortgage Corporation (FHLMC) are not eligible for BSCR Rating 0**

C2.iv. Securities that have a BSCR Rating 0 have been defined as ‘Sovereign debt issued by a country in its own currency that is rated AA- or better’, however the Authority would like to acknowledge that GNMA, FNMA and FHLMC are not eligible for the sovereign bond classification BSCR Rating 0 and shall be reported under Mortgage-Backed Securities (MBS). While the Authority acknowledges that an explicit government guarantee applies to the credit risk for GNMA-insured mortgages uncertainty remains with the timing of the mortgage loan repayments. Consequently, the Authority does not extend the sovereign debt treatment to MBS.

**MBS to use NAIC Rating**

C2.v. MBS do not always adequately reflect the risk associated with being held at less than par value. For this reason, the NAIC has modeled these bonds and provides United States (U.S.) insurers with a rating reclassification. The Authority shall allow insurance groups the option to use these reclassifications when summarising their portfolio. Instances where an instrument has a rating from a rating agency that would put it in BSCR ratings classes 1-2, and it has also been classified as NAIC ratings class 1 (equivalent to BSCR ratings class 3), then the better BSCR ratings class may be selected. The Authority requires insurance groups to provide a separate summary of the Form 1 value by BSCR rating class, both before and after the adjustment.

The NAIC reclassifications of MBS will be assigned to the BSCR Ratings classes according to the following table:

| <b>BSCR Rating Class</b> | <b>NAIC (for MBS Only)</b> |
|--------------------------|----------------------------|
| 0-2                      |                            |
| 3                        | 1                          |
| 4                        | 2                          |
| 5                        | 3                          |
| 6                        | 4                          |
| 7                        | 5                          |
| 8                        | 6                          |

Some Residential MBS bonds are not directly modelled by the NAIC, including bonds held by insurance groups that do not have a U.S. presence. The NAIC provides a documented four-step process as part of its SSAP No. 43R for reclassifying such bonds based on their rating and their Form 1 value relative to par. The Authority shall allow companies to optionally follow this process in classifying bonds the NAIC has not formally reclassified.

**C3. SCHEDULE OF FUNDS HELD BY CEDING REINSURERS IN SEGREGATED ACCOUNTS/TRUSTS BY BSCR RATING (SCHEDULE IIA)**

***Background***

- C3.1 To assess the risk of amounts reported in Funds Held By Ceding Reinsurers (Form 1EBS, Line 12(c)), the Authority requires insurance groups to determine the arrangement that the funds are being held. In the event of default, if the reinsurer bears the risk of the assets held, then these amounts are to be reported on Schedule XVIII – Expanded Particulars of Ceded Reinsurance; if the insurance group bears the risk (as well as the market risk of the valuation of investments), then these amounts are to be reported in Schedule IIA – Schedule of Funds Held by Ceding Reinsurers in Segregated Accounts/Trusts By BSCR Rating.
- C3.2 The Schedule of Funds Held by Ceding Reinsurers in Segregated Accounts/Trusts by BSCR Rating — Schedule IIA — provides the BMA with details to assess the type and quality of investment held by requiring the insurance group to allocate the balances by investment category and BSCR Rating (similar to investments reported on Schedule II). Further the balances reported on Schedule IIA also are used in the calculation for the Interest Rate/Liquidity Risk and Cash and Cash Equivalents exposure.
- C3.3 The investment categorisation and BSCR ratings shall be based on the same rating scale and principles as those found in Schedule II.

***Items***

- C3.4 The Schedule is broken into five separate sections as follows:
- a. Quoted and unquoted bonds and debentures;
  - b. Quoted and unquoted equities;
  - c. Other investment;
  - d. Mortgage loans; and
  - e. Cash and time deposits.

***Instructions Affecting Schedule IIA***

- C3.5 All funds held by ceding reinsurers (as reflected in Form 1EBS, Line 12(c) and Form 1, Line 12) in segregated accounts/trusts with identifiable assets, such as fixed income investments, equity investments, mortgage loans, other investments and cash and cash equivalents, shall be included here;



- C3.6 Fixed income investments, both quoted and unquoted, shall be categorised into corporate bonds and sovereign bonds, residential MBS, commercial MBS/asset-backed securities, and bond mutual funds and classified by BSCR rating;
- C3.7 Equity investments, both quoted and unquoted, shall be categorised into common stock, preferred stock and equity mutual funds;
- C3.8 Preferred stock shall be classified by BSCR rating;
- C3.9 BSCR ratings shall be determined in the manner specified in the instructions affecting Schedule II;
- C3.10 Sovereign debt issued by a country in its own currency that is rated AA- or better shall be classified under BSCR rating 0 while all other sovereign bonds shall be classified in a similar manner as corporate bonds;
- C3.11 Debt issued by government-owned and related entities that were explicitly guaranteed by that government, with the exception of MBS, shall be assigned a BSCR rating of 0;
- C3.12 Bond mutual funds shall be classified based on the underlying bond ratings as advised by the fund manager; equity mutual funds shall be classified in a similar manner as direct equity investments;
- C3.13 Money market funds shall be classified by the underlying credit security based on the BSCR rating prescribed in Schedule XIX.

***Additional Guidance***

**Additional guidance for assessing the Funds Held By Ceding Reinsurer arrangement**

- C3.i. For funds held by ceding companies, the capital risk charge is calculated by the nature of the arrangement.
  - a) Where specific assets have been allocated for the benefit of the reinsurer, such that the reinsurer bears market risk on those assets, the Authority requires insurance groups to look through to the underlying assets, and report these balances on Schedule IIA. This effectively adds to the fixed-income risk and equity risk modules similar to Schedule II.
  - b) Where there are no specific identified assets, the reinsurer is effectively in a similar position to a typical cedant with reinsurer exposure, and the amounts will thus be treated similarly to reinsurance recoveries and shall be reported on Schedule XVIII Expanded Particulars of Ceded Reinsurers. Further, the rating for reinsurance exposures should be based on the financial strength ratings of the insurer.

**Applying a BSCR Rating to unquoted internally rated investments**

- C3.ii. Insurance groups that have developed an internal rating for unquoted investments shall apply a BSCR rating of 8. Nevertheless if an insurance group would like to request permission to use an equivalent scale of these investments in their BSCR filing, the insurance group shall request such permission in writing to the BMA and include details on the internal rating assessment and a proposed equivalent scale to the BSCR Rating scale. Only upon approval shall the insurance group reclassify an unquoted investment from BSCR Rating 8. For funds held by ceding companies, the capital risk charge is calculated by the nature of the arrangement.

**Reporting hedge funds**

- C3.iii. When reporting hedge funds on Schedule II, insurance groups may not have the exact details of the underlying assets in which the funds are held. In these instances, the Authority advises allocating on a proportionate basis of the balance of the portfolio to the approved investment guidelines of the hedge fund and provides in the Attachment section the methodology used when reporting these figures.

#### **C4. SCHEDULE OF NET LOSS AND LOSS EXPENSE PROVISIONS BY LINE OF BUSINESS (SCHEDULE III)**

##### ***Background***

- C4.1 The schedule of net loss and loss expense provisions by line of business — Schedule III — provides a breakdown of an insurance group’s net loss and loss expense provisions by statutory lines of business. The BMA has identified and defined 24 statutory lines of business.
- C4.2 Line item 25 ‘Total’ of Schedule III for net loss and loss expense provisions should correspond to the balance reported in Form 1, line 17(d) and Form 1EBS, line 17(d) for the relevant year.

##### ***Instructions Affecting Schedule III***

- C4.2a Amounts reported on the Supplemental Notes to Form 1EBS which shall be reported on an consolidated EBS basis;
- C4.2b The same definition below shall be applied to both proportional and non-proportional statutory lines of business below;
- C4.2c Where the BSCR risk factor charges differ in (a), insurance groups shall make a distinction when completing the statutory filing and using the BSCR model;
- C4.2d Statutory lines of business shall be mutually exclusive (e.g. “Retro casualty” is only to be placed into “Retro property” as prescribed, and not any of the other “casualty” related statutory lines, etc.);
- C4.2e Insurance group may in good faith determine the allocation of the statutory lines;
- C4.2f Where an insurance contract involves multiple lines, the insurance group shall assign to the various lines in accordance with the proportions written;
- C4.2g Where an insurance group is unable to make the determination in instruction (e), the business shall be allocated to the line with the highest proportion;
- C4.2h Where the insurance group is unable to make the determination in instruction (f), then the business shall be assigned to the line with the highest capital risk charge; and
- C4.2i The support and assumptions used by senior management shall be made available for review by the BMA.

|  |   |
|--|---|
| Statutory lines of business<br>(Proportional and Non-Proportional) | Line of business mappings and definitions   |
| Property catastrophe   | <i>Property catastrophe</i> — coverage of damage arising from a peril that triggers an event (or events) that causes \$25 million or more indirect insured industry losses to property (or a loss value in accordance with the coverage provider's stated policies) and that may affect a significant number of policyholders and insurers – peril could be hurricane, earthquake, tsunami, and tornado.  |
| Property   | <p><i>U.S. property</i> — coverage of U.S. risks including buildings, structures, equipment, business interruption, contents and all risk (not included in other categories) related losses.</p> <p><i>Crop / agriculture</i> — coverage of risks including onshore/offshore farms, livestock, agriculture and other food production related losses.</p> <p><i>International property</i> — coverage of non-U.S. risks including buildings, structures, equipment, business interruption, contents and all risk (not included in other categories) related losses.</p>  |
| Personal accident  | <i>Personal accident</i> — coverage of risks arising from an accident that causes loss of sight, loss of limb, other permanent disablement or death, including related medical expenses, etc.   |
| Aviation   | <i>Aviation</i> — coverage of risks arising from airport, fleet, or satellite property and operations-related losses.   |
| Credit/surety  | <i>Credit/surety</i> — coverage of risks arising from various types of guarantees, commercial surety bonds, contractor bonds and various credit-related losses.   |
| Energy offshore/Marine   | <i>Energy offshore/marine</i> — coverage of risks arising from offshore exploration and production, refining, power generation and/or cargo, hull and other marine-related losses.  |
| U.S. casualty  | <p><i>U.S. casualty motor</i> — coverage of U.S. risks arising from injuries to persons or damage of the property of others and/or legal liability imposed upon the insured for motor-related activities/actions, including auto liability.</p> <p><i>U.S. casualty – general</i> — coverage of U.S. risks arising from injuries to persons or damage of the property of others and/or legal liability imposed upon the insured for non-motor related activities including theft, fraud, negligence, and workers' compensation.</p> <p><i>Terrorism</i> — coverage of risks arising from acts of both certified and</p> |

|                                  |  |
|----------------------------------|--|
|                                  | <p>uncertified acts of terrorism (e.g., the calculated use or threat of violence against civilians to achieve an objective(s)) and related losses associated with act of terrorism.</p> <p><i>Other</i> — business that does not fit in any other category.</p>  |
| U.S. professional                | <i>U.S. casualty – professional</i> — coverage of U.S. risks arising from injuries to persons and/or legal liability imposed upon the insured as a professional (e.g., director of a board, etc.) for negligent or fraudulent activities.  |
| U.S. specialty                   | <i>U.S. casualty – medical malpractice</i> — coverage of U.S. risks arising from injuries to persons and/or legal liability imposed upon the insured as a medical professional for negligent (or other) medical-related activities.  |
| International motor              | <i>International motor</i> — coverage of non-U.S. risks arising from injuries to persons or damage of the property of others and/or legal liability imposed upon the insured for motor-related activities/actions, including auto liability.   |
| International casualty non-motor | <i>International casualty non-motor</i> — coverage of non-U.S. risks arising from injuries to persons or damage of the property of others and/or legal liability imposed upon the insured for non-motor-related activities/actions, including professional, medical, and workers' compensation.  |
| Retro property                   | <p><i>Retro property</i> — retrocession cover for risks including buildings, structures, equipment, business interruption, contents and all risk (not included in other categories) related losses.</p> <p><i>Retro casualty</i> — retrocession cover for risks arising from injuries to persons or damage of the property of others and/or legal liability imposed upon the insured for motor and non-motor related activities including theft, fraud, and negligence, etc.</p>                               |
| Structured/finite reinsurance    | <i>Structured/finite reinsurance</i> — limited risk transfer contract comprising reinsurance cover where there is not both significant relative timing AND significant relative underwriting risk transfer – there may be either significant timing OR significant underwriting risk transfer – OR a significant relative economic loss may be possible but not probable (extremely remote) – not including certain catastrophe covers, like earthquake, where the probability of a loss event is also remote. |
| Health                           | <i>Health</i> — coverage of care, curative or preventive medical treatment or financial compensation arising from illness, accident, disability or frailty, including hospital, physician, dental, vision and extended benefits.   |

## **C5. SCHEDULE OF GEOGRAPHICAL DIVERSIFICATION OF NET LOSS AND LOSS EXPENSE PROVISIONS (SCHEDULE IIIA)**

### ***Background***

- C5.1 The schedule of geographical diversification of net loss and loss expense provisions — Schedule IIIA — provides a breakdown of an insurance group's net loss and loss expense provisions by statutory lines of business and by geographical location. The BMA has identified and defined 24 statutory lines of business and 18 statutory geographical zones.
- C5.2 Line item 25 'Total' of Schedule IIIA for net loss and loss expense provisions should correspond to the balance reported in Form 1EBS, line 17(d) for the relevant year.

### ***Instructions Affecting Schedule IIIA***

- C5.2a For each line of business, the net loss reserves for the current year stated in Schedule III may be split between the 18 geographic zones set below. If included, the total amounts in zones 1-18 for a given line of business shall equal the corresponding amount of net loss reserves shown in Schedule III (EBS):

| <b>Underwriting Zone</b>              | <b>Location</b>  |
|---------------------------------------|--|
| Zone 1 - Central & Western Asia       | Armenia, Azerbaijan, Bahrain, Georgia, Iraq, Israel, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Lebanon, Oman, Palestinian, Qatar, Saudi Arabia, Saudi Arab Republic, Tajikistan, Turkey, Turkmenistan, United Arab Emirates and Uzbekistan   |
| Zone 2 - Eastern Asia                 | China, Hong Kong, Japan, Macao, Mongolia, North Korea, South Korea, and Taiwan   |
| Zone 3 - South and South-Eastern Asia | Afghanistan, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, India, Indonesia, Iran, Lao PDR, Malaysia, Maldives, Myanmar, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, Timor-Leste, and Vietnam   |
| Zone 4 - Oceania                      | American Samoa, Australia, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Micronesia, Nauru, New Caledonia, New Zealand, Niue, Norfolk Island, N. Mariana Islands, Palau, Papua New Guinea, Pitcairn, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu, Wallis & Futuna Island   |
| Zone 5 - Northern Africa              | Algeria, Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Cote d' Ivoire, Egypt, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Libya, Mali, Mauritania, Morocco, Niger, Nigeria, Saint Helena, Senegal, Sierra Leone, Sudan, Togo, Tunisia, and Western Sahara  |
| Zone 6 - Southern Africa              | Angola, Botswana, Burundi, Democratic Republic of Congo, Comoros, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mayotte, Mozambique, Namibia, Republic of Congo, Reunion, Rwanda, Sao Tome & Principe, Seychelles, Somalia, South Africa, Swaziland, Uganda, United Republic of Tanzania, Zambia, and Zimbabwe |
| Zone 7 - Eastern Europe               | Belarus, Bulgaria, Czech Republic, Hungary, Moldova, Poland, Romania, Russian Federation, Slovakia, and Ukraine  |
| Zone 8 - Northern                     | Aland Islands, Channel Islands, Denmark , Estonia, Faeroe Islands, Finland   |

|  |  |
|--|--|
| Europe   | Guernsey, Iceland, Republic of Ireland, Isle of Man, Jersey, Latvia, Lithuania, Norway, Svalbard, Jan Mayen, Sweden, United Kingdom  |
| Zone 9 - Southern Europe                               | Albania, Andorra, Bosnia, Croatia, Cyprus, Gibraltar, Greece, Italy, fYR of Macedonia, Malta, Montenegro, Portugal, San Marino, Serbia, Slovenia, Spain, and Vatican City  |
| Zone 10 - Western Europe                               | Austria, Belgium, France, Germany, Liechtenstein, Luxembourg, Monaco, Netherlands, and Switzerland   |
| Zone 11 - Northern America (Excluding USA)             | Bermuda, Canada, Greenland, and St Pierre & Miquelon   |
| Zone 12 - Caribbean & Central America                  | Anguilla, Antigua & Barbuda, Aruba, Bahamas, Barbados , Belize, British Virgin Islands, Cayman Islands, Costa Rica , Cuba, Dominica, Dominican, El Salvador, Grenada, Guadeloupe Guatemala, Haiti, Honduras, Jamaica, Martinique, Mexico, Montserrat, Netherlands Antilles, Nicaragua, Panama, Puerto Rico, St-Barthelemy, St Kitts & Nevis, St Lucia, St Martin, St Vincent, Trinidad & Tobago, Turks & Caicos Islands, and US Virgin Islands |
| Zone 13 - Eastern South America                        | Brazil, Falkland Islands, French Guiana, Guyana, Paraguay, Suriname, and Uruguay   |
| Zone 14 - Northern, Southern and Western South America | Argentina, Bolivia, Chile, Colombia, Ecuador, Peru, and Venezuela  |
| Zone 15 - North-East United States                     | Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont  |
| Zone 16 - South-East United States                     | Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Puerto Rico, South Carolina, Tennessee, Virginia, and West Virginia   |
| Zone 17 - Mid-West United States                       | Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, and Wisconsin  |
| Zone 18 - Western United States                        | Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Texas, Utah, Washington, and Wyoming  |

## **C6. SCHEDULE OF PREMIUMS WRITTEN BY LINE OF BUSINESS (SCHEDULE IVA)**

### ***Background***

- C6.1 The schedule of premiums written by line of business — Schedule IVA — provides a breakdown of an insurance group's gross premiums written and net premiums written by statutory lines of business. Insurance groups are required to separate gross premiums written into 'unrelated' and 'related' business according to the 24 prescribed statutory lines of business.

### ***Instructions Affecting Schedule IVA***

- C6.1a Gross premiums written is the amount of gross premiums written during the relevant year and the 'Total' on line 25 should correspond to the balance reported in Form 2, line 1(c) for the same relevant year; and
- C6.1b Net premiums written is gross premiums written in instruction (a) less reinsurance premiums ceded during the relevant year, and the 'Total' on line 25 should correspond to the balance reported in Form 2, line 3 for the same relevant year.

### ***Additional Guidance***

#### **Figures are to be reported in thousand units ('000s)**

- C6.i. Although the insurance group does not need to prepare its financial statements in thousands units, the Authority requires insurance groups to report its statutory financial statements and economic balance sheet in thousands as this impacts the capital charges calculated in the BSCR model. The insurance group may attach its Statutory Financial Return under "Other Attachments" to provide the BMA with a more accurate financial position.



## **C7. SCHEDULE OF LONG-TERM BUSINESS PREMIUMS (SCHEDULE IVB)**

### ***Background***

C7.1 The schedule of Long-Term Business Premiums — Schedule IVB — provides a breakdown of an insurance group's gross premiums and other considerations, and net premiums and other considerations by prescribed long-term insurance product. Insurance groups are required to separate the long-term gross premiums written into 'unrelated' and 'related' business according to statutory long-term insurance products.

C7.2 A description of these insurance products is listed below:

|   | <b><u>Long-Term Business Lines of Business</u></b>                   | <b><u>Description</u></b>   |
|---|--|---|
| 1 | Mortality  | The risk of fluctuations or deterioration of mortality experience causing increased claims on life insurance coverages.   |
| 2 | Critical illness   | A form of accident and health insurance that pays a benefit if the person insured incurs a predefined major illness or injury.  |
| 3 | Longevity  | The risk of fluctuations or improvements in mortality that cause benefits on payout annuities to be paid for longer than expected.  |
| 4 | Deferred annuities   | An insurance that provides savings or income benefits during the lifetime of the person insured or some limited period thereafter.  |
| 5 | Disability income: active lives with premium guarantee of -          | An accident and health insurance that pays a benefit for a fixed period of time during disability, based on contracts that are for active lives and have a premium guarantee.   |
| 6 | Disability income: active lives for other accident and sickness      | An accident and health insurance that pays a benefit for a fixed period of time during disability based on contracts that are for active lives and are for other accident and sickness coverage.  |
| 7 | Disability income: claims in payment                                 | An accident and health insurance that pays a benefit for a fixed period of time during disability based on contracts where claims in payment are issued on waiver of premiums.  |
| 8 | Disability income: claims in payment for other accident and sickness | An accident and health insurance that pays a benefit for a fixed period of time during disability based on contracts where claims in payment on waiver of premiums are based on contracts that are for active lives and are for other accident and sickness coverage. |
| 9 | Group life   | Life insurance that is issued to persons insured through a  |

|    |                    |  |
|----|--------------------|--|
|    |                    | group arrangement such as through an employer or association.  |
| 10 | Group disability   | Disability insurance that is issued to persons insured through a group arrangement such as through an employer or association.   |
| 11 | Group health       | Health insurance that is issued to persons insured through a group arrangement such as through an employer or association.   |
| 12 | Stop loss          | The risk that arises when total claims experience deteriorates or is more volatile than expected, thereby increasing the likelihood and amount by which actual claims experience exceeds a predefined level. |
| 13 | Rider              | The risk that arises when total claims experience deteriorates or is more volatile than expected, thereby increasing the likelihood and amount by which actual claims experience exceeds a predefined level. |
| 14 | Variable annuities | Insurance that provides a minimum investment guarantee on variable annuities.  |

C7.3 Line item 15 'Total' of Schedule IVB for total gross premiums and other considerations, and net premiums and other consideration should correspond to the balance reported in Form 2, lines 12(c) and 14(d), respectively, for the relevant year.

***Additional Guidance***

**Figures are to be reported in thousand units ('000s)**

C7.i. Although the insurance group does not need to prepare its financial statements in thousands units, the Authority requires insurance groups to report its statutory financial statements and economic balance sheet in thousands as this impacts the capital charges calculated in the BSCR model. The insurance group may attach its Statutory Financial Return under 'Other Attachments' to provide the BMA with a more accurate financial position.

**C8. SCHEDULE OF GEOGRAPHIC DIVERSIFICATION OF NET PREMIUMS WRITTEN (SCHEDULE IVC)**

***Background***

- C8.1 The schedule of geographic diversification of net premiums written — Schedule IVC — provides a breakdown of an insurance group's net premiums written by statutory lines of business and by geographical location. The BMA has identified and defined 24 statutory lines of business and 18 statutory geographical zones.
- C8.2 Line item 25 'Total' of Schedule IVC for net premiums written should correspond to the balance reported in Consolidated Form 2, line 3 for the relevant year.

***Instructions Affecting Schedule IVC***

- C8.2a For each line of business, the net premiums written for the current year stated in Schedule IVA may be split between the 18 geographic zones set above. If included, the total of amounts in zones 1-18 for a given line of business shall equal the corresponding amount of net premiums written shown in Schedule IVA.
- C8.2b Amounts shall be reported on a consolidated basis only.

***Additional Guidance***

- C8.2c When allocating the premiums by geographic location, allocate the premiums by the location of the risk.

## **C9. SCHEDULE OF RISK MANAGEMENT (SCHEDULE V)**

### ***Background***

- C9.1 For assessing the areas of risk of an insurance group, the Authority also takes into consideration the group's risk management structure on an on-going basis. Such areas include: structure of the group, the underwriting risks, market/investment risks, liquidity/interest rate risk and any other risks (such as deposit assets and liabilities and segregated accounts) associated with the insurance grouper. These areas are to be provided on a forward-looking basis and if there are significant changes to the insurance group's business plan for the upcoming year, the insurance group shall include a description of the change in the supporting documentation.
- C9.2 The schedule of risk management shall include the following:
- a) Governance structure
  - b) Group structure
  - c) Intra-group transactions and risk concentrations
  - d) Effective duration of assets
  - e) Effective duration of liabilities
  - f) Description of the effective duration of assets and liabilities calculations and key assumptions
  - g) Gross probable maximum loss
  - h) Net probable maximum loss
  - i) Average annual loss (excluding property catastrophe)
  - j) Actual attritional losses and large claims losses – relevant year
  - k) Arrangements with respect to property catastrophe recoverables
  - l) Mutual fund disclosures
  - m) Summary of projected performance
  - n) Summary of product features and risks
  - o) Financial impact and description of stress and scenario tests
  - p) Investments and derivatives strategies and policy
  - q) Modified co-insurance arrangements
  - r) Deferred accumulation annuities disclosures
  - s) Reconciliation from GAAP financial statements to Form 1EBS
  - t) Description of risk management programme
  - u) Risk register
  - v) List of statutory lines and statutory territories that have catastrophe exposures
  - w) Details of deposit assets and liabilities

### ***Instructions Affecting Schedule V***

C9.2a Governance structure must disclose —

1. The structure of the parent company's board of directors; including names, role, country of residence, work experience and status on the Board;

Additional guidance for status on the board:

|                                  |  |
|----------------------------------|--|
| Non-executive (independent)      | Refers to a non-executive member of the parent board of directors that is not affiliated to the group nor a service provider   |
| Non-executive (service provider) | refers to a non-executive member of parent board of directors that:<br>a) Acts as a company formation agent, or agent for the establishment of a partnership;<br>b) Acts as a nominee shareholder of a company;<br>c) providing administrative and secretarial services to the insurance group;<br>d) Performs its functions in the capacity of resident representative under the Companies Act 1981, Exempted Partnerships Act 1992 and Overseas Partnerships Act 1995; and<br>e) Provides any additional corporate or administrative services as may be specified in regulations |
| Non-executive (other)            | Refers to a non-executive member of the board that does not qualify as an independent director nor is a service provider   |
| Executive                        | Refers to a executive member of the parent board of directors  |

2. The structure of the management of the parent company including names, roles, work country of residence, experience, and employee arrangement (e.g., confirm whether employees are hired or outsourced etc.);

Additional guidance for employee arrangement:

Chief and senior executives employee arrangements are categorised as follows:

|                           |  |
|---------------------------|--|
| Insurance Group           | Employee working fulltime for the insurance group      |
| External service provider | Third party service providers e.g., insurance managers |

3. Terms of reference of the parent company board of directors its sub-committees;
4. List of major shareholder controllers; and
5. A copy of the latest group organisational chart

### ***Additional Guidance***

### **Change in board and/or senior management after financial year-end**

- C9.i. Instances where the composition of the board and senior management has undergone changes since the financial year-end, insurance groups are to report the composition of the board and senior managements as of the financial year-end, as well as provide in brackets in the name field, the effective date of the previous and new members of the board or senior management.
- C9.ii. Note that under section 30J of the Act, a notification is required for change in board members and officers within 45 days of the insurance group becoming aware of the change, and thus the inclusion of this information in the BSCR does not qualify as notification of such change.

### **Terms of Reference clarification**

- C9.iii. 'Terms of Reference' in this case refers to the duties of the board and its sub-committees as stated in the group's charter. If the group's bye-laws include information which aids in the BMA's assessment, it is then acceptable.
- C9.2b Group structure must disclose —
- a) List of regulated entities, the sectors in which they operate in and their place of incorporation grouped by country or state (for United States);
  - b) List of unregulated entities, the sectors in which they operate in and their place of incorporation grouped by country or state (for United States);
  - c) The description of the strategic purpose of each entity;
  - d) The type of each entity categorised either as a holding entity, operating entity, branch, or other;
  - e) The description of the products and services sold to external parties;
  - f) The total assets (on a unconsolidated/legal basis) of each entity;
  - g) The total net assets or equity (on a unconsolidated/legal basis) of each entity;
  - h) The gross and net premiums written (on a unconsolidated/legal basis) of each entity, if applicable;
  - i) Group's participation share (percentage) of each entity; and
  - j) Sector classification;
- C9.2c Intra-group transactions to which the group is a party and the insurance group's risk concentrations—
- a) Details of material intra-group transactions between and among the members of the group including (where applicable) —
    - (i) Exposure value (face value or market value, if the latter is available);
    - (ii) Counterparties involved including where they are located; and
    - (iii) Summary details of the transactions – including purpose, terms and transaction costs, duration of the transaction and performance triggers.

- b) Details surrounding all intra-group reinsurance and retrocession arrangements, and other material intra-group exposures including—
  - (i) Counterparties involved including where they are located;
  - (ii) Aggregated values of the exposure limits (gross and net) by counterparties broken down by counterparty rating;
  - (iii) Aggregated premium flows between counterparties (gross and net); and
  - (iv) The proportion of the group’s insurance business exposure covered by internal reinsurance, retrocession and other risk transfer arrangements;
- c) Ten largest exposures to unaffiliated counterparties and any other unaffiliated counterparty exposures or series of linked unaffiliated counterparty exposures exceeding 10% of the group’s statutory capital and surplus—
  - (i) Name of counterparty;
  - (ii) Exposure values (face value or market value); and
  - (iii) Transaction type;

***Additional Guidance***

**Material intra group transactions, and intra-group reinsurance and retrocession arrangements**

C9.iv. When providing details of ‘material intra-group transactions’ the Authority considers ‘material exposure’ in relation to statutory capital and surplus (i.e., Greater than 10% of statutory capital and surplus), as well as the materiality of the specific disclosure. For example, if the insurance group holds cash of \$3 million and total assets of \$4 million, the BMA would consider the \$3 million cash balance to be material as it pertains to 75% of the insurance group’s total assets.

When providing details of ‘intra-group reinsurance and retrocession arrangements’ the Authority is looking for **all** intra-group reinsurance and retrocession arrangements. Note that if an insurance group has more than 25 transactions with the same assuming and ceding party, they can be aggregated together. If an insurance group has more than 25 transactions, please include these details in the attachments section of the BSCR model.

The ‘Aggregated Premium Flows’ shall be the premium written for the reporting period (note that net refers to any reinsurance that is ceded back to the counterparty). The “Aggregated Values of the Exposure Limits” shall be

the outstanding reserve at the reporting period (note the net refers to any reinsurance that is deducted from the counterparty).

**Internal reinsurance arrangement calculation**

C9.v. The proportion of internal reinsurance arrangements is calculated by dividing the amount of reinsurance provided by affiliates into the total amount of reinsurance available. The insurance group shall only include arrangements where it is the ceding party.

**Unaffiliated counterparties ten largest exposures**

C9.vi. In instances where the insurance group does not have any investing activities, yet it holds cash and cash equivalents, the insurance group shall list these as counterparty exposures as well as include each bank separately.

**Unaffiliated counterparties ten largest exposures – investments to report**

C9.vii. When determining the ten largest unaffiliated counterparty exposures, insurance groups are to include cash & cash equivalents, investments (as well as hedge funds), receivables, recoverables and letters of credit at the end of the reporting period. If the information is available, insurance groups are to provide a look-through basis of the underlying investment.

C9.2d The effective duration of assets must be determined using the aggregate of the total bonds and debentures (as reflected in Form 1EBS, lines 2(b) and 3(b)), preferred stock (as reflected in Form 1EBS, lines 2(c)(ii) and 3(c)(ii)), and mortgage loans (as reflected in Form 1EBS, line 5(c)) as a basis;

C9.2e The effective duration of liabilities must be determined using the reserves (as reflected in Form 1EBS, lines 17(d) and 27(d)) as a basis;

C9.2f The description of the process used for determining the effective duration of assets calculation and effective duration of liabilities calculation, and key assumptions for these calculations;

C9.2g The gross probable maximum loss for natural catastrophe losses (prior to reinsurance) must be calculated at the 99.0% Tail Value-at-Risk (TVaR) level for annual aggregate exposure to all risks and all perils, including reinstatement premiums, for the year following the relevant year based upon the insurance group's catastrophe model. The documentation used to derive the gross probable maximum loss must be retained for at least five years, once a capital and solvency return has been filed in accordance with paragraph 6, at the registered office of the insurance group and shall be presented to the BMA upon request;

C9.2h The net probable maximum loss for natural catastrophe losses (after reinsurance) must be calculated at the 99.0% TVaR level for annual aggregate exposure to all risks and all



perils, including reinstatement premiums, for the year following the relevant year based on the insurance group's catastrophe model. The support documentation used to derive the net probable maximum loss must be retained for at least five years, one a capital and solvency return has been filed in accordance with paragraph 6, at the registered office of the insurer and shall be presented to the Authority upon request;

### ***Additional Guidance***

#### **Probable Maximum Loss and Average Annual Loss valuation – after tax**

- C9.viii. The Probable Maximum Loss and Average Annual loss shall be valued after tax.
- C9.2i The average annual loss means -
- a) The expected net natural catastrophe loss (after reinsurance), including reinstatement premiums, for annual aggregate exposure to all property-related risks and all perils other than those relating to the property catastrophe line of business for the year following the relevant year based on the group's catastrophe model;
  - b) The calculation should be from the same underlying loss distribution used to determine the gross probable maximum loss and the net probable maximum loss (excluding the property catastrophe component); and
  - c) The support documentation must be retained for at least five years once a capital and solvency return has been filed in accordance with paragraph 6 at the registered office of the designated insurer of the insurance group and shall be presented to the BMA upon request;
- C9.2j The actual attritional losses and large claim losses – relevant year means the actual aggregate losses (classified by groups as attritional and large claim losses in accordance with its own policy) experienced by the group in the relevant year (not including prior year reserve releases or adverse development);
- C9.2k The arrangements with respect to property catastrophe recoverables shall disclose the amounts of-
- a) Collateral;
  - b) Catastrophe bonds;
  - c) Special purpose insurer (indemnity basis);
  - d) Special purpose insurer (other basis); and
  - e) Total;
- C9.2l Mutual fund disclosures shall include the name, type and amount of each mutual fund used by the members of the group;

### ***Additional Guidance***

#### **Mutual Fund information to provide**

- C9.ix. Insurance groups to are to provide a summary report (in Excel format) that lists each fund the insurance group is actually using, a brief description of the type of fund (such as bond fund, equity fund balanced fund, etc.) and the amount the insurance group has invested in each fund.
- C9.2m Summary of projected performance for the year following the relevant year—
- a) The insurance group’s latest estimate of annual net premiums written;
  - b) Estimated underwriting profit or loss;
  - c) Estimated net income or loss; and
  - d) A qualitative description of the insurance group’s business and underwriting strategy to be used in an attempt to achieve the estimates in (a) and (c) above;
- C9.2n Summary of product features and risks must cover the primary product features and benefits insured and any policyholder options or guarantees that could materially affect the insurance group;
- C9.2o Financial impact and description of stress and scenario tests shall disclose the results from the stress and scenario tests prescribed by the BMA annually and published in such manner as the BMA directs;
- C9.2p The investments and derivatives strategies and policies shall disclose —
- a) A description of the insurance group’s investment strategy governing selection and composition of investment portfolio;
  - b) A description of the strategies and policies surrounding the use of derivatives and other hedging instruments; and
  - c) The market value and nominal exposure of each derivative financial instrument with a nominal exposure greater than 5% of total assets listed by assets, liabilities, long and short positions, respectively;
- C9.2q Modified co-insurance arrangements shall disclose —
- a) Name of ceding company;
  - b) Type of coverage;
  - c) Amount of reserve; and
  - d) Aggregate asset allocation (book value) and the related affiliated or unaffiliated cedant;

### ***Additional Guidance***

### **Reporting basis for Modified Co-Insurance arrangements**

- C9.x. Modified co-insurance arrangement reserve amounts and aggregated asset allocations are to be reported on a consolidated GAAP basis in the BSCR model.
- C9.2r Deferred accumulation annuities shall disclosure—
- a) Total reserves for deferred accumulation annuities;
  - b) Total reserves for deferred accumulation annuities with contractual guaranteed annuitisation rates;
  - c) Total reserves for deferred accumulation annuities annuitised in the past year at contractual guaranteed rates (prior to annuitisation); and
  - d) Total reserves for deferred accumulation annuities annuitised in the past year at contractual guaranteed rates (post annuitisation).
- C9.2s A reconciliation of amounts reported in total assets, total liabilities and total statutory economic capital and surplus comprising of any adjustments applied to the GAAP financial statements to arrive at the amounts disclosed in Form 1EBS;
- C9.2t The description of the insurance group's risk management programme shall disclose-
- a) A description of the risk management process, including how the risk management programme is used for strategic management decision-making, capital allocation and capital adequacy;
  - b) A description of the governance surrounding the risk management process including the identification of the owners of the process and the extent of the board of directors' involvement;
  - c) A description of the risk appetite including the process for setting and embedding risk limits, and the identification of the types of stress testing carried out to ascertain the suitability of the risk appetite; and
  - d) A description of the process undertaken to monitor material risk concentration;
- C9.2u Risk register disclosing -
- a) A description of the insurance group's material risks;
  - b) Owners of the respective risks;
  - c) The impact and probability of the risk and the overall risk crystallising expressed as quantitative or qualitative measures;
  - d) Summary of the risk mitigation/controls in place and an assessment of their effectiveness in reducing the probability and/or impact of the risk; and
  - e) Overall assessment of the impact and probability of the residual risk expressed as quantitative or qualitative measures;

C9.2v The list of statutory lines and statutory territories that have catastrophe exposures as set out below -

| <b>Zone</b> | <b>Territories</b>   |
|-------------|--|
| 1           | Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, New Jersey, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia, the District of Columbia, Alabama, Arkansas, Louisiana, Mississippi, Texas, Florida, Georgia, North Carolina, and South Carolina |
| 2           | Caribbean  |
| 3           | Arizona, Colorado, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Montana, Minnesota, Missouri, Nebraska, Nevada, New Mexico, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, Utah, Wisconsin, and Wyoming   |
| 4           | California   |
| 5           | Oregon, Washington   |
| 6           | Hawaii   |
| 7           | Canada, Alaska   |
| 8           | United Kingdom, Continental Europe   |
| 9           | Australia / New Zealand  |
| 10          | Japan  |
| 11          | Nationwide covers  |
| 12          | Worldwide covers   |
| 13          | All exposures not included in Zones 1 to 12  |

C9.2w In respect of business for which deposit accounting approaches have been followed: a description of business, total assets held in trust or other collateral, lines of business written, gross premiums written for the period, net premiums written for the period, and limits (maximum exposure). For business that has limited exposure, provide the results at a 99.0% TVaR and for business with unlimited exposure, provide details of such business;

***Additional Guidance***

**Contracts that qualify as Deposit Assets and Liabilities**

- C9.xi. Deposit Asset and Liability contracts represent insurance contracts that do not meet the definition of meeting insurance risk (as applicable per the insurance group's GAAP). Prior to 31 December, 2016, if an insurance group wrote insurance business that did not meet the definition of insurance risk, insurance groups would be required to seek BMA approval to include such contracts in the statutory balance sheet. Going forward, this approval will not be necessary.

As a result, the Authority has provided the new schedule V(k) Details of Deposit Asset & Liabilities to assess the insurance group's contracts that do not meet the definition of insurance risk, and lines of business that are written (both on a gross and net basis) for the reporting period, assess the assets that are supporting these obligations; and the exposure levels of such contracts.

**Details by contract and line of business**

- C9.xii. Complete the schedule by providing the lines of business written for each exposure type separately. In other words, if an insurance group has exposure that writes both property and casualty business), then the insurance group is to report the business for the property business on one line and report the casualty business line separately.

## **C10. SCHEDULE OF ASSETS (SCHEDULE VI)**

### ***Background***

- C10.1 The schedule of assets — Schedule VI — provides the BMA with details to assess the insurance group's investment risk on a look through basis (other than the allocation provided in Schedule IIB) jurisdiction, and the duration of the holdings. This schedule is also considered when reviewing the insurance group's asset-liability matching practices.
- C10.2 It is noted that the allocation and balances reported on Schedule VI are not applied a capital charge, however it is used for the BMA to assess the insurance group's investment risk and location of the investments held.
- C10.3 Assets are to be allocated as follows:

### ***Items***

- a) cash, certificates of deposit, money market funds;
- b) sovereign bonds, municipals, supranationals (multilateral development banks and international organisations), corporate bonds, private placements, mutual funds, other-secured bonds, other-unsecured bonds;
- c) residential mortgage-backed securities, commercial mortgage-backed securities, collateralized loan obligations, collateralized debt obligations, auto loan asset-backed securities, student loan asset-backed securities, credit card receivables asset-backed securities;
- d) public equities, public preferred stock, exchange-traded funds;
- e) private equities, investment funds, hedge funds, private credit funds, catastrophe bonds, other insurance-linked securities, infrastructure debt, equity investments in infrastructure, investment in affiliates, advances in affiliates, equity release/reverse mortgages;
- f) investment income due and accrued, accounts and premiums receivable, reinsurance balance receivable, sundry assets, letters of credit, guarantees and other instruments;
- g) real estate – owner-occupied, real estate – investment;
- h) listed options, futures, forwards, swaps, swaptions, over-the-counter options;
- i)

### ***Additional Guidance***

#### **Asset types**

C10.3a Assets are to be allocated as follows:

- a) for assets listed in a. – d. –;
  - (i) the jurisdiction where the asset is held/stock exchange-traded;
  - (ii) average rating of the asset type (if applicable);
  - (iii) face value;
  - (iv) fair value;
  - (v) average effective yield to maturity (if applicable); and
  - (vi) average duration and convexity (if applicable);
- b) for assets listed in g. i.e. real estate –
  - (i) the jurisdiction where the asset is held/stock exchange-traded;
  - (ii) the purpose of the asset;
  - (iii) face value;
  - (iv) fair value;
- c) for assets listed in h. i.e. derivatives –
  - (i) the purpose of holding the derivative;
  - (ii) the position held in the derivative;
  - (iii) whether the derivative is centrally cleared;
  - (iv) fair value;
  - (v) notational value; and
  - (vi) exposure

## C11. SCHEDULE OF LONG-TERM INSURANCE DATA (SCHEDULE VII)

### *Background*

- C11.1 The schedule of long-term insurance data — Schedule VII — provides a breakdown of an insurance group's Best Estimate Technical Provisions by prescribed long-term insurance products. A description of these insurance products is listed below:

|   | <b><u>Long-Term Business<br/>Lines of Business</u></b>               | <b><u>Description</u></b>   |
|---|--|---|
| 1 | Mortality  | The risk of fluctuations or deterioration of mortality experience causing increased claims on life insurance coverages.   |
| 2 | Critical illness   | A form of accident and health insurance that pays a benefit if the person insured incurs a predefined major illness or injury.  |
| 3 | Longevity  | The risk of fluctuations or improvements in mortality that cause benefits on payout annuities to be paid for longer than expected. The capital requirements for longevity swaps are not directly determined by the standard BSCR model. Insurers with longevity swaps will need to apply for a Section 6D BSCR adjustment |
| 4 | Deferred annuities   | An insurance that provides savings or income benefits during the lifetime of the person insured or some limited period thereafter.  |
| 5 | Disability income: active lives with premium guarantee of -          | An accident and health insurance that pays a benefit for a fixed period of time during disability, based on contracts that are for active lives and have a premium guarantee.   |
| 6 | Disability income: active lives for other accident and sickness      | An accident and health insurance that pays a benefit for a fixed period of time during disability based on contracts that are for active lives and are for other accident and sickness coverage.  |
| 7 | Disability income: claims in payment                                 | An accident and health insurance that pays a benefit for a fixed period of time during disability based on contracts where claims in payment are issued on waiver of premiums.  |
| 8 | Disability income: claims in payment for other accident and sickness | An accident and health insurance that pays a benefit for a fixed period of time during disability based on contracts where claims in payment on waiver of premiums are based on contracts that are for active lives and are for other accident and sickness coverage.   |
| 9 | Group life   | Life insurance that is issued to persons insured through a group arrangement such as through an employer or   |



|    |                    |  |
|----|--------------------|--|
|    |                    | association.   |
| 10 | Group disability   | Disability insurance that is issued to persons insured through a group arrangement such as through an employer or association.   |
| 11 | Group health       | Health insurance that is issued to persons insured through a group arrangement such as through an employer or association.   |
| 12 | Stop loss          | The risk that arises when total claims experience deteriorates or is more volatile than expected, thereby increasing the likelihood and amount by which actual claims experience exceeds a predefined level. |
| 13 | Rider              | The risk that arises when total claims experience deteriorates or is more volatile than expected, thereby increasing the likelihood and amount by which actual claims experience exceeds a predefined level. |
| 14 | Variable annuities | Insurance that provides a minimum investment guarantee on variable annuities.  |

### *Items*

C11.2 The Schedule has the following column items for each individual long-term insurance product, where applicable:

- a) Bermuda EBS Best Estimate Provisions
- b) BSCR-adjusted reserve [greater of item (1) and 0]
- c) Net amount at risk for adjustable product/treaty
- d) Net amount at risk for non-adjustable product/treaty
- e) Total net amount at risk

C11.3 The Schedule has the following column items for each individual long-term insurance product with regards to additional Supplemental Notes, where applicable:

- a) Bound But Not Incepted (BBNI) Premium (Form 1EBS, line 27(d))
- b) Best Estimate Provision in respect to BBNI (Form 1EBS, line 27(d))
- c) Best Estimate Provision using transitional adjustments (Form 1EBS, line 27(d))
- d) Equivalent of column (14) if transitional arrangements were not used (Form 1EBS, line 27(d))
- e) Scenario Based approach Best Estimate for Technical Provisions (Form 1EBS, line 27(d))
- f) Equivalent of column (16) if Scenario Based approach were not used (Form 1EBS, line 27(d))
- g) Equivalent of column (16) if Based approach were used (Form 1EBS, line 27(d))
- h) BBNI Premium (Form 1EBS, line 27B(d))

- i) Best Estimate Provision in respect to BBNI (Form 1EBS, line 27B(d))

***Additional Guidance***

**Additional guidance for reporting Net Value at Risk**

C11.3a For the purposes of completing Schedule VII Long-Term Insurance Data:

- a) Net Amount at Risk refers to the difference between the total amount of the death benefits from the policy and the accrued cash value for that policy
- b) The Net Amount at Risk should be reported for the retained portion of each contract.
- c) If an insurer has a term policy which has no cash value, then the Net Amount at Risk would equal the face amount of the policy;
- d) If an insurer has a permanent life policy, the value of the reserves can be used (instead of the value of the cash) for the Net Amount at Risk valuation;
- e) The mortality risk Net Amount at Risk should include all assurance, whole life, universal life as well as group life insurance.

## **C12. SCHEDULE OF LONG-TERM VARIABLE ANNUITY (SCHEDULE VIII)**

### ***Background***

- C12.1 The schedule of Long-Term Variable Annuity — Schedule VIII — provides disclosures on the following long-term variable annuity guaranty products for both in-the-money and out-of-the-money positions:
- a) Guaranteed Minimum Death Benefit (GMDB)
  - b) Guaranteed Minimum Income Benefit (GMIB)
  - c) Guaranteed Minimum Withdrawal Benefit (GMWB)
  - d) Guaranteed Enhanced Earnings Benefit (GEED)
  - e) Guaranteed Minimum Accumulation Benefit (GMAB)
- C12.2 The percentage of GMDB with multiple guarantees is also required to be disclosed in this schedule.
- C12.3 Long-term variable annuities are to be reported on Schedule VIII with the requirements listed below. Upon approval from the Authority, the insurance group may have its variable annuity business assessed by its internal capital model and with the details of this provided in Schedule VIIIA.

### ***Items***

- C12.4 The schedule has the following column items for each individual variable annuity risk, where applicable:
- a) Bermuda EBS Best Estimate Provision
  - b) Guaranteed value – volatility 0% to 10%
  - c) Guaranteed value – volatility 10% to 15%
  - d) Guaranteed value – volatility of over 15%
  - e) Net amount at risk – volatility 0% to 10%
  - f) Net amount at risk – volatility 10% to 15%
  - g) Net amount at risk – volatility of over 15%

### **C13. SCHEDULE OF LONG-TERM VARIABLE ANNUITY – INTERNAL CAPITAL MODEL (SCHEDULE VIIIA)**

#### ***Background***

- C13.1 The schedule of Long-Term Variable Annuity - Internal Capital Model — Schedule VIIIA — is intended to capture the internal model-based capital requirements for variable annuities.
- C13.2 Insurance groups must obtain permission from the BMA to complete Schedule VIIIA in lieu of Schedule VIII.
- C13.3 Once the insurance group has selected to complete Schedule VIIIA, it would be unable to switch to completing Schedule VIII without first obtaining approval from the BMA.

#### ***Items***

- C13.4 Disclosures on insurance group's in-force data  
For each type of variable annuity guarantee risk, insurance groups will be required to provide summaries of their policy data by policy accounts, account values, guarantee amounts, and net amounts at risk with their BSCR EBS Best Estimate amounts. Such data should be further broken out by policy year, the level of fund volatility (0-10%, 10-20%, 20%+), and how far in or out the money is (less than -15%, -15% to -5%, -5% to +5%, +5 to +15%, greater than +15%).
- C13.5 Disclosures on insurance group's internal capital model  
Insurance groups may use their own stochastic internal capital model to determine their capital requirements for their variable annuity guarantee business on a one-year model with a 99% TVaR threshold or a runoff model on a 95% TVaR threshold. In addition, insurance groups will be required to disclose the capital requirements determined by their internal capital model reflecting both with hedging and without hedging. Lastly, model results relating to economic sensitivities, as prescribed by the BMA, and behavioural and actuarial sensitivities would be disclosed.
- C13.6 Actuarial memorandum  
The designated insurer of the insurance group must file an actuarial memorandum with the Authority that should minimally include the particulars described below. When the information is already available in other documents within the capital and solvency return, it is acceptable to attach those documents and simply make reference to them in the actuarial memorandum. The insurance group should indicate any significant changes from the last memorandum filed with the Authority.

| Line No. | Section                    | Provide a <b><u>brief summary or description</u></b> of the following details under each section:  |
|----------|----------------------------|--|
| 1        | Executive summary          | <ul style="list-style-type: none"> <li>• Required capital amount and drivers of result</li> <li>• Key risks and associated risk mitigation techniques</li> <li>• The modeling methods used</li> </ul>  |
| 2        | Overview of business       | <ul style="list-style-type: none"> <li>• Type of business</li> <li>• Key product features and specifications</li> </ul>  |
| 3        | Key risk exposures         | Qualitative description of key risk exposures, such as economic, mortality, surrender, annuitisation, withdrawal, expense and counterparty risks   |
| 4        | Description of model       | <p>The approach used to calculate total assets and required capital</p> <p>Key model details, including:</p> <ul style="list-style-type: none"> <li>• Source of asset and liability data</li> <li>• Aggregations used to generate model cells</li> <li>• Allocation of assets to variable annuity blocks</li> <li>• The reserve basis</li> <li>• Time step of model (e.g. monthly)</li> <li>• The rate used to accumulate and discount cash flows</li> <li>• The treatment of interim solvency (e.g., how periods of negative cash flows followed by positive cash flows allowed for)</li> </ul>   |
| 5        | Description of assumptions | <ul style="list-style-type: none"> <li>• Basis for economic scenarios, including underlying model and parameters</li> <li>• Information on the average return and volatility on the equity investment funds</li> <li>• For mortality and all policyholder behavior assumptions (e.g. premium payments, withdrawals, annuitisations, and lapses): <ul style="list-style-type: none"> <li>○Source of data (e.g., company-specific experience)</li> <li>○Any margins for conservatism that were used</li> <li>○Any future mortality improvement</li> </ul> </li> <li>• Approach to investment fund mapping</li> <li>• Insurer's crediting strategy</li> <li>• Expenses and commissions</li> <li>• Treatment of taxes</li> <li>• Future management actions (other than hedging and reinsurance)</li> </ul> |
| 6        | Reinsurance                | <ul style="list-style-type: none"> <li>• Reinsurance (both assumed and ceded), including a list of counterparties</li> <li>• Nature of arrangements, including caps, floors and recapture provisions</li> </ul>  |

|    |   |  |
|----|---|--|
|    |   | <ul style="list-style-type: none"> <li>• The approach to modeling these arrangements</li> <li>• Collateral requirements, if relevant</li> </ul>  |
| 7  | Hedging   | <ul style="list-style-type: none"> <li>• Business covered</li> <li>• Hedge target</li> <li>• Hedged parameters (i.e. Greeks) managed/monitored by the group</li> <li>• Internal governance procedures</li> <li>• Currently-held derivatives and range of derivatives approved for trading</li> <li>• Unhedged exposures</li> <li>• Historical hedge effectiveness</li> <li>• Sample attribution reports</li> <li>• How hedging is reflected in the determination of required capital and stress tests, including how any modeling limitations or simplifications are addressed</li> </ul>  |
| 8  | Risk mitigation arrangements other than hedging | <ul style="list-style-type: none"> <li>• Business covered;</li> <li>• Nature of arrangements;</li> <li>• Internal governance procedures; and</li> <li>• Other supporting details such as internal analyses, historical results, etc.</li> </ul>  |
| 9  | Results and model output                        | <ul style="list-style-type: none"> <li>• Capital results (summarised also in line 1 of the table under b)) and commentary</li> <li>• Results of stress tests (summarised also in lines 2 and 3 of the table under b)) with description and justification for tests selected and commentary on results</li> <li>• Sensitivity results for key assumptions/risk exposures</li> <li>• The output from model for a single scenario in the tail (e.g., that which most closely corresponds to the TVaR 95% result) showing cash flows by guaranteed rider type, accumulation and discounting of cash flows, and total assets required for that scenario.</li> </ul> |
| 10 | Reviewer and signatory                          | The memorandum is required to be reviewed and signed by the Approved Actuary   |

## **C14. SCHEDULE OF GROUP'S SOLVENCY SELF-ASSESSMENT (SCHEDULE IX)**

### ***Background***

- C14.1 The Group's Solvency Self-Assessment (GSSA) is a regime that requires Bermuda groups to perform an assessment of their own risk and solvency requirements. This provides the BMA with the group's perspective of the capital resources (referred to as GSSA capital) necessary to achieve its business strategies and remain solvent given its risk profile, as well as insight into the risk management and governance procedures surrounding this process. The risk profile considers all reasonably foreseeable material risks arising from its operations or operational environment.
- C14.2 The GSSA is one of the tools used in the supervisory review process to assist in monitoring compliance with the Group Rules given that the GSSA should, at a minimum, consider those risks outlined in the Group Rules.
- C14.3 The GSSA process should be integrated into the group's decision-making process and serve a critical role in the development, implementation and monitoring of management strategies. This is referred to as the 'use test'.

### ***Items***

- C14.4 The schedule of GSSA — Schedule IX — shall provide particulars of the following matters:
- a) GSSA capital summary and additional information – disclosing the group's own capital computations, group's comparison of the GSSA capital to regulatory capital, group's plans for raising additional capital and contingency arrangements impacting the available capital.
  - b) GSSA general questions – providing information on a group's risk management and governance programme, the review and approval of the GSSA, and integration of the GSSA into the strategic decision-making process.
  - c) GSSA assessment of material risks of the group – providing information on a group's assessment of material risks, determination of both the quality and quantity of capital required to cover its risks, the forward-looking analysis and its ability to manage its capital needs, the review and approval of the GSSA and the governance and controls surrounding model(s)/tool(s) used to compute the GSSA capital.

### ***Instructions Affecting Schedule IX***

C14.4a GSSA capital summary and additional information—

| Column Item |                    | Description  |
|-------------|--------------------|--|
| 1           | GSSA capital       | <p>GSSA capital is the amount of capital the group has determined that it is required to achieve its strategic goals upon undertaking an assessment of all material risks (reasonably foreseeable) arising from its operations or operating environment.</p> <p>Input the GSSA capital determined by the group for each respective risk category. The BMA is mindful that it is difficult to quantify and therefore hold capital in respect of certain risks (e.g., liquidity, reputational, concentration, group and strategic risk,). Where a group does not hold capital against certain risks, it should input a nil amount in the respective cell.</p> <p>Where a group uses an internal capital model/tool to determine its GSSA capital, the internal model/tool will not require the BMA's approval for purposes of completing this Schedule.</p> <p>All supporting work papers and documents for purposes of completing this Schedule should be retained and kept available for examination and discussion with the BMA should the need arises.</p> |
| 2           | Regulatory capital | <p>Regulatory capital is determined by the Group BSCR or an approved group internal capital model at 99.0% TVaR over a one-year time horizon.</p> <p>Input the Regulatory capital determined by the group for each respective risk category, where applicable.</p>   |

Additional information

| Line Item | Description   |
|-----------|---|
| 1-7       | <p>Questions 1-7</p> <p>The designated insurer should select the appropriate response from the drop-down menu provided and/or otherwise provide a brief description, explanation or attachment. Where an attachment is provided, the designated insurer shall include references (e.g., page number, paragraph number) of where the information can be located within the attachment.</p> <p>Where a question/section is not applicable to an insurance group or the options provided do not fully reflect the insurance group's position, the insurance group shall select the "Others" option and include a brief description.</p> <p>For Question 7 – The insurance group <b>must</b> disclose whether a regulator in any jurisdiction has placed a restriction on the movement of assets/payment of dividends from a subsidiary in that jurisdiction, and the associated amount. The amount should be gross of regulatory capital requirements.</p> |



C14.4b GSSA general questions

| Line Item |               | Description  |
|-----------|---------------|--|
| 1-5       | Questions 1-5 | The designated insurer should select the appropriate response from the drop-down menu provided. Where a question/section is not applicable to an insurance group or the options provided do not fully reflect the insurance group's position, a brief description shall be included.                     |
| 5         | Question 5    | Independent verification shall be conducted by an internal or external auditor or any other appropriately skilled internal or external function, as long as they have not been responsible for the part of the GSSA process they review, and are therefore deemed to be independent in their assessment. |

C14.4c GSSA assessment of material risks of the group

| Line Item |                | Description  |
|-----------|----------------|--|
| 1-11      | Questions 1-11 | <p>This section requires the insurance group to undertake and file with BMA the group's most recent report comprising of a solvency self-assessment of its material risks and the determination of both the quality (types of capital) and quantity of GSSA capital required to cover these risks, while remaining solvent and achieving the insurance group's business goals.</p> <p>The insurance group shall provide attachments containing the information requested. The attachments shall include references (e.g. page number, paragraph number) of where the information can be located within the attachment.</p> |
| 12        | Question 12    | The insurance group should select the appropriate response or otherwise provide a brief description or an attachment. Where an attachment is provided, the insurance group shall include references (e.g. page number, paragraph number) of where the information can be located within the attachment.  |
| 1-12      | Questions 1-12 | All supporting work papers and documents used to prepare the GSSA submission should be retained and kept available for examination and discussion with BMA should the need arise.  |

## **C15. CATASTROPHE RISK RETURN (SCHEDULE X)**

### ***Background***

- C15.1 The Catastrophe Risk Return ('Cat Return') is set out to determine the extent of reliance on vendor models to assess catastrophe exposures and highlight the actions insurance groups take to mitigate model risk, including a description of procedures and analytics in place to monitor and quantify exposure to vendor models. It also serves as a tool to assist the BMA to assess the reasonableness of inputs into the catastrophe component of the regulatory capital requirement, and whether standards are being applied evenly.
- C15.2 The Cat Return will also be used to assess liquidity. Liquidity risk is not always mitigated simply by holding additional capital. Claims-paying ability is obviously an important factor that is perhaps more pronounced with catastrophe risk where large amounts of capital may have to be liquidated to pay claims at very short notice. Additionally, complexity arises with the currency mismatch that may exist between an insurance group's capital and a subset of its potential catastrophe liabilities. An insurance group should be able to demonstrate that it has considered potential challenges to liquidity, including the methodology and principles used to measure liquidity, contingency plans, access to new funding sources, and projected liquidity requirements.

### ***Items***

- C15.3 The Cat Return — Schedule X — shall provide the following matters:
- a) Total Exceedance Probability ("EP") curves
  - b) EP curve for insurance
  - c) EP curve for region-perils
  - d) Statutory lines of business and zones exposure per region-perils
  - e) Accumulations overview
  - f) Data analysis
  - g) Reinsurance disclosures
  - h) Insurance terrorism exposure
  - i) Reinsurance terrorism limits and
  - j) Assumed exchange rates
- C15.4 The Catastrophe Risk Return Guidelines (2016) provide detailed instructions on the above requirements and has been updated for frequently asked questions. A copy of these guidelines is available on the BMA's website.

## **C16. SCHEDULE OF REGULATED NON-INSURANCE FINANCIAL OPERATING ENTITIES (SCHEDULE XI(A))**

### ***Background***

- C16.1 The schedule of regulated non-insurance financial operating entities — Schedule XI(A) — shall calculate the group’s regulatory capital requirement for regulated non-insurance financial operating entities and shall form part of the group’s charge for capital adjustment, which is added to the BSCR (after covariance adjustment) amount to arrive at the Group BSCR.
- C16.2 This shall apply to all entities where the parent company exercises either control or significant influence. In determining whether the parent company controls or significant influence over a regulated non-insurance financial operating member of the group, the definitions contained in the US, UK, or Canadian GAAP or IFRS, as applicable, shall apply.

### ***Items***

| Column Item |                                   | Description  |
|-------------|-----------------------------------|--|
| 1           | Group member name                 | Column (1): Input the name of the regulated non-financial operating entity where the parent exercises either control or significant influence — Ensure that the name reflected here is consistent with the name reported in Schedule V(b) in order for the auto-links to work on other column items. |
| 2           | Jurisdiction                      | Column (2): The jurisdiction of said regulated entity shall automatically populate.  |
| 3           | Sector classification             | Column (3): The sector where the said regulated entity operates in shall automatically populate.   |
| 4           | Strategic purpose                 | Column (4): The description of the strategic purpose of said regulated entity shall automatically populate.  |
| 5           | Entity type                       | Column (5): The entity type of said regulated entity shall automatically populate.   |
| 6           | Products and services offered     | Column (6): The description of the products and services offered to external parties by said regulated entity shall automatically populate.  |
| 7           | Participation                     | Column (7): The parent company’s participation type (whether control or significant influence) on said regulated entity shall automatically populate.  |
| 8           | Percent of participating interest | Column (8): The parent company’s participating interest (in percentage) on said regulated entity shall automatically populate.   |
| 9           | Assets                            | Column (9): The total assets of said regulated entity shall automatically populate.  |

| Column Item |   | Description  |
|-------------|---|--|
| 10          | Investment Amount (Equity Method)                           | Column (10): The investment amount of said regulated entity, which shall be (a) the equity value where the parent company exercises significant influence and has accounted under the equity method of accounting as aggregated in Form 1, line (4d); or (b) the net asset value where the parent company exercises control over the regulated entity, shall automatically populate. |
| 11          | Regulatory capital requirement for regulated entities (RCR) | Column (11): Input the Regulatory Capital Requirement (RCR) for said regulated entity, which shall be based on the jurisdiction's solvency laws for the regulatory sector in which the said entity is licenced to conduct non-insurance financial business.  |
| 12          | Applicable share of the RCR                                 | Column (12): Calculated using [column (8) x column (11)].  |

***Instructions affecting Schedule XI(A)***

- a) The insurance group's regulatory capital requirement for regulated non-insurance financial operating entities, where the parent company exercises either control or significant influence, shall be calculated in accordance with Schedule XI(A) and shall form part of the insurance group's BSCR – where “control” and “significant influence” has the same meaning given in subparagraph 19(4) of the Group Rules;
- b) The name of the entity and its jurisdiction of incorporation shall be provided;
- c) The sector classification of each of the insurance group's regulated non-insurance financial operating entities shall be provided as prescribed in the Instructions Affecting Schedule V paragraph (b);
- d) The description of the strategic purpose of each entity shall be provided;
- e) The entity type shall be provided;
- f) The description of the products and services offered to external parties of each entity shall be provided;

- g) The insurance group's participation categorised, whether control or significant influence, on each registered entity shall be provided;
- h) The percent of participating interest of the insurance group on each registered entity shall be provided;
- i) The total assets of each entity shall be provided;
- j) The investment amount shall be (1) the equity value of the insurance group's investment in such regulated entities where the insurance group has significant influence and has accounted under the equity method of accounting as aggregated in Form 1, Line 4(d) and (2) the net asset value of the group's investment in these regulated entities where the group exercises control shall be provided;
- k) The regulatory capital requirement (RCR) shall be provided based on the jurisdiction's solvency laws for the regulated sector in which the entity is licenced to conduct non-insurance financial business; and
- l) The insurance group's proportionate share of each entity's RCR.

## **C17. SCHEDULE OF UNREGULATED ENTITIES WHERE THE PARENT EXERCISES CONTROL (SCHEDULE XI(B))**

### ***Background***

- C17.1 The schedule of unregulated entities where the parent exercises control — Schedule XI(B) — shall calculate the group’s capital requirement for unregulated entities and shall form part of the group’s charge for capital adjustment, which is added to the BSCR (after covariance adjustment) amount to arrive at the Group BSCR.
- C17.2 This shall apply to all entities where the parent company exercises control. In determining whether the parent company controls over an unregulated member of the group, the definitions contained in the U.S., U.K., or Canadian GAAP or IFRS, as applicable, shall apply.
- C17.3 The capital charges applied to each unregulated entities’ net assets are based on the entities’ operating business, as follows:
- a. 0% on unregulated entities that conduct ancillary services.
  - b. 15% on unregulated entities that conduct non-financial operating entities.
  - c. 50% on unregulated entities that conduct financial operating entities.

### ***Items***

| Column Item |                                   | Description  |
|-------------|-----------------------------------|--|
| 1           | Group member name                 | Column (1): Input the name of the unregulated entity where the parent exercises control — Ensure that the name reflected here is consistent with the name reported in Schedule V(b) in order for the auto-links to work on other column items. |
| 2           | Jurisdiction                      | Column (2): The jurisdiction of said unregulated entity shall automatically populate.  |
| 3           | Sector classification             | Column (3): The sector where the said unregulated entity operates in shall automatically populate.   |
| 4           | Strategic purpose                 | Column (4): The description of the strategic purpose of said unregulated entity shall automatically populate.  |
| 5           | Entity type                       | Column (5): The entity type of said unregulated entity shall automatically populate.   |
| 6           | Products and services offered     | Column (6): The description of the products and services offered to external parties by said unregulated entity shall automatically populate.  |
| 7           | Group member category             | Column (7): Select the unregulated entity’s appropriate business category from the drop-down list.   |
| 8           | Percent of participating interest | Column (8): The parent company’s participating interest (in percentage) on said unregulated entity shall automatically populate.   |

| Column Item |                            | Description  |
|-------------|----------------------------|--|
| 9           | Total Assets               | Column (9): The total assets of said unregulated entity shall automatically populate.  |
| 10          | Net Assets                 | Column (10): The net assets of said unregulated entity shall automatically populate.   |
| 11          | Applicable capital charges | Column (11): Supplied by the BMA; the applicable capital charge applied to the unregulated entity will be based on its category (e.g., nature of its business) and shall automatically populate. |
| 12          | Capital Requirement        | Column (12): Calculated using [column (8) x column (10) x column (11)].  |

***Instructions affecting Schedule XI(B)***

- a) The insurance group's capital requirement for unregulated entities where the parent company exercises control over these entities shall be calculated in accordance with Schedule XI(B) and shall form part of the insurance group's BSCR – where 'control' has the same meaning given in subparagraph 19(4) of the Group Rules;
- b) The name of the unregulated entity and its jurisdiction of incorporation shall be provided;
- c) The sector classification of each of the insurance group's unregulated entities where the group exercises control shall be provided as prescribed in the Instructions Affecting Schedule V paragraph (b);
- d) The description of the strategic purpose of each entity shall be provided;
- e) The entity type shall be provided;
- f) The description of the products and services offered to external parties of each entity shall be provided;
- g) The unregulated entities where the parent company exercises control shall be categorised based on the nature of its business activities, as follows: unregulated entities that conduct ancillary services, unregulated non-financial operating entities or unregulated financial operating entities;
- h) The percentage of participating interest on each unregulated entity where the insurance group exercises control shall be provided;

- i) The total assets of each unregulated entity shall be provided;
- j) The net asset value of the group's investment in these unregulated entities shall be provided;
- k) The capital charge applied to each unregulated entity are as follows: 0% to unregulated entities that conduct ancillary services; 15% to unregulated non-financial operating entities; and 50% to unregulated financial operating entities; and
- l) The insurance group's proportionate share of each unregulated entity's capital.



## **C18. SCHEDULE OF UNREGULATED ENTITIES WHERE THE PARENT EXERCISES SIGNIFICANT INFLUENCE (SCHEDULE XI(C))**

### ***Background***

- C18.1 The schedule of unregulated entities where the parent exercises significant influence — Schedule XI(C) — shall provide particulars relating to the group’s unregulated entities where the parent company exercises significant influence.
- C18.2 This shall apply to all entities where the parent company exercises significant influence. In determining whether the parent company significant influence over an unregulated member of the group, the definitions contained in the US, UK, or Canadian GAAP or IFRS, as applicable, shall apply.
- C18.3 The group’s capital requirement for unregulated entities shall be calculated and included under the equity investment risk capital charge. The capital charges applied to each unregulated entities’ investment amount (equity method) are based on the entities’ operating business, as follows:
- a. 5% on unregulated entities that conduct ancillary services, as reported on Form 1, Line (4a).
  - b. 20% on unregulated entities that conduct non-financial operating entities, as reported on Form 1, Line (4b).
  - c. 55% on unregulated entities that conduct financial operating entities, as reported on Form 1, Line (4c).

### ***Items***

| <b>Column Item</b> |                       | <b>Description</b>   |
|--------------------|-----------------------|--|
| 1                  | Group member name     | Column (1): Input the name of the unregulated entity where the parent exercises significant influence — Ensure that the name reflected here is consistent with the name reported in Schedule V(b) in order for the auto-links to work on other column items. |
| 2                  | Jurisdiction          | Column (2): The jurisdiction of said unregulated entity shall automatically populate.  |
| 3                  | Sector classification | Column (3): The sector where the said unregulated entity operates in shall automatically populate.   |
| 4                  | Strategic purpose     | Column (4): The description of the strategic purpose of said unregulated entity shall automatically populate.  |
| 5                  | Entity type           | Column (5): The entity type of said unregulated entity shall automatically populate.   |

| Column Item |  | Description   |
|-------------|--|---|
| 6           | Products and services offered                                | Column (6): The description of the products and services offered to external parties by said unregulated entity shall automatically populate.   |
| 7           | Group member category  | Column (7): Select the unregulated entity's appropriate business category from the drop-down list.  |
| 8           | Percent of participating interest                            | Column (8): The parent company's participating interest (in percentage) on said unregulated entity shall automatically populate.  |
| 9           | Total Assets   | Column (9): The total assets of said unregulated entity shall automatically populate.   |
| 10          | Proportionate share of the investment amount (Equity Method) | Column (10): The investment amount of said unregulated entity, which shall equal to the parent company's carrying amount under equity method, as included or reflected in Form 1, lines (4a), (4b) and (4c) for each business category – ancillary, non-financial and financial – shall automatically populate. |

***Instructions affecting Schedule XI(C)***

- a) The insurance group's capital requirement for unregulated entities where the parent company exercises significant influence shall be calculated in accordance with paragraph 3 under the equity investment risk charge – where “significant influence” has the same meaning given in subparagraph 19(4) of the Group Rules – and Schedule XI(C) shall provide particulars of these entities;
- b) The name of the unregulated entity and its jurisdiction shall be provided;
- c) The sector classification of each of the insurance group's unregulated entities (significant influence) shall be provide as prescribed in the Instructions Affecting Schedule V paragraph (b);
- d) The description of the strategic purpose of each entity shall be provided;
- e) The entity type shall be provided;
- f) The description of the products and services offered to external parties of each entity shall be provided;

- g) The unregulated entities where the parent company exercises significant influence shall be categorised based on the nature of its business activities, as follows: unregulated entities that conduct ancillary services, unregulated non-financial operating entities or unregulated financial operating entities;
- h) The percent of participating interest on each unregulated entity (significant influence) shall be provided;
- i) The total assets of each entity shall be provided; and
- j) The insurance group's proportionate share of the carrying investment amount/value under the equity method.

**C19. SCHEDULE OF ENTITIES' CAPITAL DEDUCTED FROM  
AVAILABLE STATUTORY CAPITAL AND SURPLUS (SCHEDULE  
XI(D))**

***Background***

- C19.1 The schedule of entities' capital deducted from available statutory capital and surplus — Schedule XI(D) — shall calculate capital of entities, where a group cannot supply the necessary data for the BMA to determine a risk profile or to calculate contribution of these entities to the group's eligible capital. Said capital of entities shall be deducted from the group's available statutory capital and surplus for purposes of determining a group's BSCR and ECR ratios.
- C19.2 This shall apply to all entities where the parent company exercises either control or significant influence.

***Items***

| Column Item |                               | Description   |
|-------------|-------------------------------|---|
| 1           | Group member Name             | Column (1): Input the name of the entity where the group cannot supply the necessary data or determine its contributions to the group's eligible capital — Ensure that the name reflected here is consistent with the name reported in Schedule V(b) in order for the auto-links to work on other column items. |
| 2           | Jurisdiction                  | Column (2): The jurisdiction of said entity shall automatically populate.   |
| 3           | Sector classification         | Column (3): The sector where the said entity operates in shall automatically populate.  |
| 4           | Strategic purpose             | Column (4): The description of the strategic purpose of said entity shall automatically populate.   |
| 5           | Entity type                   | Column (5): The entity type of said entity shall automatically populate.  |
| 6           | Products and services offered | Column (6): The description of the products and services offered to external parties by said entity shall automatically populate.   |
| 7           | Participation                 | Column (7): The parent company's participation type (whether control or significant influence) on said regulated entity shall automatically populate.   |
| 8           | Group member category         | Column (8): Select the said entity's appropriate business category from the drop-down list.   |
| 9           | Reason for data deficiency    | Column (9): Select the appropriate reason for deducting said entity's capital from the drop-down list.  |

| Column Item |              | Description  |
|-------------|--------------|--|
| 10          | Total Assets | Column (10): The total assets of said entity shall automatically populate.                   |
| 11          | Net Assets   | Column (11): The net asset or investment amount of said entity shall automatically populate. |

***Instructions affecting Schedule XI(D)***

- a) For entities where an insurance group cannot supply the necessary data for the BMA to determine a risk profile or to calculate contributions of these entities to the group's eligible capital, Schedule XI(D) shall be used to calculate these entities' capital to be deducted from the insurance group's available statutory capital and surplus;
- b) The insurance group shall provide the name and jurisdiction of these entities;
- c) The sector classification of each of the group's member entities shall be provided as prescribed in the Instructions Affecting Schedule V paragraph (b);
- d) The description of the strategic purpose of each entity shall be provided;
- e) The entity type shall be provided;
- f) The description of the products and services offered to external parties of each entity shall be provided;
- g) The parent company's participation categorised, whether control or significant influence, on each entity shall be provided;
- h) The entities shall be categorised based on the nature of its business activities, as follows: unregulated entities that conduct ancillary services, unregulated non-financial operating entities, unregulated financial operating entities, regulated insurance financial operating entities, and regulated non-insurance financial operating entities;
- i) The reason for data deficiency shall be included, as follows: unknown strategic purpose/nature of operations or insufficient information surrounding eligible capital;
- j) The total assets of these entities shall be provided; and
- k) The net assets or equity values of these entities shall be provided.

## **C20. SCHEDULE OF GROUP MINIMUM MARGIN OF SOLVENCY (SCHEDULE XII)**

### ***Background***

- C20.1 The schedule of group minimum margin of solvency — Schedule XII — shall calculate the group's minimum margin of solvency in order to determine its ECR. The principles prescribed in paragraph 19 of the Supervision Rules shall apply in calculating a group's minimum margin of solvency.
- C20.2 This shall apply to all insurance entities within the group, whether the parent company exercises control or significant influence. In determining whether the parent company controls or significant influence over an insurance member of the group, the definitions contained in the US, UK, or Canadian GAAP or IFRS, as applicable, shall apply.

### ***Items***

| <b>Column Item</b> |                                   | <b>Description</b>  |
|--------------------|-----------------------------------|---|
| 1                  | Group member Name                 | Column (1): Input the name of the insurance entity — Ensure that the name reflected here is consistent with the name reported in Schedule V(b) in order for the auto-links to work on other column items. |
| 2                  | Jurisdiction                      | Column (2): The jurisdiction of said insurance entity shall automatically populate.   |
| 3                  | Entity type                       | Column (3): The entity type of said insurance entity shall automatically populate.  |
| 4                  | Participation type                | Column (4): The parent company's participation type (whether control or significant influence) on said insurance entity shall automatically populate.   |
| 5                  | Percent of participation/interest | Column (5): The parent company's participating interest (in percentage) on said insurance entity shall automatically populate.  |
| 6                  | Net Premiums Written              | Column (6): The net premiums written of said insurance entity shall automatically populate.   |
| 7                  | Total Assets                      | Column (7): The total assets of said insurance entity shall automatically populate.   |
| 8                  | Minimum Margin of Solvency        | Column (8): Input the minimum margin of solvency as determined by the jurisdiction where the said insurance entity is registered or licenced.   |

| Column Item |   | Description   |
|-------------|---|---|
| 9           | Proportionate Share on the Minimum Margin of Solvency | Column (9): Calculated using [Column (5) x Column (8)] if the participation on said insurance entity is categorised as significant influence. Otherwise, this amount shall equal to the Minimum Margin of Solvency or Column (8). |

***Instructions affecting Schedule XII***

- a) The name of the registered entity for which the parent company exercises control or significant influence – where “control” and “significant influence” has the same meaning given in subparagraph 19(4) of the Group Rules;
- b) The name of the jurisdiction in which the entity is licenced or registered;
- c) The entity type shall be provided;
- d) The insurance group’s participation categorised, whether control or significant influence, on each registered entity shall be provided;
- e) The group’s participation interest of each registered entity;
- f) Net Premiums Written of these entities shall be provided;
- g) The total assets of these entities shall be provided;
- h) The minimum margin of solvency for each registered entity as determined by the jurisdiction where the group’s entity is licenced or registered; and
- i) The insurance group’s proportionate share of the registered entity’s minimum margin of solvency requirement, as prescribed in subparagraph 19(1) and subparagraph 19(2) of the Group Rules.

## **C21. SCHEDULE OF ELIGIBLE CAPITAL (SCHEDULE XIII)**

### ***Background***

- C21.1 The schedule of eligible capital — Schedule XIII — requires insurance groups to assess the quality of their capital resources eligible to satisfy their regulatory capital requirement levels. The insurance group should report their Eligible Capital on an **EBS basis**.
- C21.2 The purpose of this schedule is to consider the uniqueness of capital instruments in their ability to protect policyholders on a going concern basis, run-off basis and during times of distress such as a winding-up or insolvency in the determination of capital adequacy.
- C21.3 The schedule also takes into consideration that in times of stress situations, the excess of pledged assets that support policyholder obligations are not available to all policyholder until the obligations of the underlying policyholders have been satisfied. Therefore the statutory surplus must be adjusted to recognise the limited accessibility of these assets. Thus this excess of funds is transferred from Tier 1 to Tier 2 Capital which is calculated in Tier 1 Basic Capital item (h).
- C21.4 Further the Authority considers that it would be too punitive that an insurance group maintains capital for these excess of funds for policyholder obligations that have been transferred from Tier 1 to Tier 2 capital, and therefore section (h)(vi) to (h)(xiii) reduces the capital factor charges associated with those assets. The additional guidance provides details on how this capital factor calculation should be completed
- C21.5 Refer to the Insurance (Group Supervision) Rules 2011 for details. A copy of these Rules is available in the BMA website.

### ***Additional Guidance***

#### **Insurance Group does not have any Encumbered Assets for Policyholder Obligations**

- C21.5a If the insurance group does not have any encumbered assets for policyholder obligations, the insurance group shall report the full amount of Best Estimate Technical Provisions in column A, line iv – contracts where policyholder obligations are not collateralised.

#### **Reporting Encumbered Assets for Policyholder Obligations**

- C21.5b When calculating the excess encumbered assets capital charge in section (h)(vi), this shall be done as follows:

- Encumbered Assets - determine the capital charge for the assets reported in section (h)(i), and reduce the capital charge by the insurance group's overall capital diversification.



For example if the insurance group has encumbered assets in a trust equal to \$8,000 which is allocated as:

| Asset                           | Amount         | BSCR Capital Factor | Required Capital |
|---------------------------------|----------------|---------------------|------------------|
| Cash BSCR Rating 1              | \$3,000        | 0.1%                | \$3.00           |
| Sovereign Bonds                 | \$2,000        | 0.0%                | \$0.00           |
| Corporate Bonds Rating 1        | \$500          | 0.4%                | \$2.00           |
| <u>Corporate Bonds Rating 3</u> | <u>\$5,500</u> | <u>1.5%</u>         | <u>\$37.50</u>   |
| <b>Total</b>                    | <b>\$8,000</b> |                     | <b>\$42.50</b>   |

In the same example, the insurance group has BSCR prior to covariance of \$1,500 and the BSCR after covariance adjustment of \$1,200, the diversification credit is 0.8. This is shown as follows:

| Regulatory Capital       | Amount  | Comments  |
|--------------------------|---------|---|
| BSCR prior to covariance | \$1,500 |   |
| BSCR after covariance    | \$1,200 |   |
| Diversification          | 0.8     | BSCR after covariance adjustment <b><u>divided by</u></b> BSCR prior to covariance adjustment (1200/1500) |

Finally apply the diversification credit to the assets held in the trust's capital factor:

| Regulatory capital   | Amount                |
|--|-----------------------|
| Asset in Trust capital factor                              | \$42.50               |
| Diversification credit                                     | <u>0.8</u>            |
| <b>Capital requirements arising from encumbered assets</b> | <b><u>\$34.00</u></b> |

## **C22. EXPANDED PARTICULARS OF CEDED REINSURANCE (SCHEDULE XVIII)**

### ***Background***

- C22.1 To assess the risk of amounts reported in Funds Held By Ceding Reinsurers (Form 1EBS, line 12(c)), the Authority requires insurance groups to determine the arrangement in which the funds are being held. In the event of default, if the Insurance Group bears the risk (as well as the market risk of the valuation of investments), then these amounts are to be reported in Schedule IIA, Schedule of Funds Held by Ceding Reinsurers in Segregated Accounts/Trusts by BSCR Rating; if the reinsurer bears the risk of the assets held, then these amounts are to be reported on Schedule XVIII – Expanded Particulars of Ceded Reinsurance.
- C22.2 Particulars of reinsurance balances shall disclose at least the ten largest reinsurance exposures with the remaining reinsurance exposures grouped according to BSCR ratings and/or a single consolidated reinsurance exposure—
- a) The name of reinsurer;
  - b) The BSCR rating;
  - c) The amount of reinsurance recoverable from it in the form of funds held by ceding reinsurers (as reflected in Form 1EBS, line 12(c) shall be included only to the extent that they are not already included under Schedule IIA
  - d) The amount of any collateral placed in favor of the members of the group relating to the recoverable balances (as reflected in Notes to Form 1EBS, lines 11(e), 17(c), and 27(c));
  - e) The amount of qualifying collateral shall be the collateral amount in d) less a 2% reduction to account for the market risk associated with the underlying collateral assets but, at all times, the qualifying collateral shall not exceed the net exposure, which is the difference between reinsurance recoverable and reinsurance balances payable and there is a contractual right of set-off;
  - f) The net qualifying exposure shall be determined as the net exposure less any funds held by ceding reinsurers included under Schedule IIA and the qualifying collateral;
  - g) For the purposes of this Schedule, the appropriate BSCR rating shall be determined as follows—
    - (i) The BSCR rating shall be based on either the rating of the reinsurer or the rating of the letters of credit issuer, if any, whichever is higher;
    - (ii) Where the letters of credit do not relate to the entire reinsurance exposure, the reinsurance exposure should be separated to reflect

the rating of that portion of the exposure which is covered by the letters of credit and the rating of that portion of the exposure which is not;

- (iii) Where the reinsurer is a domestic affiliate, it shall be assigned a BSCR rating of 0 regardless of its credit rating;
- (iv) Where a reinsurer is not rated but is regulated in a jurisdiction that applies the International Association of Insurance Supervisors' Insurance Core Principles (IAIS' ICPs) and in particular imposes both a minimum capital requirement and a Prescribed Capital Requirement (PCR) and fully meets its PCR in that jurisdiction, it shall be assigned a BSCR rating of 4 or otherwise, it shall be assigned a BSCR rating of 8; and
- (v) Where the insurance group has disclosed a single consolidated reinsurance exposure, that exposure shall be assigned a BSCR rating of 8;
- (vi) Insurance financial strength ratings, reflecting the claims paying ability of (re)insurers, issued by the recognised credit rating agencies shall be used for the purposes of this schedule; the corresponding BSCR ratings shall be determined in the same manner as specified in sections C2.1a to C2.1k instructions affecting Schedule II.

### *Additional Guidance*

#### **Premiums Receivables to be reported on line 10 of Balance Sheet**

- C22.2.i. The Authority would like to confirm that premiums receivables should typically be captured under line 10 of the balance sheet and not line 11. Reinsurance receivables are typically those recoverables that have now been crystallised – hence both reinsurance receivables and recoverables are assessed together from a credit risk perspective. Additionally, the Authority confirms that the line 33 offset against reinsurance balances should only apply to the extent that they are attributable to a specific reinsurer

#### **Capital Risk charge based on nature of the arrangement**

- C22.2.ii. For funds held by ceding companies, the capital risk charge is calculated by the nature of the arrangement.
- a) Where specific assets have been allocated for the benefit of the reinsurer, such that the reinsurer bears market risk on those assets, the Authority requires insurance groups to look through to the underlying assets, and report these balances on Schedule IIA. This effectively adds to the fixed income risk and equity risk modules similar to Schedule II.
  - b) Where there are no specific identified assets, the reinsurer is effectively in a similar position to a typical cedant with reinsurer exposure. Thus, the amounts will be treated similarly to reinsurance recoveries and shall be reported on Schedule XVIII Expanded Particulars of Ceded Reinsurers. Further, the rating for reinsurance exposures should be based on the financial strength ratings of the insurer.

## **C23. SCHEDULE OF CASH AND CASH EQUIVALENT COUNTERPARTY ANALYSIS (SCHEDULE XIX)**

### ***Background***

C23.1 For assessing the underlying credit security of cash and cash equivalent counterparties, the Authority is requiring insurance groups to provide details of the largest 10 exposures and the rating of those institutions. The remaining balance can be aggregated by BSCR rating (which is a similar methodology to the Schedule of Particulars of Ceded Reinsurance).

### ***Instructions Affecting Schedule XIX***

C23.1a Cash and cash equivalent balances are to be reported based on its BSCR Rating;

C23.1b An insurance group may disclose at least the top ten cash and cash counterparty exposures (as reflected in Form 1EBS and Schedule IIA column 1, line 27);

C23.1c The remaining balance may be grouped according to BSCR rating;

C23.1d All unreconciled balances shall be allocated to the single consolidated exposure balance that receives a BSCR Rating of 8;

C23.1e Cash and cash equivalents issued by a country that is rated AA- or better in its own currency shall be classified under BSCR rating class 0;

C23.1f Insurance groups may allocate BSCR Ratings based on the short-term ratings in the table below, or alternatively based on the Long-Term ratings detailed in Schedule II, in each case following the process specified in the instructions affecting Schedule II; and

| BSCR Ratings | Standard & Poor's                                    | Moody's | AM Best      | Fitch  |
|--------------|--|---------|--------------|--------|
| Class 2      | A1+  | P1      | AMB-1+       | F1+    |
| Class 3      | A1   | P2      | AMB-1        | F1     |
| Class 4      | A2, A3   | P3      | AMB-2, AMB-3 | F2, F3 |
| Class 5      |  |         |              |        |
| Class 6      | B-1, B-2   |         |              | B      |
| Class 7      | B-3  |         |              |        |
| Class 8      | Unrated short-term investments and all other ratings |         |              |        |

| BSCR Ratings | KBRA   | DBRS      | Egan-Jones | Japan Credit Rating Agency | Morningstar Credit Ratings |
|--------------|--|-----------|------------|----------------------------|----------------------------|
| Class 2      | K1+  | R-1 H,M   | A-1+       | J1+                        | M1+                        |
| Class 3      | K1   | R-1 L     | A-1        | J1                         | M1                         |
| Class 4      | K2, K3   | R-2 H,M,L | A-2, A-3   | J2                         | M2, M3                     |
| Class 5      |  | R-3       | B-1        | J3                         |                            |
| Class 6      | B  | R-4       | B-2        |                            |                            |
| Class 7      |  |           | B-3        | NJ                         |                            |
| Class 8      | Unrated short-term investments and all other ratings |           |            |                            |                            |

## **C24. SCHEDULE OF CURRENCY RISK (SCHEDULE XX)**

- C24.1 For insurance groups that write business in multiple currencies, the Authority has developed a capital charge for each currency where the insurance group's liabilities may exceed its assets. For the grounds of proportionality, the Authority is requiring insurance groups to provide currency exposures for at least 95% of total assets and liabilities held.
- C24.2 A capital charge is applied for those currencies for which the assets in the currency are less than the sum of the liabilities denominated in the currency plus a proxy BSCR for that currency. The capital charge of 25% is applied to the difference between the liabilities plus proxy BSCR for the currency and the assets held in that currency. The proxy BSCR for a given currency shall be calculated as the product of the liabilities in that currency and the proxy BSCR factor. The Proxy BSCR factor is calculated as the total statutory liabilities found on Form 1EBS line 39 divided by the total ECR Charge. The proxy BSCR factor shall be the maximum of:
- a) The prior year value; or
  - b) Average of the last 3 years.

### ***Instructions Affecting Schedule XX***

- C24.2a At least 95% of an insurance group's total liabilities by currency based on the EBS shall be included;
- C24.2b  $GrossCurrast_i$  and  $GrossCurliab_i$  shall be valued in line with the EBS principles set out in Schedule XIV;
- C24.2c Where an insurance group uses currency hedging arrangements to manage its currency risk, then  $Currast_i$  and  $Curliab_i$  may reflect the impact of those arrangements on  $GrossCurrast_i$  and  $GrossCurliab_i$  of a 25% adverse movement in foreign exchange rates, otherwise the amounts  $GrossCurrast_i$  and  $GrossCurliab_i$  shall apply;
- C24.2d A 'currency hedging arrangement' means derivative or other risk mitigation arrangements designed to reduce losses due to foreign currency exchange movements, and which meet the Authority's requirements to be classed as such; and

### ***Additional Guidance***

#### **Calculating the BSCR Proxy**

- C24.2.i. When calculating the BSCR Proxy, insurance groups are to provide Liabilities (on an EBS basis) and total full (old basis) Group ECR capital charge on an EBS basis for the prior 3 years. In the instance the insurance group does not have liabilities and the Group ECR capital charge on an EBS basis, the Authority will

allow insurance groups to provide the non-EBS balances for each. Note that for financial year-ends within the BSCR transitional period, insurance groups are to report the full old-basis BSCR for that period.

- C24.2.ii. If the insurance group does not have either liabilities or Group ECR capital charge for the prior 3 years,
- a) Insurance groups filing their BSCR for the first time are to use current year figures for the prior year and;
  - b) Insurance groups that have previously filed a BSCR, yet do not have 3 years of historical data shall provide the years they have data for, and leave the years with no data reported as blank

**Meeting the 95% Minimum Asset and Liability test**

- C24.2.iii. If an insurance group does not meet the 95% minimum test on this schedule regarding how it will impact the BMA's risk assessment of the insurance group.
- a) The Authority may require additional information from the insurance group to assess its currency risk. This may result in a capital add-on, which will require the insurance group's ECR and TCL ratios to be revised on its published Financial Condition Report.

**Reporting Assets and Liabilities with hedging arrangements**

- C24.2.iv. For insurance groups that have been provided approval from the Authority for including hedging arrangements in their currency risk schedule, they shall report the total asset and liability of such currency hedge before and after the hedging arrangement.

Example: If an insurance group had \$1.2 million in USD Assets, \$0.75 million in USD Liabilities; £0.5million in Sterling Pound Assets and £0.4 million in Sterling Pound Liabilities; \$0.25 million in Canadian Dollar Assets and \$0.10 million in Canadian Dollar Liabilities; which the insurance group had an approved asset hedge of \$0.2 million from USD to Sterling pound, this would be represented as follows:

| Currency        | Assets  | Assets with Hedging Arrangements | Liabilities | Liabilities with Hedging Arrangements |
|-----------------|---------|----------------------------------|-------------|---------------------------------------|
| USD             | \$1.2M  | \$1.0M                           | \$0.75M     | \$0.75M                               |
| Sterling Pound  | £0.5M   | £0.7M                            | £0.4M       | £0.4M                                 |
| Canadian Dollar | \$0.25M |                                  | \$0.10M     |                                       |

## **C25. SCHEDULE OF CONCENTRATION RISK (SCHEDULE XXI)**

### ***Background***

- C25.1 To assess the insurance group's concentration risk, the Authority requires the identification of largest 10 independent exposures relating to all instruments (such as equity holdings, bonds, real estate, loans, etc.), which would be an addition to the existing BSCR market and/or credit risk contributed by those exposures.
- C25.2 In deciding which counterparties need to be grouped together, a single counterparty should include all related/connected counterparties, which are defined as:
- a) Control relationship: one of the counterparties, directly or indirectly, has control over the other(s); and
  - b) Economic inter-dependence: if one of the counterparties were to experience financial problems, in particular funding or repayment difficulties, the other(s) as a result, would also be likely to encounter funding or repayment difficulties.

### ***Instructions Affecting Schedule XXI***

C25.2a Disclosure of an insurance group's ten largest exposures to single counterparty risk by reporting the name, the exposure and allocation by asset type, bond / mortgage type (if applicable), BSCR Rating (if applicable) and asset value consistent with Form 1EBS.

C25.2b A counterparty shall include all related/connected counterparties defined as:

- a) Control relationship: if the counterparty, directly or indirectly, has control over the other(s); or
- b) Economic interdependence: if one of the counterparties were to experience financial problems, in particular funding or repayment difficulties, the other(s) as a result, would also be likely to encounter funding or repayment difficulties.

C25.2c Asset type (column A) shall be one of the following lines taken from Form 1EBS;

- a) Cash and Cash Equivalents (line 1)
- b) Quoted Investments (line 2)
- c) Unquoted investments (line 3)
- d) Investments in and Advances to Affiliates (line 4)
- e) Investments in Mortgage Loans on Real estate (line 5)
- f) Policy Loans (line 6)
- g) Real Estate (line 7)
- h) Collateral Loans (line 8)



- i) Funds Held by Ceding Reinsurers (line 12)
- C25.2d Asset sub-type (column B) shall provide further details of the type of asset as included in table 1, table 2 or table 8 as appropriate;
- C25.2e BSCR Rating (Column C) shall be the BSCR rating that was allocated to the asset when it was included in table 1, table 2 or table 8 as appropriate;
- C25.2f Asset value (column D) shall be the value of the asset as required by the EBS valuation principles as set out in Schedule XIV; and

***Additional Guidance***

**Reporting largest 10 independent exposures**

- C25.2.i. Complete the schedule by providing the 10 largest independent exposures relating to all instruments (e.g., equity holdings, bonds, real estate, loans, etc.) largest counterparties. If a counterparty has more than one BSCR Rating or Asset type, enter each rating separately (i.e., if an insurance group has purchased bonds and preferred shares of a company, then the insurance group is to report 'Asset type' as 'Bond types'; 'Bond/Mortgage Loan type' as the applicable bond type, and 'BSCR Rating' as the rating of the bond in one line. In the second line, the insurance group is to report the 'Asset type' as 'Preferred Shares' and 'BSCR Rating' as the rating of the shares.

**Hedge funds**

- C25.2.ii. When counterparty exposure to collective investment funds such, as hedge funds and diversified fund-of-one structures, insurance groups are to report the portfolio on a look-through basis.

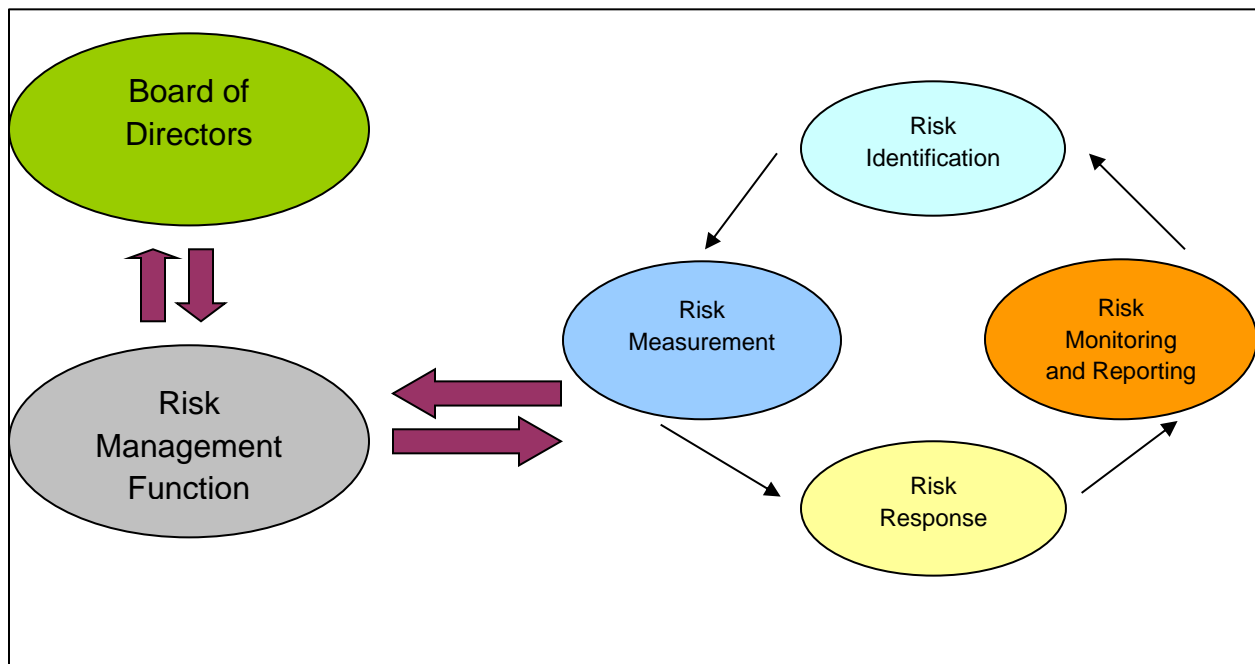
**Investment in Affiliates types**

- C25.2.iii. For investment in affiliates, allocate based on the following categories:
- a) Regulated entity – an entity that files to a regulatory body or supervisory authority; note that each regulated entity is required to provide the RCR equivalent to the BMA's ECR;
  - b) Operating entity – is an entity that sells products and takes on business risk;
  - c) Unregulated entities that conduct ancillary services – refers to unregulated entities that provide support services to the primary activities of an insurance group (this would include marketing, information;
  - d) Unregulated non-financial operating entities – refers to an entity that sells products and takes on business risk (e.g., department stores and automobile sales); and
  - e) Unregulated financial operating entities – refers to an entity that sells financial instruments (include.g., Credit Default Swaps (CDS) and weather derivatives).

## C26. COMMERCIAL INSURER RISK ASSESSMENT

### *Background*

- C26.1 The Commercial Insurer Risk Assessment (CIRA) framework assesses the quality of the group's risk management function surrounding its operational risk exposures. Operational risk is the risk of loss arising from inadequate or failed internal processes, people, systems or external events. Operational risk also includes legal risks. Reputational risks arising from strategic decisions do not count as operational risks. The CIRA framework emphasises the interrelationships between the Risk Management and Corporate Governance functions as seen below:



- C26.2 The parent company's Board of Directors has an influential role in establishing, inter alia, the strategic direction and risk culture of the parent company. The BMA views the risk management function as a critical tool to furnish the board with the necessary information to make appropriate decisions and assist the group's management in steering the organisation forward
- C26.3 The risk management function within the CIRA has four components: Risk Identification, Risk Measurement, Risk Response, and Risk Monitoring & Reporting. The group will undertake the self-assessment by answering the questions related to the calibre of its risk management processes in place to address the material risk arising from each operational risk area.
- C26.4 The CIRA framework embodies a maturity model approach to identify a group's developmental stage with respect to a specific operational risk area. It rewards the group for achieving progress in each risk management area. It reviews the following eight operational risk exposures as follows:
- a) Business Processes Risk – includes a risk of errors arising from data entry, data processing, or application design.
  - b) Business Continuity Risk – includes a risk of an event that threatens or disrupts an insurance group's continuous operations.
  - c) Compliance Risk – includes a risk of legal or regulatory breaches or both.
  - d) Information System Risk – includes a risk of unauthorised access to systems and data, data loss, utility disruptions, software and hardware failures, and inability to access information systems.
  - e) Distribution Channels Risk – includes a risk of disruption to an insurance group's distribution channel arising from employment of inexperienced or incapable brokers or agents.
  - f) Fraud Risk – includes a risk of misappropriation of assets, information theft, forgery, or fraudulent claims.
  - g) Human Resources Risk – includes a risk of employment of unethical staff, inexperience or incapable staff, failure to train or retain experienced staff, and failure to adequately communicate with staff.
  - h) Outsourcing Risk – includes a risk of miscommunication of responsibilities in relation to outsourcing, breach of outsource service agreements or entering into inappropriate service agreements.
- C26.5 The CIRA framework applies the components within the Risk Management function to each operational risk area. The group assesses each operational risk area and selects the applicable descriptor under the 'Dimension' column that reflects the developmental stage of the group's process surrounding the specific risk area

C26.6 In order to be credited for a relevant score within the CIRA Framework, the group must fulfil the criteria in the 'Dimension' column. In its assessment, if the group finds itself between stages, the group must select the lower stage. The insurance group can supplement the selection with additional comments that can be made at the end of each risk management function.

C26.7 The total scores for each component within the CIRA Framework are aggregated and produce the pertinent Operational Risk Charge percentage. The Operational Risk Charge ranges from 1% to 10%. The relevant Operational Risk Charge percentage is applied to the 'BSCR (After Covariance Adjustment)' subtotal. The resultant figure is the Operational Risk Capital Charge.

#### Items

- a) Corporate Governance – the group assesses each statement in the 'Dimension' column and places an 'X' in the column 'Implemented' where the corporate governance function meets the criteria (200 points for each fulfilled area). The worksheet will automatically aggregate all scores.

The insurance group may provide comments in the space provided to support its responses.

*Parent Company's Board of Directors*

| Dimension   | Implemented | Score |
|---|-------------|-------|
| Sets risk policies, practices and tolerance limits for all material foreseeable operational risks at least annually and ensures they are communicated to insurance group entities |             | 200   |
| Monitors adherence to operational risk tolerance limits more regularly than annually  |             | 200   |
| Sets risk policies, practices and tolerance limits for all material foreseeable operational risks at least annually and ensures they are communicated to insurance group entities |             | 200   |
| Monitors adherence to operational risk tolerance limits more regularly than annually  |             | 200   |
| Sets risk policies, practices and tolerance limits for all material foreseeable operational risks at least annually and ensures they are communicated to insurance group entities |             | 200   |
| Monitors adherence to operational risk tolerance limits more regularly than annually  |             | 200   |

- b) Risk Management function – the group assesses each statement in the ‘Dimension’ column and places an ‘X’ in the column ‘Implemented’ where the Risk Management function meets the criteria (150 points for each fulfilled area). The worksheet will automatically aggregate all scores.

The insurance group may provide comments in the space provided to support its responses.

*Risk Management Function:*

| Dimension   | Implemented | Score |
|---|-------------|-------|
| Is independent of other operational units and has direct access to the parent company's board of directors  |             | 150   |
| Is entrenched in strategic planning, decision making and budgeting process  |             | 150   |
| Ensures that the risk management procedures and policies are well documented and approved by the parent company's board of directors  |             | 150   |
| Ensures the risk management policies and procedures are communicated throughout the insurance group   |             | 150   |
| Reviews operational risk management processes and procedures at least annually  |             | 150   |
| Ensures that loss events arising from operational risks are documented and loss event data is integrated into enterprise risk management  |             | 150   |
| Documents its risk management recommendations for operational units, ensures that deficiencies have remedial plans and progress on the execution of such plans is reported to the parent company's board of directors at least annually |             | 150   |

c) Risk Identification – the insurance group is to answer the following question:

“Has the insurance group taken steps to identify material risks arising from the Operational Risk areas identified below?”

If the answer to the question is ‘No’ then the insurance group does not have to complete the matrix/grid. If the answer to the question is ‘Yes’ then the group is to identify the stage of progression of each Operational Risk area based on the Dimension descriptor. The insurance group is then to input an ‘X’ in the grid corresponding to the stage in the matrix table under the relevant Operational Risk area.

The insurance group may provide comments in the space provided to support its responses.

*Risk Identification Processes:*

| Progression |         | Dimension  | Operational Risk Areas |      |             |                      |                    |                     |      |            |
|-------------|---------|--|------------------------|------|-------------|----------------------|--------------------|---------------------|------|------------|
| Stage       | Scoring |  | Fraud                  | HR * | Outsourcing | Distribution Channel | Business Processes | Business Continuity | IT** | Compliance |
| 1           | 50      | ‘Ad hoc’   |                        |      |             |                      |                    |                     |      |            |
| 2           | 100     | Implemented but not standardised across the insurance group  |                        |      |             |                      |                    |                     |      |            |
| 3           | 150     | Implemented, well documented policies and procedures that are understood by relevant staff, and standardised across the entire insurance group |                        |      |             |                      |                    |                     |      |            |
| 4           | 200     | In addition to Stage 3, processes are reviewed at least annually with the view to assessing effectiveness and introducing improvements         |                        |      |             |                      |                    |                     |      |            |

\*HR – Human Resources

\*\*IT – Information Technology

d) Risk Measurement – the insurance group is to answer the following question:

‘Has the insurance group taken steps to measure material risks arising from the Operational Risk areas identified below?’

If the answer to the question is ‘No’ then the insurance group does not have to complete the matrix/grid. If the answer to the question is ‘Yes’ then the insurance group is to identify the stage of progression of each Operational Risk area based on the Dimension descriptor. The insurance group is then to input an ‘X’ in the grid corresponding to the stage in the matrix table under the relevant Operational Risk area.

The insurance group may provide comments in the space provided to support its responses.

*Risk Measurement Processes:*

| Progression |         | Dimension  | Operational Risk Areas |    |             |                      |                    |                     |    |            |
|-------------|---------|--|------------------------|----|-------------|----------------------|--------------------|---------------------|----|------------|
| Stage       | Scoring |  | Fraud                  | HR | Outsourcing | Distribution Channel | Business Processes | Business Continuity | IT | Compliance |
| 1           | 50      | ‘Ad hoc’   |                        |    |             |                      |                    |                     |    |            |
| 2           | 100     | Implemented but not standardised across the insurance group  |                        |    |             |                      |                    |                     |    |            |
| 3           | 150     | Implemented, well documented policies and procedures that are understood by relevant staff, and standardised across the entire insurance group |                        |    |             |                      |                    |                     |    |            |
| 4           | 200     | In addition to Stage 3, processes are reviewed at least annually with the view to assessing effectiveness and introducing improvements         |                        |    |             |                      |                    |                     |    |            |

e) Risk Response – the insurance group is to answer the following question:  
‘Has the insurance group taken steps to control and/or mitigate material risks arising from the Operational Risk areas identified below?’

If the answer to the question is ‘No’ then the insurance group does not have to complete the matrix/grid. If the answer to the question is ‘Yes’ then the insurance group is to identify the stage of progression of each Operational Risk area based on the Dimension descriptor. The insurance group is then to input an ‘X’ in the grid corresponding to the stage in the matrix table under the relevant Operational Risk area.

The insurance group may provide comments in the space provided to support its responses.



*Risk Response Processes:*

| Progression |         | Dimension  | Operational Risk Areas |    |             |                      |                    |                     |    |            |
|-------------|---------|--|------------------------|----|-------------|----------------------|--------------------|---------------------|----|------------|
| Stage       | Scoring |  | Fraud                  | HR | Outsourcing | Distribution Channel | Business Processes | Business Continuity | IT | Compliance |
| 1           | 50      | ‘Ad hoc’   |                        |    |             |                      |                    |                     |    |            |
| 2           | 100     | Implemented but not standardised across the insurance group  |                        |    |             |                      |                    |                     |    |            |
| 3           | 150     | Implemented, well documented policies and procedures that are understood by relevant staff, and standardised across the entire insurance group |                        |    |             |                      |                    |                     |    |            |
| 4           | 200     | In addition to Stage 3, processes are reviewed at least annually with the view to assessing effectiveness and introducing improvements         |                        |    |             |                      |                    |                     |    |            |

f) Risk Monitoring & Reporting – the insurance group is to answer the following question:  
‘Has the insurance group taken steps to monitor and report material risks arising from the Operational Risk areas identified below?’

If the answer to the question is ‘No’ then the insurance group does not have to complete the matrix/grid. If the answer to the question is ‘Yes’ then the insurance group is to identify the stage of progression of each Operational Risk area based on the Dimension descriptor. The insurance group is then to input an ‘X’ in the grid corresponding to the stage in the matrix table under the relevant Operational Risk area.

The insurance group may provide comments in the space provided to support its responses.

*Risk Monitoring & Reporting Processes:*

| Progression |         | Dimension  | Operational Risk Areas |    |             |                      |                    |                     |    |            |
|-------------|---------|--|------------------------|----|-------------|----------------------|--------------------|---------------------|----|------------|
| Stage       | Scoring |  | Fraud                  | HR | Outsourcing | Distribution Channel | Business Processes | Business Continuity | IT | Compliance |
| 1           | 50      | ‘Ad hoc’   |                        |    |             |                      |                    |                     |    |            |
| 2           | 100     | Implemented but not standardised across the insurance group  |                        |    |             |                      |                    |                     |    |            |
| 3           | 150     | Implemented, well documented policies and procedures that are understood by relevant staff, and standardised across the entire insurance group |                        |    |             |                      |                    |                     |    |            |
| 4           | 200     | In addition to Stage 3, processes are reviewed at least annually with the view to assessing effectiveness and introducing improvements         |                        |    |             |                      |                    |                     |    |            |

g) Operational Risk Charge calculation

Subject to the BMA having a different opinion and reassessing the charge through an onsite inspection, the ‘Total Operational Risk Capital Charge’ is applied to the insurance group’s BSCR (After Covariance Adjustment) sub-total for purposes of arriving at its ECR for the year-end filing.

- (i) Overall CIRA Score – the aggregate of all the total scores from the Corporate Governance, Risk Management function, Risk Identification, Risk Measurement, Risk Response, Risk Monitoring & Reporting assessment used to determine the Operational Risk Charge %.
- (ii) CIRA Scoring Grid – the applicable Operational Risk Charge % that would be used to determine the insurance group’s Total Operational Risk Capital Charge.

| Overall Score  | Applicable Operational Risk Charge % 'BSCR (After Covariance Adjustment)' |
|----------------|---|
| <= 5200        | 10%   |
| > 5200 <= 6000 | 9%  |
| > 6000 <= 6650 | 8%  |
| > 6650 <= 7250 | 7%  |
| > 7250 <= 7650 | 6%  |
| > 7650 <= 7850 | 5%  |
| > 7850 <= 8050 | 4%  |
| > 8050 <= 8250 | 3%  |
| > 8250 <=8450  | 2%  |
| > 8450         | 1%  |

(iii) Total Operational Risk Capital Charge – calculated using the [Operational Risk Charge % x BSCR (After Covariance Adjustment)].

## **C27. SCHEDULE OF FIXED INCOME AND EQUITY INVESTMENTS BY BSCR RATING (SCHEDULE IIB)**

### ***Background***

C27.1 The schedule of fixed income and equity investments by BSCR rating (Schedule IIB), provides a breakdown of an insurance group's:

- a) Bonds and Debentures by both investment category (Corporate & Sovereign Bonds, Residential Mortgage-Backed Securities, Commercial Mortgage-Backed Securities/Asset-Backed Securities and Bond Mutual Funds) and BSCR ratings (Ratings 0-8);
- b) Equity Investments by asset category (Long Exposures, Short Exposures for Qualifying Assets held for Risk Mitigation Purposes and Short Exposures for Non-Qualifying as Assets for Risk Mitigating Purposes) and liability category (Without Management Actions and with Management Actions);
- c) Spread risk for credit derivatives by spread up (for long and short exposures) and spread down for (for long and short exposures);
- d) Counterparty default risk for over-the-counter derivatives by market value of derivatives with positive market values, market value of derivatives with negative market value and market value of collateral excluding any over collateralisation; and
- e) Cash and Cash Equivalents

The amounts reported on Schedule IIB should reflect the balances as shown on Form 1EBS lines 2(f) Quoted Investments, 3(f) Unquoted investments and 13(a) Derivatives after look-through (where applicable).

C27.2 This schedule applies a capital charge to fixed income investments based on the type of category and rating of the security held; and a shock to equity investments based on the type of investment. The fixed income and equity charges are aggregated in the fixed income and equity risk tabs, respectively. Further, this information provides the BMA with the type and quality of investments held for assessing the insurance group's market risk. It is noted that the balances reported on this schedule are to be included in:

- a) Where interest-rate sensitive, to be included in Interest Rate/Liquidity Risk charge calculation along with the interest-rate sensitive values reported on Schedules IIC – IIF; and
- b) Balances in Schedule XIXA Cash and Cash Equivalents.

### ***Items***

C27.3 The schedule is broken into five separate sections for which the total of each should, after reconciling for look-through, correspond to balances reported on Form 1EBS for the relevant year. In the absence of look-through, the following (points a-d) should hold:

- a) Quoted and unquoted bonds and debentures, and Investment in Mortgage Loans on Real Estate – line 14, column (11) ‘Total’ corresponds to Form 1EBS, Line 2(b), 3(b) and 5(c);
- b) Quoted and unquoted equities – Line 37, column (11) ‘Total’ corresponds to Form 1EBS, line 2(d) and 3(d);
- c) Derivatives instruments – line 47, columns (1, 3, 6 and 8) and line 57, columns (1, 2 and 3) corresponds to Form 1EBS 13(a);
- d) Cash and Cash Equivalents – line 58, column (1) corresponds to cash and cash equivalents from hedge funds as reported on Form 1EBS lines 2(e) and 3(e); and
- e) Quoted and unquoted investments corresponds to hedge funds as reported on Form 1EBS lines 2(e) and 3(e) – is to be reported on a look-through basis and allocated in sections a-d above.

***Instructions Affecting Schedule IIB***

- C27.3a Fixed income investments, both quoted and unquoted, shall be categorised into corporate bonds and sovereign bonds, residential MBS, commercial MBS/asset-backed securities, and bond mutual funds and classified by BSCR rating;
- C27.3b Equity investments, both quoted and unquoted, shall be categorised into long exposures; short exposures qualifying as assets held for risk-mitigation purposes in accordance with criteria prescribed in section B5; and short exposures not qualifying as assets held for risk-mitigation purposes in accordance with criteria prescribed in section B5 and are further required to be classified by strategic holdings, duration based, listed equity securities, preferred stocks, other equities, letters of credit, intangible assets, pension benefit surplus, infrastructure, derivatives and real estate;
- C27.3c Preferred stock shall be classified by BSCR rating;
- C27.3d The BSCR ratings for fixed income securities and preferred stocks shall be determined in the manner specified in the instructions affecting Schedule II;
- C27.3e Where a security is rated differently by various rating agencies, the insurance group shall classify the security according to the most conservative rating assigned;
- C27.3f Unrated securities shall be assigned a BSCR rating of 8;
- C27.3g Sovereign debt issued by a country in its own currency that is rated AA- or better shall be classified under BSCR rating 0; while all other sovereign bonds are required to be classified in a manner similar to corporate bonds;
- C27.3h Debt issued by government-owned or entities that are explicitly guaranteed by that government, (except government issued MBS), shall be assigned a BSCR rating of 0,

provided that the country is rated AA- or better and the debt is in the local currency of the country and otherwise classified in a similar manner as corporate bonds;

- C27.3i 'Exposures' shall include those determined by the application of the 'look-through' approach calculated in accordance with criteria prescribed in section B7 for collective investment vehicles and other investments packaged as funds;
- C27.3j 'Strategic holdings' refers to holdings in qualifying equity investments of a strategic nature which meet the criteria prescribed in section B8.7 for such holdings. Where such investments are listed on a designated stock exchange or are investments in certain funds both meeting criteria prescribed by the Authority, then such investments will be classified as 'Type 1'. Investments that do not meet such criterion shall be classified as 'Type 2'.
- C27.3k 'Infrastructure' refers to holdings in qualifying equity infrastructure investments which meet criteria prescribed in section B8.3 for such investments that are non-strategic holdings.
- C27.3l 'Listed equity securities in developed markets' refers to holdings in equity securities listed on designated stock exchanges or investments in certain funds prescribed in section B8.6 Certain qualifying unlisted equity investments may also be included under this category instead of the 'Other Equities' category under conditions set out in section B8.4.
- C27.3m 'Other equities' shall include holdings in quoted and unquoted equity investments that are not reported in accordance with the requirements of paragraphs '(j)' and '(l)' above; or not listed herein as an 'Equity Holding' in this schedule (i.e., equities not listed on a designated stock exchange prescribed by the Authority, hedge funds, commodities and other alternative investments);
- C27.3n Best estimate insurance liabilities and other liabilities (excluding risk margin) whose value is subject to equity risk are to be included in lines 31 to 46;
- C27.3o Exposures qualifying as assets held for risk-mitigation purposes, and exposures not qualifying as assets held for risk-mitigation purposes; shall be determined in accordance with criteria prescribed in section B5;
- C27.3p For all exposures other than derivatives, a default calculation of after-shock value is provided to expedite the filling of the schedule. It is expected that the default calculation will be appropriate in the majority of cases<sup>4</sup>; however, the insurance group always needs to review the appropriateness and approve any resulting values. If the

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<sup>4</sup> In particular, this is true for all 'delta-one assets', such as common stocks and funds, for which the application of an x% downwards shock is equivalent to reducing the market value (price) by x%.

default formula is not appropriate for certain asset class, or for certain instruments within an asset class, the insurance group is responsible for entering correct after-shock values by overriding the default formula; and

- C27.3q For derivatives, no default formula can be provided due to the non-linearity of the change in value. That is, the change in derivative value (in percentages) is generally different from the shock (in percentages) that is applied to the underlying of the derivative.

### *Additional Guidance*

#### **Applying a BSCR Rating to unquoted internally rated investments**

- C27.3.i. Insurance groups that have developed an internal rating for unquoted investments shall apply a BSCR rating of 8. Nevertheless, if an insurance group would like to request permission to use an equivalent scale of these investments in their BSCR filing, the insurance group shall request such permission in writing to the BMA and include details on the internal rating assessment and a proposed equivalent scale to the BSCR Rating scale. Only upon approval shall the insurance group reclassify an unquoted investment from BSCR Rating 8.

#### **GNMA, FNMA and FHLMC are not eligible for BSCR Rating 0**

- C27.3.ii. Securities that have a BSCR rating 0 have been defined as ‘Sovereign debt issued by a country in its own currency that is rated AA- or better’, however the Authority would like to acknowledge that Government National Mortgage Association (GNMA), Federal National Mortgage Association (FNMA) and Federal Home Loan Mortgage Corporation (FHLMC) are not eligible for the sovereign bond classification BSCR Rating 0 and shall be reported under Mortgage-Backed Securities (MBS). While the Authority acknowledges that an explicit government guarantee applies to the credit risk for GNMA-insured mortgages uncertainty remains with the timing of the mortgage loan repayments. Consequently, the Authority does not extend the sovereign debt treatment to MBS.

#### **MBS to use NAIC Rating**

- C27.3.iii. MBS do not always adequately reflect the risk associated with being held at less than par value. For this reason, the National Association of Insurance Commissioners (NAIC) has modeled these bonds and provides US insurers with a rating reclassification. The Authority shall allow insurance groups the option to use these reclassifications when summarising their portfolio. In instances where an instrument has a rating from a rating agency that would put it in BSCR rating classes 1-2, and it has also been classified as NAIC ratings class 1 (equivalent to BSCR rating class 3), then the better BSCR ratings class may be selected. The Authority requires insurance groups to provide a separate summary of the Form 1EBS value by BSCR rating class, both before and after the adjustment.

The NAIC reclassifications of MBS will be assigned to the BSCR ratings classes according to the following table:

| <b>BSCR<br/>Rating<br/>Class</b> | <b>NAIC<br/>(for MBS Only)</b> |
|----------------------------------|--------------------------------|
| 0                                |                                |
| 1                                |                                |
| 2                                |                                |
| 3                                | 1                              |
| 4                                | 2                              |
| 5                                | 3                              |
| 6                                | 4                              |
| 7                                | 5                              |
| 8                                | 6                              |

Some Residential MBS bonds are not directly modeled by the NAIC, including bonds held by insurers that do not have a United States presence. The NAIC provides a documented four-step process as part of its SSAP No. 43R for reclassifying such bonds based on their rating and their Form 1EBS value relative to par. The Authority shall allow companies to optionally follow this process in classifying bonds that have not been formally reclassified by the NAIC.

#### **Affiliated balances**

- C27.3.iv. Investments in Affiliates are to be treated like any other financial investment unless they fulfil the criteria prescribed in section B7.7 as ‘Strategic Holdings’. Otherwise, the affiliate investment is to be allocated as an equity holding in lines 15-36.



## **C27. SCHEDULE OF FUNDS HELD (SCHEDULE IIC)**

### ***Background***

- C27.1 To assess the risk of amounts reported in Funds Held By Ceding Reinsurers (Form 1EBS, line 12(c)), the Authority requires insurance groups to determine the arrangement in which the funds are being held. In the event of default, if the reinsurer bears the risk of the assets held, then these amounts are to be reported on Schedule XVIII – Schedule of Particulars of Ceded Reinsurance; if the insurance group bears the risk (as well as the market risk of the valuation of investments), then these amounts are to be reported in Schedule IIC – Schedule of Funds Held.
- C27.2 The Schedule of Funds Held — Schedule IIC — provides the BMA with details to assess the type and quality of investment held by requiring the insurance group to allocate the balances by investment category and BSCR Rating (similar to investments reported on Schedule IIB). Further the balances reported on Schedule IIC also are used in the calculation for the Interest Rate/Liquidity Risk and Cash and Cash Equivalents exposure.
- C27.3 The investment categorisation and BSCR ratings shall be based on the same rating scale and principles as those found on Schedule IIB.

### ***Items***

- C27.4 The amounts reported should correspond to balances reported on Form 1EBS line 12(c) and is allocated in the following five sections:
- a) Quoted and Unquoted Bonds and Debentures, and Investment in Mortgage Loans on Real Estate;
  - b) Quoted and Unquoted Equities;
  - c) Derivatives Instruments;
  - d) Cash and Cash Equivalents; and
  - e) Quoted and Unquoted Investments.

### ***Instructions Affecting Schedule IIC***

- C27.4a All funds held by ceding reinsurers (as reported in Form 1EBS, line 12(c)) and funds held under retrocession (as reported in Form 1EBS, line 34(c)) with identifiable assets and liabilities, such as fixed income investments, equity investments, mortgage loans, derivatives, hedge funds and cash and cash equivalents, are required to be included here, reported on a look-through basis according to section B7, where applicable;

## **C28. SCHEDULE OF SEGREGATED ACCOUNTS (SCHEDULE IID)**

### ***Background***

- C28.1 The schedule of Segregated Accounts (Schedule IID) provides a breakdown of an insurance group's segregated accounts by:
- a) Bonds and Debentures by both investment category (Corporate & Sovereign Bonds, Residential Mortgage-Backed Securities, Commercial Mortgage-Backed Securities/Asset-Backed Securities and Bond Mutual Funds) and BSCR ratings (Ratings 0-8);
  - b) Equity Investments by asset category (Long Exposures, Short Exposures for Qualifying Assets held for Risk Mitigation Purposes and Short Exposures for Non-Qualifying as Assets for Risk Mitigating Purposes) and liability category (Without Management Actions and with Management Actions);
  - c) Spread risk for credit derivatives by spread up (for long and short exposures) and spread down for (for long and short exposures);
  - d) Counterparty default risk for over-the-counter derivatives by market value of derivatives with positive market values, market value of derivatives with negative market value and market value of collateral excluding any over-collateralisation; and
  - e) Cash and Cash Equivalents
- C28.2 This schedule applies a capital charge to fixed income investments based on the type of category and rating of the security held; and a shock to equity investments based on the type of investment. The fixed income and equity charges are aggregated in the fixed income and equity risk tabs, respectively. Further this information provides the BMA with the type and quality of investments held for assessing the insurance group's market risk. It is noted that the cash and cash equivalent balances reported on this schedule are to be included in the balances in Schedule XIXA Cash and Cash Equivalents.
- C28.3 The investment categorisation and BSCR ratings shall be based on the same rating scale and principles as those found on Schedule IIB.

### ***Items***

- C28.4 The amounts reported should correspond to balances reported on Form 1EBS lines 13(b, c and d) and 36 (c, d and e) and is allocated in the following five sections:
- a) Quoted and unquoted bonds and debentures, and Investment in Mortgage Loans on Real Estate;
  - b) Quoted and unquoted equities;
  - c) Derivatives instruments;
  - d) Cash and Cash Equivalents; and
  - e) Quoted and unquoted investments.

***Instructions Affecting Schedule IID***

- C28.4a All segregated account companies with identifiable assets (as reported in Form 1EBS, lines 13(b), (c), (d)) and liabilities (as reported in Form 1EBS, lines 36(c), (d), (e)), such as fixed income investments, equity investments, mortgage loans, and cash and cash equivalents, shall be included here;
- C28.4b Fixed Income investments (lines 1-13): In columns 2, 4, 6, 8, and 10, insurance groups shall only enter liabilities that are directly linked to, and move in line with, corresponding assets entered in columns 1, 3, 5, 7, and 9, respectively. Only such linked liabilities are allowed to offset the risk charge on assets, up to the amount of assets to which they correspond. Any liabilities not directly linked to assets reflected in the schedule shall be ignored in the fixed income risk calculation.

## **C29. SCHEDULE OF DEPOSIT ASSETS AND LIABILITIES (SCHEDULE IIE)**

### ***Background***

- C29.1 The schedule of Deposit Assets and Liabilities (Schedule IIE) provides a breakdown of an insurance group's deposit assets and liabilities:
- a) Bonds and Debentures by both investment category (Corporate & Sovereign Bonds, Residential Mortgage-Backed Securities, Commercial Mortgage-Backed Securities/Asset-Backed Securities and Bond Mutual Funds) and BSCR ratings (Ratings 0-8);
  - b) Equity Investments by asset category (Long Exposures, Short Exposures for Qualifying Assets held for Risk Mitigation Purposes and Short Exposures for Non-Qualifying as Assets for Risk Mitigating Purposes) and liability category (Without Management Actions and with Management Actions);
  - c) Spread risk for credit derivatives by spread up (for long and short exposures) and spread down (for long and short exposures);
  - d) Counterparty default risk for over-the-counter derivatives by market value of derivatives with positive market values, market value of derivatives with negative market value and market value of collateral excluding any over-collateralisation; and
  - e) Cash and Cash Equivalents
- C29.2 This schedule applies a capital charge to fixed income investments based on the type of category and rating of the security held; and a shock to equity investments based on the type of investment. The fixed income and equity charges are aggregated in the fixed income and equity risk tabs, respectively. Further this information provides the BMA with the type and quality of investments held for assessing the insurance group's market risk. It is noted that the cash and cash equivalent balances reported on this schedule are to be included in the balances in Schedule XIXA Cash and Cash Equivalents.
- C29.3 The investment categorisation and BSCR ratings shall be based on the same rating scale and principles as those found on Schedule IIB.

### ***Items***

- C29.4 The amounts reported should correspond to balances reported on Form 1EBS lines 13(e) Deposit Assets and 36(f) Deposit Liabilities and is allocated in the following five sections:
- a) Quoted and unquoted bonds and debentures, and Investment in Mortgage Loans on Real Estate;
  - b) Quoted and unquoted equities;
  - c) Derivatives instruments;
  - d) Cash and Cash Equivalents; and

- e) Quoted and unquoted investments.

***Instructions Affecting Schedule IIE***

- C29.4a All deposit assets and liabilities with identifiable assets (as reported in Form 1EBS, lines 13(e)) and liabilities (as reported in Form 1EBS, lines 36 (f)), such as fixed income investments, equity investments, mortgage loans, and cash and cash equivalents, are required to be included here;
- C29.4b Insurance groups should look into the nature of the deposit assets and map them in the BSCR template to appropriate categories based on the cash flow profile and risk sensitivities. For example, bond-like cash flow profile would be mapped to corporate bonds (based on counterparty's credit rating).

**C30. SCHEDULE OF OTHER SUNDRY ASSETS AND LIABILITIES  
(SCHEDULE IIF)**

***Background***

- C30.1 The schedule of Other Sundry Assets and Liabilities (Schedule IIF) provides a breakdown of an insurance group's other sundry assets and liabilities:
- a) Bonds and Debentures by both investment category (Corporate & Sovereign Bonds, Residential Mortgage-Backed Securities, Commercial Mortgage-Backed Securities/Asset-Backed Securities and Bond Mutual Funds) and BSCR ratings (Ratings 0-8);
  - b) Equity Investments by asset category (Long Exposures, Short Exposures for Qualifying Assets held for Risk Mitigation Purposes and Short Exposures for Non-Qualifying as Assets for Risk Mitigating Purposes) and liability category (Without Management Actions and with Management Actions);
  - c) Spread risk for credit derivatives by spread up (for long and short exposures) and spread down (for long and short exposures);
  - d) Counterparty default risk for over-the-counter derivatives by market value of derivatives with positive market values, market value of derivatives with negative market value and market value of collateral excluding any over-collateralisation; and
  - e) Cash and Cash Equivalents
- C30.2 This schedule applies a capital charge to fixed income investments based on the type of category and rating of the security held; and a shock to equity investments based on the type of investment. The fixed income and equity charges are aggregated in the fixed income and equity risk tabs, respectively. Further this information provides the BMA with the type and quality of investments held for assessing the insurance group's market risk. It is noted that the cash and cash equivalent balances reported on this schedule are to be included in the balances in Schedule XIXA Cash and Cash Equivalents.
- C30.3 The investment categorisation and BSCR ratings shall be based on the same rating scale and principles as those found on Schedule IIB.

***Items***

- C30.4 The amounts reported should correspond to balances reported on Form 1EBS lines 13(g) Intangible Assets, 13(i) Pension Benefit Surplus, 13(j) Other Sundry Assets, 36(i) Other Sundry Liabilities and 14(d) Letters of Credit, Guarantees and Other Instruments is allocated in the following five sections:
- a) Quoted and unquoted bonds and debentures, and Investment in Mortgage Loans on Real Estate;
  - b) Quoted and unquoted equities;
  - c) Derivatives instruments;

- d) Cash and Cash Equivalents; and
- e) Quoted and unquoted investments.

***Instructions Affecting Schedule IIF***

C30.4a All other sundry assets and liabilities with identifiable assets (as reported in Form 1EBS, lines 13(j)) and liabilities (as reported in Form 1EBS, lines 36 (i)) and Letters of Credit, Guarantees and Other Instruments (as reported in Form 1EBS, line 14(d)), such as fixed income investments, equity investments, mortgage loans, and cash and cash equivalents, shall be included here;

**C31. SCHEDULE OF PREMIUM EXPOSURE MEASURE BY LINE OF BUSINESS (SCHEDULE IVD)**

***Background***

C31.1 The schedule of premium exposure measure by line of business — Schedule IVD — provides a breakdown of an insurance group's gross premium exposure measure and net premium exposure measure on a consolidated basis. The exposure measure is calculated by the greater of:

- a) Gross Premium Written / Net Premium Written for the current year;
- b) Estimate of Net Earned Premiums for the next 12 months;

Plus

- (i) Net FP (Existing); and
- (ii) Net FP (Future)

***Instructions Affecting Schedule IVD***

C31.1a 'Net Premiums Written' means the consolidated net premiums written for the reporting period;

C31.1b 'Estimate of Net Earned Premiums for the next 12 months'; means the net premiums earned for the next 12 months (whether arising from policies already incepted, bound but not incepted, or not bound but incepting in the next 12 months);

C31.1c 'Net Base Premium Exposure' means the greater of the amounts calculated under lines of Business in paragraphs (a) and (b) above;

C31.1d 'Net FP (existing)' means the expected present value of net premiums to be earned by the insurance group after the next 12 months reporting period for existing qualifying multi-year insurance policies;

C31.1e 'Net FP (future)' means the expected present value of net premiums to be earned by the insurance group after the next 12 months reporting period for qualifying multi-year insurance policies where the initial recognition date falls in the following 12 months;

C31.1f 'Net Premium Exposure Measure' means the total derived from paragraphs (c), (d) and (e) above;

C31.1g 'Gross Premium Exposure Measure' means the amount calculated in paragraph (f) above but on a gross of reinsurance basis;

C31.1h 'Geographic Net Premium Exposure Measure' means the total shown on Schedule IVE.



## *Additional Guidance*

### **Qualifying multi-year insurance policies**

- C32.1a ‘Qualifying multi-year insurance policies’ means those insurance policies with (an earning) term longer than 12 months after allowing for the criteria prescribed by the Authority;
- C26.7a Corollary to the above is that insurance policies which are earned over a term of 12 months or less (i.e., single-year policies) are not considered ‘qualifying multi-year insurance policies’;
- C32.1b In order to determine what contracts fall under multi-year exposure, insurance groups should take into account paragraph 122 of the Authority’s “Guidance Notes for Commercial Insurers and Insurance Groups’ Statutory Reporting Regime”, of 30 November 2016: ‘The cash flow projections used in the calculation of the best estimate should take account of all future cash in- and out-flows required to settle the insurance obligations attributable to the lifetime of the policy. This is defined to continue up to the point at which:
- a) The insurance group is no longer required to provide coverage;
  - b) The insurance group has the right or the practical ability to reassess the risk of the particular policyholder and, as a result, can set a price that fully reflects that risk;
  - c) The insurance group has the right or the practical ability to reassess the risk of the portfolio that contains the contract and, as a result, can set a price that fully reflects the risk of that portfolio”
- C32.1c For example, multi-year contracts with ‘getaway clauses’, such as annual renewal of cancellation provisions may be treated as one-year contracts and thus excluded from multi-year exposure.
- C32.1d The criteria prescribed in paragraph C26.7c are taken from the guidance for calculating the EBS Technical Provisions. A natural implication is that the treatment of multi-year contracts should be consistent between the calculation of FP(Existing) and EBS Technical Provisions.

**C33. SCHEDULE OF GEOGRAPHIC DIVERSIFICATION OF NET  
PREMIUM EXPOSURE MEASURE (SCHEDULE IVE)**

***Background***

- C33.1 The schedule of geographic diversification of net premium exposure measure — Schedule IVE — provides a breakdown of an insurance group's net premium exposure measure by statutory lines of business and by geographical location. The BMA has identified and defined 24 statutory lines of business and 18 statutory geographical zones.
- C33.2 Line item 25 'Total' of Schedule IVE for net premium exposure measure should correspond to the balance reported in IVD Net Premium Exposure Measure for the applicable line of business.

***Instructions Affecting Schedule IVE***

- C33.2a For each line of business, the net premium exposure measure stated in Schedule IVD may be split between the 18 geographic zones set below. If included, the total of amounts in zones 1-18 for a given line of business shall equal the corresponding amount of net premiums written shown in Schedule IVD.

***Additional Guidance***

- C33.2b When allocating the premium exposure measure by geographic location, allocate the premiums by the location of the risk.

## **C34. SCHEDULE OF RISK EXPOSURE (SCHEDULE IVF)**

### ***Background***

- C34.1 The Schedule of Risk Exposure – Schedule IVF – requires all insurers to provide a breakdown of the :
- a) Number of subsidiaries per location. For the purpose of this schedule, the BMA has identified 37 locations worldwide;
  - b) General business Gross and Net Premium Written by location of risk being underwritten, split between property catastrophe and other lines of business for the financial period;
  - c) General business Gross Incurred Losses by location for the financial period;
  - d) Gross Reserves by location at year-end;
  - e) Long-Term business Gross Reserves by location for Mortality risk, Longevity risk, Deferred Accumulations Annuities, Disability, Group, Variable Annuities, and Other Products at year-end; and
  - f) Long-Term Claims and Benefit Paid by location for the financial period.

The information in this Schedule provides the BMA with details of the geographic location of general and long-Long-Term business risks assumed and ceded by Bermuda insurers, the reserves established for those risks and the related claims paid. Accordingly, this information enables the BMA to demonstrate the key role Bermuda plays in the supply and diversification of risk capacity globally

### ***Items***

- C34.2 Provide jurisdiction of the ultimate parent company of the insurer:
- C34.3 All insurance groups shall provide the following information for the reporting period

### ***Instructions Affecting Schedule IVF***

C34.3a ‘Location’ shall be the location of the risk being underwritten. If the location of the risk being underwritten is not available, then insurers are to allocate based on the location of the cedant;

C34.3b The ‘number of subsidiaries’ refers to the number of subsidiaries licensed within the jurisdiction;

C34.3c ‘Mortality’ refers to –

- a) Mortality (term assurance, whole life, universal life);
- b) Critical Illness (including accelerated critical illness products);<sup>1</sup>

C34.3d ‘Longevity’ refers to –

- a) Longevity immediate pay-out annuities, contingent annuities, pension blocks;
- b) Longevity (deferred pay-out annuities, future contingent annuities, future pension pay-outs);

- c) Annuities certain only;

C34.3e 'Deferred accumulation annuities' refers to –

- a) Deferred accumulation annuities;

C34.3f 'Disability' refers to –

- a) Disability income: active lives - including waiver of premium and Long-Term care;
- b) Disability income: active lives - other accident and sickness;
- c) Disability income: claims in payment - including waiver of premium and Long-Term care;
- d) Disability income: claims in payment - other accident and sickness

C34.3g 'Group' refers to –

- a) Group Life;
- b) Group Disability;
- c) Group Health

C34.3h 'Variable annuities' refers to –

- a) Variable Annuities

C34.3i 'Other products' refers to

- a) Stop Loss;
- b) Rider (other product riders not included above)

C34.3j All amounts shall be reported on a consolidated basis only.

## **C35. SCHEDULE OF CASH AND CASH EQUIVALENT COUNTERPARTY ANALYSIS (SCHEDULE XIXA)**

### ***Background***

**C35.1** For assessing the underlying credit security of cash and cash equivalent counterparties, the Authority is requiring insurance groups to provide details of the largest 10 exposures and rating of those institutions. The remaining balance can be aggregated by BSCR rating (which is a similar methodology to the Schedule of Particulars of Ceded Reinsurance).

### ***Instructions Affecting Schedule XIXA***

**C35.1a** An insurance group may disclose at least the top 10 cash and cash counterparty exposures (as reflected in Form 1EBS line 1 and Schedules IIB to IIF column 1, line 58)

**C35.1b** The remaining balance may be grouped according to BSCR rating;

**C35.1c** All unreconciled balances shall be allocated to the single consolidated exposure balance that receives a BSCR Rating of 8;

**C35.1d** Cash and cash equivalents issued by a country that is rated AA- or better in its own currency shall be classified under BSCR rating class 0;

**C35.1e** Insurance groups may allocate BSCR Ratings based on the short-term ratings in the table below, or alternatively based on the Long-Term ratings detailed in Schedule II, in each case following the process specified in the instructions affecting Schedule II; and

**C35.1f** Amounts shall be reported on an EBS valuation basis.

| BSCR Ratings | Standard & Poor's                                    | Moody's | AM Best      | Fitch  |
|--------------|--|---------|--------------|--------|
| Class 2      | A1+  | P1      | AMB-1+       | F1+    |
| Class 3      | A1   | P2      | AMB-1        | F1     |
| Class 4      | A2, A3   | P3      | AMB-2, AMB-3 | F2, F3 |
| Class 5      |  |         |              |        |
| Class 6      | B-1, B-2   |         |              | B      |
| Class 7      | B-3  |         |              |        |
| Class 8      | Unrated short-term investments and all other ratings |         |              |        |

| BSCR Ratings | KBRA   | DBRS      | Egan-Jones | Japan Credit Rating Agency | Morningstar Credit Ratings |
|--------------|--|-----------|------------|----------------------------|----------------------------|
| Class 2      | K1+  | R-1 H,M   | A-1+       | J1+                        | M1+                        |
| Class 3      | K1   | R-1 L     | A-1        | J1                         | M1                         |
| Class 4      | K2, K3   | R-2 H,M,L | A-2, A-3   | J2                         | M2, M3                     |
| Class 5      |  | R-3       | B-1        | J3                         |                            |
| Class 6      | B  | R-4       | B-2        |                            |                            |
| Class 7      |  |           | B-3        | NJ                         |                            |
| Class 8      | Unrated short-term investments and all other ratings |           |            |                            |                            |

## **C36. SCHEDULE OF CURRENCY RISK (SCHEDULE XXA)**

- C36.1 For insurance groups that write business in multiple currencies, the Authority has developed a capital charge for each currency where the insurance group's liabilities may exceed its assets. For the grounds of proportionality, the Authority is requiring insurance groups to provide currency exposures for at least 95% of total assets and liabilities held.
- C36.2 For those currencies for which the assets in the currency are less than the sum of the liabilities denominated in the currency plus a proxy BSCR for that currency, shocks are applied to the assets and liabilities to determine a capital charge. The proxy BSCR for a given currency shall be calculated as the product of the liabilities in that currency and the proxy BSCR factor. The proxy BSCR factor is calculated as the total liabilities found on Form 1EBS line 39 divided by the total ECR Charge. The proxy BSCR factor shall be the maximum of:
- a) The prior year value; and
  - b) Average of the last 3 years.

### ***Instructions Affecting Schedule XXA***

- C36.2a Insurance groups shall report currencies representing not less than 95% of their EBS liabilities;
- C36.2b Assets qualifying as held for risk mitigation purposes, assets not qualifying for risk mitigation purposes and liabilities without management actions shall be valued in line with the Economic Balance Sheet principles set out in Schedule XIV and in accordance with criteria prescribed in section B5;
- C36.2c Liabilities with management actions shall be valued in accordance with criteria prescribed in section B6 in relation to the valuation of future bonuses and other discretionary benefits;
- C36.2d For all exposures other than Foreign Exchange (FX) derivatives, a default calculation of after-shock value is provided to expedite the filling of the schedule. It is expected that the default calculation will be appropriate in the majority of cases<sup>5</sup>; however, the insurance group always needs to review the appropriateness and approve any resulting values. If the default formula is not appropriate for a certain asset class, or for certain instruments within an asset class, the insurance group is responsible for entering correct after-shock values by overriding the default formula;

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<sup>5</sup> In particular, this is true for all assets whose value is not directly sensitive to exchange rate movements (i.e., whose local (foreign) currency value is independent of changes in exchange rates). For example, and assuming that USD is the reporting currency, although the value *in dollars* of a bond or common stock denominated in, say, Euros (EUR) will change as a result of a shock to USD/EUR exchange rate, the local currency value of the bond or common stock will not change as a result of the shock. For such assets the only change in value is the change in reporting currency terms, meaning that the percentage shock can be straightforwardly applied to the reporting currency value of the foreign currency position.

C36.2e For FX derivatives, no default formula can be provided, due to the non-linearity of the change in value. That is, the change in derivative value (in percentages) is generally different from the shock (in percentages) that is applied to the exchange rate underlying the derivative;

C36.2f Amounts shall be reported on a an EBS valuation.

***Additional Guidance***

**Calculating the BSCR Proxy**

C36.2.i. When calculating the BSCR Proxy, insurance groups are to provide Liabilities (on an EBS basis) and the total full (new basis) ECR capital charge on an EBS basis for the prior 3 years. In the instance the insurance group does not have liabilities and the ECR capital charge on an EBS basis, the Authority will allow insurance groups to provide the non-EBS balances for each. Note that for financial year-ends within the BSCR transitory period, insurers are to report the full new-basis BSCR for that period.

C36.2.ii. If the insurance group does not have either liabilities or ECR capital charge for the prior 3 years:

- a) Insurance groups filing their BSCR for the first time are to use current year figures for the prior year; and
- b) Insurance groups that have previously filed a BSCR however do not have 3 years of historical data shall provide the years they have data for, and leave the years with no data reported as blank

**Meeting the 95% minimum Asset and Liability test**

C36.2.iii. If an insurance group does not meet the 95% minimum test on this schedule regarding how it will impact the BMA's risk assessment of the insurance group.

- a) The Authority may require additional information from the insurance group to assess its currency risk. This may result in a capital add-on which will require the insurance group's ECR and TCL ratios to be revised on its published Financial Condition Report.

**Guidance for reporting currency shocks for FX forward positions**

C36.2.iv. When reporting foreign exchange hedges on Schedule XXA, the before-shock market value is the fair value of the contract on an EBS basis, and should be already available without a need for separate calculations (from the financial statements/asset reports/asset system). The after-shock value is to be calculated by the insurer under the prescribed currency shocks, following standard market practices and using generally accepted models for valuation of specific assets.

- a) In particular, as the cash flows of an FX forward occur at its maturity, the forward exchange rate and the discount rate for the appropriate term should be used to

value the FX forward, both at the valuation date and after the shock

- b) For avoidance of doubt, the before-shock value (i.e., the EBS balance sheet value) and the after-shock value may be either positive or negative (or zero), depending on the specifics and the circumstances. As a result of the shock, a negative market value may become more negative, less negative or positive; and a positive market value may become more positive, less positive or negative. Only the change in the market value matters, where the change is calculated as [Market Value Before Shock] minus [Market Value After Shock]

Below is a simplified example of the calculation of the after-shock value of an FX forward contract for illustration purposes. The example assumes that an insurer's reporting currency is USD, and that it has GBP-denominated liabilities in excess of GBP-denominated assets. The insurance group is, therefore, exposed to the risk of GBP appreciating against the USD; or, equivalently, to the risk of USD depreciating against the GBP. Assume that the insurer has entered into an FX forward to sell USD (buy GBP) at a fixed price to hedge some of this risk.

- (i) Let the GBP/USD rate entered be 1.3 (the forward rate/delivery price) and the insurer is selling 1,000 USD (this being the nominal amount). At the contractual rate, this is equivalent to buying 769.23 GBP. The market value of the FX forward at inception is, by definition, 0. Assume the original maturity of the contract is T (in years).
- (ii) Assume that, as of the valuation date (denote this by time t), the current GBP/USD forward rate for the period equal to the remaining maturity of the contract (i.e., T-t) is 1.5. This means that if the insurer were to enter into a new forward contract, at time t, to sell 1,000 USD for GBP at time T, it would receive 666.67 GBP at time T. Nevertheless, the delivery rate of the FX forward stays unchanged over the life of the contract and under the contract the insurer can get 769.23 GBP for 1,000 USD at the maturity, T. Therefore, ignoring discounting for the sake of simplicity in this example, the market value of the FX forward is equal to the difference, 102.56 GBP. (Alternatively, this can be thought of as closing the position by entering into an opposite contract (i.e., selling 666.67 GBP to receive 1,000 USD) at time T; the USD payments cancel at T, and the GBP legs yield a net profit of  $769.23 - 666.67 = 102.56$  GBP at T.) The GBP value then needs to be converted into the reporting currency (at the spot rate). Assuming that the spot GBP/USD rate at valuation date is, say, 1.4, the market value of the FX forward is 143.58 USD. This is the before-shock market value in Schedule XXA, which should correspond to the fair value at which the FX forward is recorded on the EBS balance sheet (after properly accounting for all the factors affecting the price of the forward, such as discounting the payoff from time T to present time t).
- (iii) Under the BSCR currency risk calculation – Schedule XXA – the FX forward is revalued under the prescribed currency shock. In this case, the shock is a 25% depreciation of the USD against GBP (or, equivalently, a 25% appreciation of the



GBP against the USD). The shocked GBP/USD forward rate is therefore 1.875 (assuming that neither the relevant USD nor GBP interest rates change as a result of the shock). At this rate, 1,000 USD could be sold forward for 533.33 GBP at the maturity T. Nevertheless, again, the forward contract entitles the insurer to receive 769.23 GBP for 1,000 USD. Therefore, the market value of the contract after the shock is 235.90 GBP (again ignoring discounting). Using the shocked spot rate of 1.75 (i.e.,  $(1+25\%)*1.4$ ), the shocked market value is 412.83 USD. This is the after-shock market value in Schedule XXA.

- (iv) The effect of the currency shock on the FX forward is the difference between the before and after-shock market values (i.e., an increase in value of 269.25 USD in this example). Note that the insurer needs to only fill the before-shock and after-shock values in Schedule XXA; the change in market value is then automatically calculated in the Currency Risk tab. This increase in the value of the FX forward would help to offset some of the increase, in USD terms, in the value of the GBP-denominated liabilities.

- C36.2.v. Alternatively, instead of reporting the (net) market value of an FX forward contract, insurers may report both legs of the FX forward separately on Schedule XXA, with each leg allocated to the line for the appropriate currency. In this case, the sum of the reported (before-shock) values of the legs must be equal to the fair value, as of valuation date, of the FX forward contract as a whole. Similarly, the sum of the mark-to-model values of the legs after the shock should, by definition, be equal to the after-shock mark-to-model value of the contract as a whole, if the calculation is carried out correctly. That is, the market value of the contract, or the results of the shock calculation, shall not be affected by the chosen representation.

## **C37. SCHEDULE OF CONCENTRATION RISK (SCHEDULE XXI)**

### ***Background***

- C37.1 To assess the insurance group's concentration risk, the Authority requires the identification of largest 10 independent exposures relating to all instruments (e.g., equity holdings, bonds, real estate, loans, etc.), which would be an addition to the existing BSCR market and/or credit risk contributed by those exposures.
- C37.2 In deciding which counterparties need to be grouped together, a single counterparty should include all related/connected counterparties, which are defined as:
- a) Control relationship: one of the counterparties, directly or indirectly, has control over the other(s); and
  - b) Economic inter-dependence: if one of the counterparties were to experience financial problems, in particular funding or repayment difficulties, the other(s) as a result, would also be likely to encounter funding or repayment difficulties.

### ***Instructions Affecting Schedule XXI***

- C37.2a =Disclosure of an insurance group's ten largest exposures to single counterparty risk by reporting the name, the exposure and allocation by asset type, bond or mortgage type (if applicable), BSCR Rating (if applicable) and asset value consistent with Form 1EBS.
- C37.2b For the purposes of this Schedule, a counterparty shall include all related or connected counterparties captured by either of the following criteria:
- a) Controller relationship: if a counterparty, directly or indirectly, has control of (as a result of its majority shareholding in or significant influence) the other counterparties; or
  - b) Economic interdependence: if one of the counterparties were to experience financial difficulties which directly or indirectly affect the ability of any or all of the remaining counterparties to perform their financial obligations (e.g., where a counterparty becomes unable to fund or repay certain financial contractual obligations, and as a result, other counterparties, are likely to be unable to fund or repay certain obligations imposed on them);
- C37.2c Asset type (column A) shall be determined by the insurance group as one of the following:
- a) Cash and Cash Equivalents (as defined in Schedule XIX column B Schedules IIB, IIC, IID, IIE, and IIF column (1), line 68);
  - b) Quoted and Unquoted Investments (as defined in Schedules IIB, IIC, IID, IIE, and IIF column (11), line 14);

- c) Equity Holdings (as defined in Schedules IIB, IIC, IID, IIE, and IIF column (11), line 37);
  - d) Advances to Affiliates (reported on Form 1EBS, line 4(g));
  - e) Policy Loans (reported on Form 1EBS, line 6);
  - f) Real Estate 1 (reported on Form 1EBS, line 7(a));
  - g) Real Estate 2 (reported on Form 1EBS, line 7(b));
  - h) Collateral Loans (reported on Form 1EBS, line 8).
- C37.2d When reporting asset sub-type (under column B) shall provide further details of the type of asset as included in table 1, table 2 or table 8 as appropriate;
- C37.2e When applying the BSCR Rating (under column C) the insurance group shall apply the BSCR rating that was allocated to the asset when it was included in table 1, table 2 or table 8 as appropriate;
- C37.2f Asset value (under column D) shall be the value of the asset as required by the EBS valuation principles as set out in Schedule XIV; and
- C37.2g Amounts shall be reported on an EBS valuation basis.

*Additional Guidance*

**Reporting largest 10 independent exposures**

- C37.2.i. Complete the schedule by providing the 10 largest independent exposures relating to all instruments (e.g., equity holdings, bonds, real estate, loans, etc.) largest counterparties. If a counterparty has more than one BSCR rating or Asset Type, enter each rating separately (i.e., if an insurance group has purchased bonds and preferred shares of a company, then the insurance group is to report 'Asset Type' as 'Bond Types'; 'Bond/Mortgage Loan Type' as the applicable bond type, and 'BSCR Rating' as the rating of the bond in one line. In the second line, the insurance group is to report the 'Asset Type' as 'Preferred Shares' and 'BSCR Rating' as the rating of the shares.

## **C38. SCHEDULE OF INTEREST RATE SENSITIVE ASSETS AND LIABILITIES (SCHEDULE XXIII)**

### ***Background***

- C38.1 An alternative and more risk sensitive method for determining capital requirements for interest and liquidity risk has been developed. This method will require companies to apply shocks to the yield curve used for determining best estimate liabilities (which includes segregated account company liabilities, deposit liabilities and sundry liabilities) and market values of assets (which includes segregated account company assets, deposit assets and sundry assets) exposed to interest rate risk (e.g. fixed income and hybrid assets, bank deposits, etc.). Any changes in market values of assets and best estimate liabilities due to interest rate-sensitive cash flows should be accounted for. The capital requirement is then determined as the negative change to the net asset value (net balance sheet) of the highest magnitude resulting from these shocks.

### ***Instructions Affecting Schedule XXIII***

- C38.1a The shock-based method requires companies to apply shocks to the yield curve used for determining best estimate liabilities<sup>6</sup> and market values of assets<sup>7</sup> exposed to interest rate risk (e.g., fixed income and hybrid assets, bank deposits, etc.). Any changes in market values of assets and best estimate liabilities due to interest rate-sensitive cash flows should be accounted for.
- C38.1b Two shocks are to be applied: an upwards shock and a downwards shock. The capital requirement is then determined as the negative change to the net asset value (net balance sheet) of the highest magnitude resulting from these shocks.
- C38.1c For the purposes of calculating capital requirements for interest rate risk, rates are allowed to go negative. If the application of the downward shock leads to negative rates, these shall not be floored at zero.
- C38.1d For the calculation of the interest risk capital charge under the shock-based approach, hedging and risk transfer mechanisms should be taken into account as long as they comply with the requirements set in the Risk Mitigation Section of these instructions. Also, management actions should be taken into account as long as they comply with the requirements set in the Management Actions Section of these instructions.

### ***Interaction between shock-based approach and interest rate risk captured in Variable Annuity (VA) guarantee risk***

- C38.1e In order to prevent double-counting capital charges for VA guarantees when using the shock-based approach, the following provisions apply:
- Where companies are using an internal model for Variable Annuity risk, assets and liabilities associated with VA guarantees may be excluded from the interest rate shock, if the following conditions are fulfilled:

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<sup>6</sup> And segregated account company liabilities, deposit liabilities and sundry liabilities.

<sup>7</sup> Including segregated account company assets, deposit assets and sundry assets.

- (i) The company is able to identify and track assets associated with Variable Annuity guarantees.
  - (ii) Interest rate risk associated with both the VA guarantee liabilities and the associated assets is explicitly modeled in the internal model.
- b) Where interest rate risk is modelled for VA guarantees, but not for the associated assets, or the associated assets cannot be separately identified, then the VA guarantee liabilities may be excluded from the interest rate shock, but any assets may not.
- c) Where companies are using the BSCR Standard Formula to calculate Variable Annuity guarantee risk, only the VA guarantee liabilities may be excluded from the interest rate shock, but any assets may not.

#### ***Additional Guidance***

- C38.1.i. The shocks (per currency) are to be applied to the valuation date spot curve (per currency). The shocks are absolute shocks expressed in percentage points (i.e., are added on top of the base spot curve).
  - a) For companies using the standard approach to calculate best estimate liability (BEL), the shocks are applied to the standard spot curves published by the Authority.
- C38.1.ii. The assets and liabilities need to be revalued under the shocks. For assets, this involves calculating the market value of assets after the shock (i.e., the shocked value). Depending on the asset, this may be a mark-to-model calculation. Conceptually the shocked value corresponds to the expected present value of cash flows projected under the stress scenario (taking into account that the amount and/or timing of cash flows themselves might change due to the shock (e.g. for bonds with call/put options, or for derivatives)).
- C38.1.iii. Revaluing the (best estimate) liabilities involves calculating the expected present value of cash flows projected under the stress scenarios. In particular, where the amount and/or timing of liability cash flows themselves depends on interest rates, the liability cash flows need to be projected (re-evaluated) under the stress scenarios, as opposed to, for example, simply re-discounting the base scenario cash flows.

#### ***Interaction between shock-based approach and the scenario-based approach for BEL***

- C38.1.iv. For companies using the scenario-based approach for BEL calculation there is an offset from the interest rate risk capital charge when the shock-based approach is used. The offset is based on the difference in the best estimate liability between the ‘worst’ scenario and the base scenario under the scenario-based approach, according to the formula specified in the Prudential Rules.
- C38.1.v. As a simplification companies using the scenario-based approach may calculate the capital charge for interest rate risk (before the application of offset) based on shocks to the balance sheet as if the base scenario had been applied. In this case the offset is to be calculated as the difference between the ‘worst’ scenario and the base scenario before the application of shocks.

## D.SUMMARY

### D1. FEATURES – BSCR ON CURRENT BASIS

#### *Background*

D1.1 The Summary exhibit has seven key features: Required Capital and Surplus, Available Statutory Capital and Surplus, MSM, ECR and TCL, Ratios, Group Solvency Capital Distribution chart and Regulatory Action Level graph. Each feature is described below. At the bottom of the page the BSCR formula for combining the various risk capital charges is displayed. The only financial data input into the Summary exhibit is the BMA-approved Capital Contribution of the insurance group.

#### *Required Capital and Surplus*

D1.2 The Group BSCR is determined according to the following formula:

$$\begin{aligned}
 BSCR = & \sqrt{C_{fi}^2 + C_{eq}^2 + C_{int}^2 + C_{curr}^2 + C_{conc}^2 + C_{prem-gb}^2 + \left[\frac{1}{2}C_{cred} + C_{rsvs-gb}\right]^2 + \left[\frac{1}{2}C_{cred}\right]^2 + (C_{LTmort} + C_{LTsl} + C_{LTTr})^2} \\
 \text{cont'd } & \sqrt{-0.5 \times (C_{LTmort} + C_{LTsl} + C_{LTTr}) \times C_{LTlong} + C_{LTlong}^2 + C_{LTmorb}^2 + C_{LTVa}^2 + C_{LTother}^2 + C_{cat-gb}^2 + C_{op} + C_{adj}} \\
 + & \left[ BSCR_{corr} - \left( \sqrt{C_{fi}^2 + C_{eq}^2 + C_{int}^2 + C_{curr}^2 + C_{conc}^2 + C_{prem-gb}^2 + \left[\frac{1}{2}C_{cred} + C_{rsvs-gb}\right]^2 + \left[\frac{1}{2}C_{cred}\right]^2 + (C_{LTmort} + C_{LTsl} + C_{LTTr})^2} \right. \right. \\
 \text{cont'd } & \left. \left. \sqrt{-0.5 \times (C_{LTmort} + C_{LTsl} + C_{LTTr}) \times C_{LTlong} + C_{LTlong}^2 + C_{LTmorb}^2 + C_{LTVa}^2 + C_{LTother}^2 + C_{cat-gb}^2 + C_{op} + C_{adj}} \right) \right] \\
 & \times \text{TransitionalFactor}
 \end{aligned}$$

Where:

$C_{fi}$  = capital charge in respect of fixed income investment risk;

$C_{eq}$  = capital charge in respect of equity investment risk capital;

$C_{int}$  = capital charge in respect of interest rate and liquidity risk;

$C_{curr}$  = capital charge in respect of currency risk;

$C_{conc}$  = capital charge in respect of concentration risk;

$C_{prem}$  = capital charge in respect of general business premium risk;

$C_{rsvs}$  = capital charge in respect of general business reserve risk;

$C_{cred}$  = capital charge in respect of credit risk capital;

$C_{cat}$  = capital charge in respect of catastrophe risk;

$C_{LTmort}$  = capital charge in respect of long-term – mortality;  
 $C_{LTsl}$  = capital charge in respect of long-term – stop loss;  
 $C_{LT_r}$  = capital charge in respect of long-term – riders;  
 $C_{LTmorb}$  = capital charge in respect of long-term – morbidity & disability;  
 $C_{LTlong}$  = capital charge in respect of long-term – longevity;  
 $C_{LTV A}$  = capital charge in respect of long-term – variable annuity guarantee risk;  
 $C_{LTOTH}$  = capital charge in respect of long-term – other insurance risk;  
 $C_{op}$  = capital charge in respect of operational risk; and  
 $C_{adj}$  = capital charge adjustment, calculated as the sum of (a), (b) and (c) where:

- (a) Regulatory capital requirement for regulated non-insurance financial operating entities;
- (b) Regulatory capital requirement for unregulated entities; and
- (c) Capital adjustment for the loss absorbing capacity of deferred taxes.

$BSCR_{Corr}$  = as calculated in section D19.2.

**TransitionalFactor** = The transitional factor is calculated in accordance to subparagraphs i to iii for insurance groups and increases in equal steps from 1/T on for the financial year beginning on or after 1<sup>st</sup> January 2019 to 100 % by the end of the transitional period T in financial year beginning on or after year 2018+T. The length of the transitional period, T, for insurance groups is based on relative proportions of Long-Term and P&C risks and will be determined as follows:

- a) The proportions of insurance risks that apply only to P&C and only to Long-Term business are calculated as follows:  

$$LT\ Proportion = C_{LT} / (C_{LT} + C_{P\&C})$$

$$P\&C\ Proportion = 1 - LT\ Proportion$$

Where—

$$C_{P\&C} = \text{The P\&C risk module charge as calculated in section D19.5.}$$

$$C_{LT} = \text{The Long-Term risk module charge as calculated in section D19.6}$$
- b) The transitional period is calculated by taking a weighted average of a three year transitional period and a ten year transitional period, using as weights the proportions calculated in point i. above, and the result is rounded to the nearest integer. The transitional period is always between three and ten years.
- c) The transitional period will remain fixed.

- D1.3 This formula utilises the square root rule to aggregate the various risks under the assumption that the risks are at least partially independent of one another and, therefore, some diversification benefit is provided when combining the risk charges. The end result is the Group BSCR (after covariance adjustment).
- D1.4 The operational risk capital charge is the operational risk charge multiplied by the Group BSCR (after covariance adjustment). The risk charge ranges from 1% to 10% based on each group's self-assessment of the CIRA framework.
- D1.5 Capital add-ons/reductions may be assessed where the BMA believes that an insurance group's risk profile deviates significantly from the risk assumptions underlying the Group ECR or from the group's assessment of its risk management policies and practices. These include, but are not limited to, items such as provisions for reserve deficiencies, significant growth in premiums and quality of risk management surrounding operational risk.
- D1.6 The Group BSCR is equal to the sum of the Group BSCR (after covariance adjustment), operational risk capital charge and capital add-ons/reductions (if assessed).

***Available Statutory Economic Capital and Surplus***

- D1.7 Available Statutory Economic Capital and Surplus is defined as the Total Statutory Economic Capital and Surplus of the insurance group as reported on Form 1EBS, including subsequent Capital Contribution less Capital Add-ons/Reductions (BMA assessment). All capital contributions are to be approved by the BMA, and all capital add-ons/reductions are determined at the discretion of the BMA.
- D1.8 The group's available statutory economic capital and surplus is further adjusted to reflect capital of entities where there are insufficient data for the BMA to determine their risk profiles or capital contributions to the group's eligible capital (as reflected on Schedule XI(D)).
- D1.9 The insurance group's available statutory economic capital and surplus is determined for purposes of calculating the Group BSCR and Group ECR ratios.

***Minimum Margin of Solvency***

- D1.10 The Minimum Margin of Solvency is calculated using the aggregation approach, as reported on Schedule XII, column (10). The solvency requirement of each entity is derived from the solvency rules applicable to that entity, as determined by the jurisdiction where the entity is licenced or registered.

***Group ECR and Group TCL***



D1.11 The Group ECR is the higher of the MSM and the Group BSCR/approved internal capital model.

D1.12 The Group TCL is equal to 120% of the Group ECR.

***Ratios***

D1.13 The Group BSCR Ratio is the ratio of the Available Statutory Economic Capital and Surplus to the Group BSCR.

D1.14 The Group ECR Ratio is the ratio of the Available Statutory Economic Capital and Surplus to the Group ECR.

***Solvency Capital Distribution Chart***

D1.15 The Solvency Capital Distribution chart displays the relative contribution of each charge to the Group BSCR, prior to the covariance adjustment.

***Regulatory Action Level Graph***

D1.16 The Regulatory Action Level graph displays the insurance group's Available Statutory Economic Capital and Surplus position relative to the BMA's regulatory action guidelines, where Regulatory Action Level 1 is equal to the insurance group's ECR and Regulatory Action Level 2 is equal to the insurance group's TCL.

***Items***

- a) Required Capital and Surplus – The calculation of the Required Capital and Surplus is used for the purpose of determining the required capital level.

| Line Item |                                | Description   |
|-----------|--------------------------------|---|
| 1         | Fixed Income Investment Risk   | Based on current year fixed income investment risk (column (3), Row (g)). |
| 2         | Equity Investment Risk         | Based on current year equity investment risk (column (3), Row (e)).       |
| 3         | Interest Rate / Liquidity Risk | Based on current year interest rate / liquidity risk (column (4)).        |
| 4         | Currency Risk                  | Based on current year currency risk (column (G)).                         |
| 5         | Concentration Risk             | Based on current year concentration risk (column (3), Row (i)).           |
| 6         | Premium Risk                   | Based on current year premium risk (column (5) Row (e)).                  |

| Line Item |  | Description   |
|-----------|--|---|
| 7         | Reserve Risk   | Based on current year reserve risk (column (5) Row (c)).  |
| 8         | Credit Risk  | Based on current year credit risk (column (3), Row (d)).  |
| 9         | Catastrophe Risk   | Based on current year catastrophe risk.   |
| 10        | Insurance Risk – Mortality (long-term business)                | Based on current year insurance risk – mortality (column (6)).  |
| 11        | Insurance Risk – Stop Loss (long-term business)                | Based on current year insurance risk – stop loss (column (6)).  |
| 12        | Insurance Risk – Riders (long-term business)                   | Based on current year insurance risk – riders (column (6)).   |
| 13        | Insurance Risk – Morbidity and Disability (long-term business) | Based on current year insurance risk – morbidity and disability (column (6)).   |
| 14        | Insurance Risk – Longevity (long-term business)                | Based on current year insurance risk – longevity (column (6)).  |
| 15        | Variable Annuity Guarantee Risk (long-term business)           | Based on current year variable annuity guarantee risk (column (13), Row (33)) or Schedule VIIIA (column (7), line (1)).   |
| 16        | Other Insurance Risk (long-term business)                      | Based on current year other insurance risk (column (3)).  |
| 17        | Group BSCR (Prior to Covariance Adjustment)                    | Group BSCR (Prior to Covariance Adjustment) is the sum of the line items (1) to (16) above.   |
| 18        | Group BSCR (After Covariance Adjustment)                       | Group BSCR (After Covariance Adjustment) is the resulting amount after applying the square root rule on line item (17) to reflect a diversification benefit when aggregating all the risks described above. |
| 19        | Operational Risk (%)   | Operational Risk (%) is the applicable operational risk charge % of ‘Group BSCR After Covariance Adjustment’ based on the overall score derived from the CIRA framework as prescribed by the BMA.           |

| Line Item |   | Description  |
|-----------|---|--|
| 20        | Operational Risk Capital Charge (\$)        | Operational Risk Capital Charge (\$) is the resulting amount when the operational risk (%), as prescribed in line item (18), is applied to the Group BSCR (After Covariance Adjustment).   |
| 21        | Capital Adjustment                          | Based on the current year's capital adjustment for (i) the regulatory capital requirement for regulated non-insurance financial operating entities, as determined in Schedule XI(A), column (12); and (ii) the capital requirement for unregulated entities where the parent exercises control, as determined in Schedule XI(B), column (12).                      |
| 22        | Capital Add-On / Reduction (BMA Assessment) | Capital Add-Ons/Reductions on the Required Capital and Surplus is the difference between the user required capital (using groups-specific capital factors) and the standard required capital (using the prescribed BSCR capital factors) determined under the group specific parameters section, which is to be completed only with the prior approval of the BMA. |
| 23        | Group BSCR                                  | Group BSCR is the sum of the line items (18), (20) (21) and (22) above.  |
| 24        | BSCR Correlation                            | SCR capital charge on the new basis after the correlation adjustment. The revised capital charge approach is phased in three to ten year period based on the proportions of Long-Term and property and casualty risks.   |
| 25        | Final BSCR                                  | BSCR is the sum of the line items (23) and [the difference between (24) and (23)] times the Transitional Factor.   |

- b) Available Statutory Economic Capital and Surplus – The calculation of the Available Statutory Capital and Surplus is used for the purpose of determining the appropriate regulatory action level.

| Line Item |   | Description   |
|-----------|---|---|
| 1         | Total Statutory Economic Capital and Surplus                    | Based on the current year economic balance sheet of the insurance group as reported on Form 1EBS, line 40.  |
| 2         | Capital Contribution  | Capital Contributions must be approved by the BMA. Note that a Capital Contribution increases the Total Statutory Capital and Surplus.  |
| 3         | Capital Reduction for Entities with Insufficient Data           | Capital Reduction for entities with insufficient data represents Total Bermuda statutory reserves, less Total reported DAC, if any, less Total value of business acquired, less Total present value of future profits, less Total best estimate reserves; as reported on Schedule XI(D), column (11). |
| 4         | Pre-Adjustment Available Statutory Economic Capital and Surplus | Pre-Adjustment Available Statutory Economic Capital and Surplus is the sum of lines (1) to (3) above.   |

| Line Item |  | Description   |
|-----------|--|---|
| 5         | Capital Add-Ons/Reductions (BMA assessment)      | Capital Add-ons/Reductions may be assessed where the BMA believes that an insurance group's risk profile deviates significantly from the risk assumptions underlying the Group ECR. |
| 6         | Available Statutory Economic Capital and Surplus | Available Statutory Economic Capital and Surplus is the sum of lines (4) and (5) above.   |

## D2. FIXED INCOME INVESTMENT RISK

### *Background*

- D2.1 There are various categories of assets comprising of bonds, loans and other miscellaneous investments that are used to determine the Fixed Income Investment Risk capital charge.
- D2.2 Where applicable, the amounts must reconcile to the appropriate line(s) of the insurance group's Form 1EBS or to the schedules prescribed by or under the Rules for the relevant year.

### *Fixed Income Investment Risk Capital Charge*

- D2.3 The fixed income investment risk charge calculation can be summarised by the following formula:

$$C_{fi} = \sum_i \chi_i \times FIastclass_i \times \mu_r, \quad \text{where:}$$

$i$  = ranges over the classes set out below;

$\chi_i$  = BMA supplied asset class capital charge factor for type of fixed income asset class  $i$ ;

$FIastclass_i$  = value of investment in fixed income asset class  $i$  and

$\mu_r$  = additional diversification adjustment factor applied to cash and cash equivalent balances, or 1 for other asset classes.

### *Items*

- a) Corporate and Sovereign Bonds

| Line Item |               | Statement Source – The Rules                              |
|-----------|---------------|---|
| 1         | BSCR rating 0 | Based on Schedule II EBS and IIA EBS, line 1, column (1). |
| 2         | BSCR rating 1 | Based on Schedule II EBS and IIA EBS, line 2, column (1). |
| 3         | BSCR rating 2 | Based on Schedule II EBS and IIA EBS, line 3, column (1). |
| 4         | BSCR rating 3 | Based on Schedule II EBS and IIA EBS, line 4, column (1). |
| 5         | BSCR rating 4 | Based on Schedule II EBS and IIA EBS, line 5, column (1). |
| 6         | BSCR rating 5 | Based on Schedule II EBS and IIA EBS, line 6, column (1). |
| 7         | BSCR rating 6 | Based on Schedule II EBS and IIA EBS, line 7, column (1). |
| 8         | BSCR rating 7 | Based on Schedule II EBS and IIA EBS, line 8, column (1). |
| 9         | BSCR rating 8 | Based on Schedule II EBS and IIA EBS, line 9, column (1). |

- b) Residential Mortgage-Backed Securities

| Line Item |               | Statement Source – The Rules                              |
|-----------|---------------|---|
| 1         | BSCR rating 1 | Based on Schedule II EBS and IIA EBS, line 2, column (3). |
| 2         | BSCR rating 2 | Based on Schedule II EBS and IIA EBS, line 3, column (3). |
| 3         | BSCR rating 3 | Based on Schedule II EBS and IIA EBS, line 4, column (3). |
| 4         | BSCR rating 4 | Based on Schedule II EBS and IIA EBS, line 5, column (3). |
| 5         | BSCR rating 5 | Based on Schedule II EBS and IIA EBS, line 6, column (3). |
| 6         | BSCR rating 6 | Based on Schedule II EBS and IIA EBS, line 7, column (3). |
| 7         | BSCR rating 7 | Based on Schedule II EBS and IIA EBS, line 8, column (3). |
| 8         | BSCR rating 8 | Based on Schedule II EBS and IIA EBS, line 9, column (3). |

c) Commercial Mortgage-Backed Securities/Asset-Backed Securities

| Line Item |               | Statement Source – The Rules                              |
|-----------|---------------|---|
| 1         | BSCR rating 1 | Based on Schedule II EBS and IIA EBS, line 2, column (5). |
| 2         | BSCR rating 2 | Based on Schedule II EBS and IIA EBS, line 3, column (5). |
| 3         | BSCR rating 3 | Based on Schedule II EBS and IIA EBS, line 4, column (5). |
| 4         | BSCR rating 4 | Based on Schedule II EBS and IIA EBS, line 5, column (5). |
| 5         | BSCR rating 5 | Based on Schedule II EBS and IIA EBS, line 6, column (5). |
| 6         | BSCR rating 6 | Based on Schedule II EBS and IIA EBS, line 7, column (5). |
| 7         | BSCR rating 7 | Based on Schedule II EBS and IIA EBS, line 8, column (5). |
| 8         | BSCR rating 8 | Based on Schedule II EBS and IIA EBS, line 9, column (5). |

d) Bond Mutual Funds

| Line Item |               | Statement Source – The Rules                              |
|-----------|---------------|---|
| 1         | BSCR rating 0 | Based on Schedule II EBS and IIA EBS, line 1, column (7). |
| 2         | BSCR rating 1 | Based on Schedule II EBS and IIA EBS, line 2, column (7). |
| 3         | BSCR rating 2 | Based on Schedule II EBS and IIA EBS, line 3, column (7). |
| 4         | BSCR rating 3 | Based on Schedule II EBS and IIA EBS, line 4, column (7). |
| 5         | BSCR rating 4 | Based on Schedule II EBS and IIA EBS, line 5, column (7). |
| 6         | BSCR rating 5 | Based on Schedule II EBS and IIA EBS, line 6, column (7). |
| 7         | BSCR rating 6 | Based on Schedule II EBS and IIA EBS, line 7, column (7). |

| Line Item |               | Statement Source – The Rules                              |
|-----------|---------------|---|
| 8         | BSCR rating 7 | Based on Schedule II EBS and IIA EBS, line 8, column (7). |
| 9         | BSCR rating 8 | Based on Schedule II EBS and IIA EBS, line 9, column (7). |

e) Mortgage Loans

| Line Item |                                     | Statement Source – The Rules                               |
|-----------|-------------------------------------|--|
| 1         | Insured/guaranteed mortgages        | Based on Schedule II EBS and IIA EBS, line 22, column (1). |
| 2         | Other commercial and farm mortgages | Based on Schedule II EBS and IIA EBS, line 23, column (1). |
| 3         | Other residential mortgages         | Based on Schedule II EBS and IIA EBS, line 24, column (1). |
| 4         | Mortgages not in good standing      | Based on Schedule II EBS and IIA EBS, line 25, column (1). |

f) Other Fixed Income Investments

| Line Item |             | Statement Source – The Rules or IAR |
|-----------|-------------|-------------------------------------|
| 1         | Other loans | Based on Form 1 EBS, line 8.        |

g) Cash and Cash Equivalents

| Line Item |               | Statement Source – The Rules       |
|-----------|---------------|------------------------------------|
| 1         | BSCR rating 0 | Based on Schedule XIX, column (B). |
| 2         | BSCR rating 1 | Based on Schedule XIX, column (B). |
| 3         | BSCR rating 2 | Based on Schedule XIX, column (B). |
| 4         | BSCR rating 3 | Based on Schedule XIX, column (B). |
| 5         | BSCR rating 4 | Based on Schedule XIX, column (B). |
| 6         | BSCR rating 5 | Based on Schedule XIX, column (B). |
| 7         | BSCR rating 6 | Based on Schedule XIX, column (B). |
| 8         | BSCR rating 7 | Based on Schedule XIX, column (B). |

| Line Item |  | Statement Source – The Rules       |
|-----------|--|------------------------------------|
| 9         | Less:<br>Diversification<br>Adjustment | Based on Schedule XIX, column (B). |

***Instructions Affecting Fixed Income Investment Risk***

- a) All assets comprising of bonds and debentures, loans, and other miscellaneous investments that are subject to capital charges within the fixed income investment risk charge shall be included;
- b) All non-affiliated quoted and unquoted bonds and debentures shall be included in the fixed income investment charge;
- c) All bonds and debentures, loans, and other miscellaneous investments shall be reported on a basis consistent with that used for purposes of statutory financial reporting;
- d) The capital requirements relating to cash and cash equivalents shall be reduced by a diversification adjustment of up to a maximum of 40%; and
- e) The diversification adjustment in paragraph (d) is determined as 40% multiplied by 1 minus the ratio of the largest cash and cash equivalent balance held with a single counterparty to the total of all cash and cash equivalent balance.



### D3. EQUITY INVESTMENT RISK

#### *Background*

- D3.1 There are various categories of equity investments comprising common stocks, preferred stocks, real estate, and other miscellaneous investments that are used to determine the Equity Investment Risk capital charge. All non-affiliated stocks held by the insurance group should be reported, including both quoted and unquoted issues.
- D3.2 Where applicable, the amounts must reconcile to the appropriate line(s) of the insurance group's Form 1EBS or to the schedules prescribed by or under the Prudential Standards for the relevant year.

#### *Equity Investment Risk Capital Charge*

- D3.3 The equity investment risk charge calculation can be summarised by the following formula:

$$C_{eq} = \sum_i \chi_i \times Eqastclass_i, \quad \text{where}$$

$i$  = ranges over the classes set out below;

$\chi_i$  = BMA supplied asset class capital factor for type of equity class  $i$ ; and

$Eqastclass_i$  = value of investment in corresponding asset class  $i$ .

#### *Items*

##### a) Common Stocks

| Line Item |                                      | Statement Source – The Rules                               |
|-----------|--------------------------------------|--|
| 1         | Non-affiliated quoted common stock   | Based on Schedule II EBS and IIA EBS, line 19, column (1). |
| 2         | Non-affiliated unquoted common stock | Based on Schedule II EBS and IIA EBS, line 20, column (1). |
| 3         | Equity mutual funds                  | Based on Schedule II EBS and IIA EBS, line 21, column (5). |

##### b) Preferred Stocks

| Line Item | Statement Source – The Rules |
|-----------|------------------------------|
|-----------|------------------------------|

| Line Item |               | Statement Source – The Rules                               |
|-----------|---------------|--|
| 1         | BSCR rating 1 | Based on Schedule II EBS and IIA EBS, line 11, column (3). |
| 2         | BSCR rating 2 | Based on Schedule II EBS and IIA EBS, line 12, column (3). |
| 3         | BSCR rating 3 | Based on Schedule II EBS and IIA EBS, line 13, column (3). |
| 4         | BSCR rating 4 | Based on Schedule II EBS and IIA EBS, line 14, column (3). |
| 5         | BSCR rating 5 | Based on Schedule II EBS and IIA EBS, line 15, column (3). |
| 6         | BSCR rating 6 | Based on Schedule II EBS and IIA EBS, line 16, column (3). |
| 7         | BSCR rating 7 | Based on Schedule II EBS and IIA EBS, line 17, column (3). |
| 8         | BSCR rating 8 | Based on Schedule II EBS and IIA EBS, line 18, column (3). |

c) Other Equity Investments

| Line Item |   | Statement Source – The IAR or the Rules  |
|-----------|---|--|
| 1         | Real estate: company - occupied less encumbrances           | Based on Form 1EBS, line 7(a).   |
| 2         | Real estate: other properties less encumbrances             | Based on Form 1EBS, line 7(b).   |
| 3         | Other equity investments                                    | Based on Form 1EBS, lines 2(e) and 3(e).   |
| 4         | Other tangible assets – net of segregated account companies | Based on Form 1EBS, lines 13(k), 14(d), and 36(f) less lines 13(b) 13(c), 13(d) and 13(h). |

d) Investments in Affiliates

| Line Item |  | Statement Source – The IAR     |
|-----------|--|--------------------------------|
| 1         | Unregulated entities that conduct ancillary services | Based on Form 1EBS, line 4(a). |
| 2         | Unregulated non-financial operating entities         | Based on Form 1EBS, line 4(b). |
| 3         | Unregulated financial operating entities             | Based on Form 1EBS, line 4(c). |
| 4         | Regulated insurance financial operating entities     | Based on Form 1EBS, line 4(e). |

***Instructions Affecting Equity Investment Risk***

- a) All assets comprising of common stock, preferred stock, real estate, and other miscellaneous investments that are subject to capital charges within the equity investment risk charge shall be included;
- b) All non-affiliated quoted and unquoted common and preferred stock shall be included in the equity investment charge; and
- c) All common and preferred stock, real estate, and other miscellaneous investments shall be reported on a basis consistent with that used for purposes of statutory financial reporting.

## **D4. INTEREST RATE/LIQUIDITY RISK (GENERAL BUSINESS)**

### ***Background***

- D4.1 The interest rate/liquidity risk represents the economic risk an insurance group is subjected to due to changes in interest rates. The charge is calculated by applying the 'shock' of a 2% increase in interest rates to the portion of the insurance group's assets (proportionate to the percentage of reserves) related to the duration difference. These assets include quoted and unquoted bonds and debentures - other, quoted and unquoted preferred stocks, and mortgage loans.
- D4.2 The Group BSCR model has been calibrated that if the technical provisions for the general business is greater than the technical provisions for Long-Term business, then the formula would recognise the methodology below:

### ***Interest Rate/Liquidity Risk Capital Charge (General Business)***

- D4.3 The interest rate/liquidity risk charge calculation can be summarised by the following formula:

$$C_{\text{int}} = \text{bonds} \times \text{duration} \times \text{marketdecline}, \quad \text{where}$$

*bonds* = quoted and unquoted value of bonds and debentures - other, preferred stocks or mortgage loans;

*duration* = the higher of 1 or the group's effective asset duration less the group's effective liability duration or the group's effective liability duration less the group's effective asset duration; and

*marketdecline* = assumed interest rate shock supplied by BMA.

### ***Items***

- D4.4 Bonds and Debentures – Based on current year Form 1EBS, lines 2(b) and 3(b); total quoted and unquoted value of bonds and debentures.
- D4.5 Preferred Stocks – Based on current year Form 1EBS, lines 2(c)(ii) and 3(c)(ii); total quoted and unquoted value of preferred stocks portfolio.
- D4.6 Mortgage Loans – Based on current year Form 1EBS, line 5(c); total amortized cost (outstanding principal amount less any provision made for doubtful collection) of mortgage loan portfolio.
- D4.7 Effective Duration of Assets – The effective duration calculation is based on total bonds and debentures (Form 1EBS, lines 2(b) and 3(b), preferred stocks (Form 1EBS, lines 2(c)(ii) and 3(c)(ii), and mortgage loans portfolios (Form 1EBS, line 5(c)). The effective asset duration is pulled from Schedule V, line (c).

D4.8 Effective Duration of Liabilities – The effective duration calculation is based on the reserves (Form 1EBS, lines 17(d) and 27(d)). The effective liability duration is pulled from Schedule V, line (d).

***Instructions Affecting Interest Rate/Liquidity Risk***

- a) All assets comprising of total bonds and debentures, preferred stock, and mortgage loans investments that are subject to capital charges within the interest rate/liquidity risk charge shall be included;
- b) All quoted and unquoted non-affiliated other bonds and debentures and preferred stock shall be included in the interest rate/liquidity risk charge; and

D4.9 All other bonds and debentures, preferred stock, and mortgage loans investments shall be reported on a basis consistent with that used for purposes described in the Prudential Standard Rules Schedule XIV and the guidance note for the statutory reporting regime.

## D5. CURRENCY RISK

### *Background*

- D5.1 The currency risk charge is based on amounts reported on Form 1EBS total assets and liabilities. It represents the risk that the net position of an insurance group may worsen as a result of exchange rate changes if assets and liabilities are not currency matched. Insurance groups are to include at least 95% of their total assets and liabilities based on the predefined five currency types (USD, Euro, GBP, Canadian Dollar and Japanese Yen) and ten other currency types.
- D5.2 The charge is first calculated by determining the assessment charge which is based on the greater of:
- a) The prior year Group ECR charge to the prior year total EBS liabilities reported and
  - b) The average of the last three prior years' Group ECR charge to last three prior years total EBS liabilities reported.
- D5.3 The currency risk capital charge is applied based on the asset held for each currency type less the liabilities and the proxy BSCR (proxy BSCR is determined by applying the assessment charge to the currency type's liabilities). In instances there is a currency type that has insufficient assets held to the liabilities and proxy BSCR, a 25% capital charge is applied to the difference, if there are sufficient assets held to the liabilities and proxy BSCR, then there is no/NIL capital charge applied.

### *Currency Risk Capital Charge*

- D5.4 The currency risk charge calculation can be summarised by the following formula:

$$C_{Curr} = \sum_i \chi_i \times (Currproxybscr_i + Currliab_i - Currast_i), \quad \text{where}$$

$$\chi_i = 25\% \text{ where } (Currast_i - Currliab_i) < 0$$

0% otherwise

$Currency_i$  = refers to currency type that has been translated to the functional currency as expressed in Form 1EBS

$GrossCurrast_i$  = value of assets corresponding to  $Currency_i$  as reported on Form 1EBS line 15

$Currast_i$  = value of assets corresponding to  $Currency_i$  as reported on Form 1EBS line 15 adjusted to allow for currency hedging arrangements

$GrossCurrliab_i$  = value of liabilities corresponding to  $Currency_i$  as reported on Form 1EBS line 39.

- $Currliab_i$  = value of liabilities corresponding to  $Currency_i$  as reported on Form 1EBS line 39 adjusted to allow for currency hedging arrangements
- $Currproxybscr_i$  = refers to the product of  $GrossCurrliab_i$  and BSCR Proxy factor; and
- $BSCR Proxyfactors$  = greater of:
- The Enhanced Capital Requirement divided by Form 1EBS line 39 Total Liabilities for the preceding year;
  - The average of the above ratio for the preceding three years.

Where there are no prior submissions available, the BSCR proxy factor is the above ratio that would be obtained from the current submission without taking into account the currency risk charge.

#### **Items**

- D5.5 EBS Assets by Currency Types – Based on current year Form 1EBS line 15; 95% of total EBS assets by type of currency.
- D5.6 EBS Liabilities by Currency Types – Based on current year Form 1EBS line 39; 95% of total EBS liabilities by type of currency.
- D5.7 Total Group ECR Requirement– Based on three prior years Group ECR Requirement.
- D5.8 Total EBS Liabilities– Based on three prior years Form 1EBS line 39; total EBS liabilities (note if the EBS liabilities for the preceding three years is not available, provide the statutory liability as reported on line 39).

#### **Instructions Affecting Currency Risk**

- Where the insurance group uses currency hedging arrangements to manage its currency risk, then  $Currast_i$  and  $Currliab_i$  may reflect the impact of those arrangements on  $GrossCurrast_i$  and  $GrossCurrliab_i$  of a 25% adverse movement in foreign exchange currency rates, otherwise the amounts  $GrossCurrast_i$  and  $GrossCurrliab_i$  shall apply;
- Any adjustment to reflect currency hedging arrangements shall not apply to the calculation of  $Currproxybscr_i$ ;
- ‘Currency hedging arrangements’ means derivative or other risk mitigation arrangements designed to reduce losses due to foreign currency exchange movements, and which meet the Authority’s requirements to be classed as such; and
- Insurance groups are to report currencies representing at least 95% of their economic balance sheet liabilities.

## D6. CONCENTRATION RISK

### *Background*

- D6.1 The concentration risk charge is based on asset counterparty exposures as reported on the Form 1EBS. It represents the risk of losses due to asset concentrations.
- D6.2 The charge is calculated by aggregating all the Asset Type, Bond/Mortgage Loan Type (if applicable), BSCR Rating (if applicable) and Asset Value together and assigning the values to the respective fixed income, equity, credit capital factor charge.

### *Concentration Risk Capital Charge*

- D6.3 The concentration risk charge calculation can be summarised by the following formula:

$$C_{Conc} = \sum_i \chi_i \times Concastclass_i \quad \text{where}$$

$\chi_i$  = the capital charge factors supplied by the BMA for each type  $Concastclass_i$  of and

$Concastclass_i$  = value of corresponding asset in Asset Class.

### *Items*

- a) Cash and Cash Equivalents

| Line Item |               | Description                     |
|-----------|---------------|---------------------------------|
| 1         | BSCR rating 0 | Based on Schedule XXI, column D |
| 2         | BSCR rating 1 | Based on Schedule XXI, column D |
| 3         | BSCR rating 2 | Based on Schedule XXI, column D |
| 4         | BSCR rating 3 | Based on Schedule XXI, column D |
| 5         | BSCR rating 4 | Based on Schedule XXI, column D |
| 6         | BSCR rating 5 | Based on Schedule XXI, column D |
| 7         | BSCR rating 6 | Based on Schedule XXI, column D |
| 8         | BSCR rating 7 | Based on Schedule XXI, column D |
| 9         | BSCR rating 8 | Based on Schedule XXI, column D |

- b) Corporate & Sovereign Bonds



| Line Item |               | Description                     |
|-----------|---------------|---------------------------------|
| 1         | BSCR rating 0 | Based on Schedule XXI, column D |
| 2         | BSCR rating 1 | Based on Schedule XXI, column D |
| 3         | BSCR rating 2 | Based on Schedule XXI, column D |
| 4         | BSCR rating 3 | Based on Schedule XXI, column D |
| 5         | BSCR rating 4 | Based on Schedule XXI, column D |
| 6         | BSCR rating 5 | Based on Schedule XXI, column D |
| 7         | BSCR rating 6 | Based on Schedule XXI, column D |
| 8         | BSCR rating 7 | Based on Schedule XXI, column D |
| 9         | BSCR rating 8 | Based on Schedule XXI, column D |

c) Residential Mortgage- Backed Securities

| Line Item |               | Description                     |
|-----------|---------------|---------------------------------|
| 1         | BSCR rating 0 | Based on Schedule XXI, column D |
| 2         | BSCR rating 1 | Based on Schedule XXI, column D |
| 3         | BSCR rating 2 | Based on Schedule XXI, column D |
| 4         | BSCR rating 3 | Based on Schedule XXI, column D |
| 5         | BSCR rating 4 | Based on Schedule XXI, column D |
| 6         | BSCR rating 5 | Based on Schedule XXI, column D |
| 7         | BSCR rating 6 | Based on Schedule XXI, column D |
| 8         | BSCR rating 7 | Based on Schedule XXI, column D |
| 9         | BSCR rating 8 | Based on Schedule XXI, column D |

d) Commercial Mortgage-Backed Securities/Asset-Backed Securities

| Line Item |               | Description                     |
|-----------|---------------|---------------------------------|
| 1         | BSCR rating 0 | Based on Schedule XXI, column D |
| 2         | BSCR rating 1 | Based on Schedule XXI, column D |
| 3         | BSCR rating 2 | Based on Schedule XXI, column D |
| 4         | BSCR rating 3 | Based on Schedule XXI, column D |
| 5         | BSCR rating 4 | Based on Schedule XXI, column D |

| Line Item |               | Description                     |
|-----------|---------------|---------------------------------|
| 6         | BSCR rating 5 | Based on Schedule XXI, column D |
| 7         | BSCR rating 6 | Based on Schedule XXI, column D |
| 8         | BSCR rating 7 | Based on Schedule XXI, column D |
| 9         | BSCR rating 8 | Based on Schedule XXI, column D |

e) Bond Mutual Funds

| Line Item |               | Description                     |
|-----------|---------------|---------------------------------|
| 1         | BSCR rating 0 | Based on Schedule XXI, column D |
| 2         | BSCR rating 1 | Based on Schedule XXI, column D |
| 3         | BSCR rating 2 | Based on Schedule XXI, column D |
| 4         | BSCR rating 3 | Based on Schedule XXI, column D |
| 5         | BSCR rating 4 | Based on Schedule XXI, column D |
| 6         | BSCR rating 5 | Based on Schedule XXI, column D |
| 7         | BSCR rating 6 | Based on Schedule XXI, column D |
| 8         | BSCR rating 7 | Based on Schedule XXI, column D |
| 9         | BSCR rating 8 | Based on Schedule XXI, column D |

f) Preferred Shares

| Line Item |               | Description                     |
|-----------|---------------|---------------------------------|
| 1         | BSCR rating 1 | Based on Schedule XXI, column D |
| 2         | BSCR rating 2 | Based on Schedule XXI, column D |
| 3         | BSCR rating 3 | Based on Schedule XXI, column D |
| 4         | BSCR rating 4 | Based on Schedule XXI, column D |
| 5         | BSCR rating 5 | Based on Schedule XXI, column D |
| 6         | BSCR rating 6 | Based on Schedule XXI, column D |
| 7         | BSCR rating 7 | Based on Schedule XXI, column D |
| 8         | BSCR rating 8 | Based on Schedule XXI, column D |

g) Mortgage Loans

| Line Item |                                     | Description                     |
|-----------|-------------------------------------|---------------------------------|
| 1         | Insured/Guaranteed Mortgages        | Based on Schedule XXI, column D |
| 2         | Other Commercial and Farm Mortgages | Based on Schedule XXI, column D |
| 3         | Other Residential Mortgages         | Based on Schedule XXI, column D |
| 4         | Mortgages Not In Good Standing      | Based on Schedule XXI, column D |

h) Other Asset Classes

| Line Item |   | Description                     |
|-----------|---|---------------------------------|
| 1         | Quoted and Unquoted Common Stock and Mutual Funds                               | Based on Schedule XXI, column D |
| 2         | Other Quoted and Unquoted Investments   | Based on Schedule XXI, column D |
| 3         | Investment in Affiliates – Unregulated entities that conduct ancillary services | Based on Schedule XXI, column D |
| 4         | Investment in Affiliates – Unregulated non-financial operating entities         | Based on Schedule XXI, column D |
| 5         | Investment in Affiliates – Unregulated financial operating entities             | Based on Schedule XXI, column D |
| 6         | Investment in Affiliates – Regulated insurance financial operating entities     | Based on Schedule XXI, column D |
| 7         | Advances to Affiliates –  | Based on Schedule XXI, column D |
| 8         | Policy Loans  | Based on Schedule XXI, column D |
| 9         | Real Estate: occupied by company  | Based on Schedule XXI, column D |
| 10        | Real Estate: other properties   | Based on Schedule XXI, column D |
| 11        | Collateral Loans  | Based on Schedule XXI, column D |

***Instructions Affecting Concentration Risk***

- a) *Concastclass<sub>i</sub>* shall only apply to the insurance groups ten largest counterparty exposures based on the aggregate of all instruments included in Table above, which related to that counterparty
- b) A counterparty shall include all related/connected counterparties defined as:
  - (i) Control relationship: if the counterparty, directly or indirectly, has control over the other(s); or
  - (ii) Economic interdependence: if one of the counterparties were to experience financial problems, in particular funding or repayment difficulties, the other(s) as a result, would also be likely to encounter funding or repayment difficulties;
- c) It is allowed to perform look through on collective investment funds such as equity and hedge funds as well as on exposures to diversified fund-of-one structures, whenever information at position level is available. Instructions on points a) and b) above apply also in this case.

## **D7. PREMIUM RISK**

### ***Background***

- D7.1 The premium risk charge is based on reported net premiums written for the latest calendar year by predefined statutory lines of business, and if available, reporting net premiums written by predefined statutory geographic locations. Note that although net premiums written for Property Catastrophe business are inputted in this section, they do not enter the calculation of the premium risk charge. All capital requirements pertaining to catastrophe exposures are explicitly calculated in the Catastrophe Risk section.
- D7.2 The first step of the calculation applies a statutory line of business specific premium risk capital factor to the respective net premiums written amounts.
- D7.3 The second step of the calculation applies a sum squared diversification credit based on 18 geographic zones. Note that this is not a necessary requirement in the premium risk calculation and if used, this is not required for all lines of business.
- D7.4 In the Premium risk calculation, a concentration adjustment is determined to reflect the overall diversification of the premium risk. Finally, there is a further adjustment to reflect the fact that some of the lines of business premiums other than Property Catastrophe, include a loading for losses resulting from natural catastrophes. The appropriate risk charge for this portion of the premiums is calculated in the Catastrophe Risk section; the premium risk charge is reduced to avoid double counting.
- D7.5 The concentration adjustment factor is based on the ratio of the largest individual line of net premiums written to total net premiums written. If all net premiums written are allocated to a single line of business (other than Property Catastrophe), this ratio is equal to 100%. If net premiums written are evenly spread among five lines of business (other than Property Catastrophe), this ratio is equal to 20%. The concentration adjustment factor is obtained by multiplying this ratio by 40% and then adding 60%. Therefore, for an insurance group with only one line of business the concentration adjustment factor is 100%, which means that no adjustment is made for diversification and the required premium risk charge is the same as that calculated in the first step. For an insurance group with net premiums written that are evenly spread among five lines of business, the concentration adjustment factor is 68%, leading to a required premium risk charge that is lower than the sum of all the individual lines of business premium risk charges calculated in the first step.

### ***Premium Risk Capital Charge***

- D7.6 The premium risk charge calculation can be summarised by the following formula:

$$C_{prem} = \left[ \sum_{i>1} \alpha_i \times geolineprem_i \right] \times \left[ \max_{i>1} \left\{ \frac{geolineprem_i}{totalprem} \right\} \times \mu + \vartheta \right] - \left[ avgpremcap \times \frac{avgannloss}{catlossratio} \right]$$

,where

$\alpha_i$  = individual  $geolineprem_i$  premium risk capital charge factor;

$totalprem$  = total geographic diversification of premium measure over all lines of business (except Property Catastrophe) (i.e.,)  $\sum_{i>1} geolineprem_i$  ;

$geolineprem_i$  = geographic diversification of premium measure for line of business  $i$  ;

$avgpremcap$  = weighted average premium risk capital charge factor (after concentration adjustment and allowing for geographic diversification);

$avgannloss$  = average annual loss estimated with catastrophe models;

$catlossratio$  = expected industry average catastrophe loss ratio provided by the BMA.

$\mu$  = additional concentration adjustment factor equal to 40%; and

$\vartheta$  = minimum concentration adjustment factor equal to 60%;

### Items

- a) Lines of Business – As categorised by the 24 predefined statutory lines of business.

| Line Item |                         | Description   |
|-----------|-------------------------|---|
| 1         | Gross Premiums Written  | Column (1): Current year gross premiums written by predefined statutory line of business and geographic zone, as reported on Schedule IVA, lines (1) to (24). Total must tie to the Total Gross Premiums Written of Form 2, line 1(c).                |
| 2         | Net Premiums Written    | Column (2): Current year net premiums written (after reinsurance) by predefined statutory line of business and geographic zone, as reported on Schedule IVA, lines (1) to (24). Total must tie to the Total Net Premiums Written of Form 2, line 3.   |
| 3         | Geo Diversified Written | Column (3): Current year net premiums written (after reinsurance) by predefined statutory line of business and geographic zone, as reported on Schedule IVC, lines (1) to (24). Total must tie to the Total Net Premiums Written of Form 2, line (3). |
| 4         | Capital Factor          | Column (4): Supplied by BMA; premium charge factors for individual lines of business.   |

| Line Item |                  | Description  |
|-----------|------------------|--|
| 5         | Required Capital | Column (5): Calculated using [column (3) x column (4)]; premium charge amounts for individual lines of business. |

- b) Concentration Adjustment Calculation – Calculates a factor that determines how much credit is given for diversification of premium risk across all lines of business other than Property Catastrophe.

| Line Item |                                 | Description   |
|-----------|---------------------------------|---|
| 1         | Maximum Premium                 | Row (i): Calculated using Max [column (1) of (a) excluding Property Catastrophe]; largest premium amount appearing in column (1) of (a), excluding the premium amount for Property Catastrophe.   |
| 2         | Total Premium                   | Row (ii): Calculated using Sum [column (1) of (a) excluding Property Catastrophe]; total of premium amounts appearing in column (1) of (a), excluding the premium amount for Property Catastrophe.  |
| 3         | Maximum Premium/Total Premium   | Row (iii): Calculated using [row (i)/row (ii)]; ratio that measures the degree of concentration.  |
| 4         | Maximum Adjustment              | Row (iv): Supplied by BMA; parameter that limits the maximum credit that is given for diversification.  |
| 5         | Minimum Adjustment Factor       | Row (vi): Calculated using [1 - row (iv)]; lower bound for the concentration adjustment factor. The formula ensures that no diversification credit will be given when all net premiums written other than Property Catastrophe are concentrated in a single line of business. |
| 6         | Concentration Adjustment Factor | Calculated using [row (iii) x row (iv) + row (vi)].   |

- c) Required Capital Charge – Calculated using [(Total of column (3) of (a)) x (Concentration Adjustment Factor)]; premium risk capital charge, after concentration factor adjustment, but before adjustment for natural catastrophe exposure.
- d) Catastrophe Premium Adjustment Calculation – Calculation reflects a reduction to the required premium risk capital for the ‘catastrophe-exposed’ portion of the premium that is otherwise contemplated within the catastrophe risk capital charge. See Catastrophe Risk section for further information.

| Line Item |  | Description   |
|-----------|--|---|
| 1         | Average Annual Loss Excluding Property Catastrophe (AAL) | Row (i): Pulled from Catastrophe Risk section; the expected net natural catastrophe loss (after reinsurance), including reinstatement premiums, for annual aggregate exposure to all risks and perils other than those relating to the Property Catastrophe line of business. See Catastrophe Risk section for further information. |
| 2         | Industry Catastrophe Loss Ratio                          | Row (ii): Pulled from the Catastrophe Risk section; used to calculate the embedded catastrophe premiums from lines of business other than Property Catastrophe. See Catastrophe Risk section for further information.   |
| 3         | Average Capital Factor                                   | Row (iii): Calculated using (c) / [row (ii) of (b)]; ratio of required premium risk capital charge after concentration adjustment to total net premiums written excluding Property Catastrophe.   |
| 4         | Catastrophe Premium Adjustment                           | Calculated using [row (i) / row (ii) x row (iii)].  |

- e) Required Capital Charge Adjusted for Catastrophe Premium – Calculated using [(c) - (d)]; the premium risk capital charge (after concentration factor and catastrophe adjustment) is carried to the Summary section.

### ***Instructions Affecting Premium Risk***

- D7.6a All reported net premiums written for the relevant year by statutory line of business as prescribed in this schedule that are subject to capital charges within the premium risk charge shall be included;
- D7.6b All net premiums written by statutory line of business shall be reported on a basis consistent with that used for purposes of statutory financial reporting; and
- D7.6c An insurance group may provide premium exposure for all statutory lines of general business, or for particular statutory lines of general business, split by geographic zone as set out by the BMA.  $geolineprem_i$  is then derived from the total premium for that line of business by reducing the total by 25% times  $\frac{\sum x_i^2}{(\sum x_i)^2}$  where  $x_i$  = net premiums written in that line of business for  $Zone_i$ ; and where summation covers all zones.



## D8. RESERVE RISK

### *Background*

- D8.1 The reserve risk charge is based on the statutory net loss and loss expense provisions by predefined statutory lines of business, and if available, reporting net technical provision by predefined statutory geographic locations.
- D8.2 The first step of the calculation applies a line of business specific reserve risk capital factor to the respective reserve amounts.
- D8.3 In the second step of the calculation applies sum squared diversification credit based on 18 geographic zones. Note that this is not a necessary requirement in the reserve risk calculation and if used, this is not required for all lines of business.
- D8.4 The Reserve risk calculation, a concentration adjustment is determined to reflect the overall diversification of the reserve risk.
- D8.5 The concentration adjustment factor is based on the ratio of the largest individual line of business reserve to total reserves. If all reserves are allocated to a single line of business, this ratio is equal to 100%. If the reserves are evenly spread among five lines of business, this ratio is equal to 20%. The concentration adjustment factor is obtained by multiplying this ratio by 40% and then adding 60%. Thus, for an insurance group with only one line of business the concentration adjustment factor is 100%, which means that no adjustment is made for diversification and the required reserve risk charge is the same as that calculated in the first step. For an insurance group with reserves that are evenly spread among five lines of business the concentration adjustment factor is 68%, leading to a required reserve risk charge that is lower than the sum of all the individual line of business reserve risk charges calculated in the first step.

### *Reserve Risk Capital Charge*

- D8.6 The reserve risk charge calculation can be summarised by the following formula:

$$C_{rsvs} = \left[ \sum_i \beta_i \times geolinersvs_i \right] \times \left[ \max_i \left\{ \frac{geolinersvs_i}{totalrsvs} \right\} \times \mu + \vartheta \right], \quad \text{where}$$

$\beta_i$  = individual  $geolinersvs_i$  reserve risk charge factor;

$totalrsvs$  = total geographic diversification of reserves over all lines of business, i.e.  $\sum_{i>1} geolinersvs_i$ ;  $geolinersvs_i$  = geographic diversification of reserve

measure for individual line of business  $i$ ;

- $\mu$  = additional concentration adjustment factor equal to 40%; and  
 $\mathcal{G}$  = minimum concentration adjustment factor equal to 60%.

**Items**

- a) Lines of Business – As categorised by the 24 predefined statutory lines of business.

| Line Item |  | Description   |
|-----------|--|---|
| 1         | Gross Loss and Loss Expense Provisions | Column (1): Gross loss and loss expense provisions by predefined statutory line of business, as reported on Schedule III, lines (1) to (24). Total must tie to the Gross Loss and Loss Expense Provisions of the economic balance sheet (Form 1EBS, line 17 (a)).   |
| 2         | Net Loss and Loss Expense Provisions   | Column (2): Net loss and loss expense provisions by predefined statutory line of business and geographic zone, as reported on Schedule IIIA, lines (1) to (24). Total must tie to the Net Loss and Loss Expense Provisions of the economic balance sheet (Form 1EBS, line 17(d) and should be input on an undiscounted basis.           |
| 1         | Net Loss and Loss Expense Provisions   | Column (3): Net loss and loss expense provisions by predefined statutory line of business and geographic zone, as reported on Schedule IIIA, lines (1) to (24). Total must tie to the Net Loss and Loss Expense Provisions of the economic balance sheet (Form 1EBS, line 17(d) and should be input on an economic balance sheet basis. |
| 2         | Capital Factor                         | Column (4): Supplied by the BMA; reserve charge factors for individual lines of business.   |
| 3         | Required Capital                       | Column (5): Calculated using [column (3) x column (4)]; reserve charge amounts for individual lines of business.  |

- b) Concentration Adjustment Calculation – Calculates a factor that determines how much credit is given for diversification of reserve risk across all lines of business.

| Line Item |                               | Description  |
|-----------|-------------------------------|--|
| 1         | Maximum Reserve               | Row (i): Calculated using max [column (1) of (a)]; largest reserve amount appearing in [column (1) of (a)].    |
| 2         | Total Reserve                 | Row (ii): Calculated using sum [column (1) of (a)]; total of reserve amounts appearing in [column (1) of (a)]. |
| 3         | Maximum Reserve/Total Reserve | Row (iii): Calculated using [row (i)/row (ii)]; this ratio measures the degree of concentration.               |

| Line Item |                                 | Description   |
|-----------|---------------------------------|---|
| 4         | Maximum Adjustment              | Row (iv): Supplied by the BMA; parameter that limits the maximum credit that is given for diversification.  |
| 5         | Minimum Adjustment Factor       | Row (vi): Calculated using [1 - row (iv)]; lower bound for the concentration adjustment factor. The formula ensures that no diversification credit will be given when all net premiums written are concentrated in a single line of business. |
| 6         | Concentration Adjustment Factor | Calculated using [row (iii) x row (iv) + row (vi)].   |

- c) Required Capital Charge – Calculated using [(total of column (3) of (a)) x (Concentration Adjustment Factor)]; the reserve capital charge (after concentration factor adjustment) is carried to the Summary section.

***Instructions Affecting Reserve Risk***

- D8.6a All reported net loss and loss expense provisions for the relevant year by statutory line of business as prescribed in this schedule are subject to capital charges within the reserve risk charge shall be included;
- D8.6b All reported net loss and loss expense provisions by statutory line of business shall be reported on a basis consistent with that used for purposes of statutory financial reporting; and
- D8.6c An insurance group may provide loss and loss expense provisions exposure for all statutory lines of general business, or for particular statutory lines of general business, split by geographic zone as set out by the BMA.  $geoliners_{vs_i}$  is then derived from the total loss and loss expense provisions for that line of business by reducing the total by 25% times  $\frac{\sum x_i^2}{(\sum x_i)^2}$  where  $x_i$  = best estimate net loss and loss expense provisions in that line of business for  $Zone_i$ ; and where the summation covers all zones.

## D9. CREDIT RISK

### *Background*

- D9.1 Credit risks are partitioned into three categories: accounts and premiums receivable, reinsurance balances, and all other receivables.
- D9.2 Where applicable, the amounts must reconcile to the appropriate line(s) of the insurance group's Form 1EBS or to the schedules prescribed by or under the Prudential Standard Rules for the relevant year.

### *Credit Risk Capital Charge*

- D9.3 The credit risk charge calculation can be summarised by the following formula:

$$C_{cred} = \sum_i \delta_i \times debtor_i \times \mu_r, \quad \text{where}$$

$\delta_i$  = BMA-supplied credit risk capital charge factor for type of debtor<sup>i</sup>;

$debtor_i$  = receivable amount from debtor<sup>i</sup>; and

$\mu_{r_i}$  = additional diversification adjustment factor applied to reinsurance balances only taking into consideration diversification by number of reinsurers, equal to 40%.

### *Items*

#### a) Accounts and Premiums Receivable

| Line Item |  | Statement Source – The IAR   |
|-----------|--|--|
| 1         | In course of collection  | Based on Form 1EBS, line 10(a).  |
| 3         | Receivables from retrocessional contracts<br>Less: Collateralised balances | Based on Form 1EBS, line 10(c) less Notes to Form 1EBS.<br><br>Collateralised balances are all collaterals issued in favour of the group members relating to accounts and premiums receivable. Assets accounted in Form 1EBS, line (34) should not be included here. |

- b) Particulars of reinsurance balances by BSCR rating - (i) amounts receivable on account of policies of reinsurance from any person, whether an affiliate or not, should be included; (ii) any amount included in 'Accounts and Premiums Receivable' and 'Funds Held by Ceding Reinsurers' should not be included; (iii)

all uncollectible amounts, as determined by the insurance group, should be deducted.

| Line Item |                                  | Statement Source – The Rules     |
|-----------|----------------------------------|----------------------------------|
| 1         | BSCR rating 0                    | Based on Schedule XVIII column E |
| 2         | BSCR rating 1                    | Based on Schedule XVIII column E |
| 3         | BSCR rating 2                    | Based on Schedule XVIII column E |
| 4         | BSCR rating 3                    | Based on Schedule XVIII column E |
| 5         | BSCR rating 4                    | Based on Schedule XVIII column E |
| 6         | BSCR rating 5                    | Based on Schedule XVIII column E |
| 7         | BSCR rating 6                    | Based on Schedule XVIII column E |
| 8         | BSCR rating 7                    | Based on Schedule XVIII column E |
| 9         | BSCR rating 8                    | Based on Schedule XVIII column E |
| 10        | Less: Diversification adjustment | Based on Schedule XVIII column E |

c) All Other Receivables

| Line Item |                           | Statement Source – IAR         |
|-----------|---------------------------|--------------------------------|
| 1         | Advances to affiliates    | Based on Form 1EBS, line 4(g). |
| 2         | Accrued investment income | Based on Form 1EBS, line 9.    |
| 3         | Policy loans              | Based on Form 1EBS, line 6.    |

***Instructions Affecting Credit Risk***

- a) All accounts and premiums receivable and all other receivables that are subject to capital charges within the credit risk charge shall be included;
- b) All accounts and premiums receivable, reinsurance balances receivables, all other receivables, and reinsurance recoverable balances shall be reported on a basis consistent with that used for purposes of statutory financial reporting;

- c) Collateralised balances are all collaterals issued in favour of the insurance group relating to accounts and premiums receivable;
- d) The net qualifying exposure comprises of reinsurance balances receivable and reinsurance recoverable balances less the corresponding reinsurance balances payable and other payables less the qualifying collateral issued in favour of the insurance group in relation to the reinsurance balances;
- e) The net qualifying exposure in instruction (d) shall be subject to the prescribed credit risk capital factor;
- f) The total capital requirement relating to the reinsurance balances shall be reduced by a diversification adjustment of up to a maximum of 40%; and
- g) The diversification adjustment in instruction (f) is determined as 40% multiplied by 1 minus the ratio of the largest net reinsurance exposure, on an individual reinsurer basis, to total net reinsurance exposure.

## **D10. CATASTROPHE RISK**

### ***Background***

- D10.1 The catastrophe risk charge is based on group-specific catastrophe risk modelling output. All exposures and premiums used in the Probable Maximum Loss (PML) and Average Annual Loss (AAL) calculations should include amounts for second, third and subsequent events or losses following the initial loss event. Modeled losses should include demand surge, storm surge, fire following earthquakes and secondary uncertainty.
- D10.2 The calculated catastrophe risk charge has two components. The first component is the average premium shortfall for the top 1% worst case scenarios (i.e., at the 99.0% TVaR level). The second component is a credit risk charge for reinsurance recoverables under the 1% worst case scenarios. Since the PML calculations use annual aggregate exposure for all risks, the formula uses an imputed Total Catastrophe Premium in its calculation of the premium shortfall component. In addition to actual Property Catastrophe Premiums, this imputed Total Catastrophe Premium is based on the AAL divided by the industry catastrophe loss ratio as determined by the BMA.

### ***Catastrophe Risk Capital Charge***

- D10.3 The catastrophe risk charge calculation can be summarised by the following formulae:

$$C_{cat} = NetPML - Netcatprem + CRPML, \quad \text{where}$$

*NetPML* = Net probable maximum loss;

*Netcatprem* = Property catastrophe premium + (modeled AAL) / (estimated industry catastrophe loss ratio of 40.0%); and

*CRPML* = Credit risk charge associated with reinsurance recoveries of ceded catastrophe losses calculated as {(gross probable maximum loss less net probable maximum loss less arrangements with respect to property catastrophe recoverables) x credit risk charge equal to 10.0% }.

- a) Gross Probable Maximum Loss – Based on the insurance group’s catastrophe model; probable maximum gross natural catastrophe loss (prior to reinsurance) at the 99.0% TVaR level for annual aggregate exposure to all related risks and perils, including reinstatement premiums, for the year following the ‘relevant year’ as reported on Schedule V, line (h).
- b) Net Probable Maximum Loss – Based on the insurance group’s catastrophe model; probable maximum net natural catastrophe loss (after reinsurance) at the 99.0% TVaR level for annual aggregate exposure to all related risks and perils,

including reinstatement premiums, for the year following the 'relevant year' as reported on Schedule V, line (i).

- c) Average Annual Loss Excluding Property Catastrophe (AAL) – Based on the insurance group's catastrophe model; the expected net natural catastrophe loss (after reinsurance), including reinstatement premiums, for annual aggregate exposure to all related risks and perils other than those relating to the Property Catastrophe line of business for the year following the 'relevant year' as reported on Schedule V, line (j). The AAL should be calculated from the same underlying loss distribution used to determine the Gross PML and Net PML (excluding the property catastrophe component).
- d) Industry Catastrophe Loss Ratio – Supplied by the BMA; used to calculate the embedded catastrophe premiums from lines of business other than Property Catastrophe.
- e) Property Catastrophe Premium – Copied from Premium Risk section; current year net premiums written amount for Property Catastrophe line of business as reported on Schedule IVA, line (1).
- f) Total Catastrophe Premium – Is calculated using  $[(c) / (d) + (e)]$ ; used to calculate the embedded catastrophe premiums from lines of business other than Property Catastrophe.
- g) Credit Risk Capital Factor – Supplied by BMA; credit risk factor applied to ceded catastrophe losses at the 99.0% TVaR level equal to 10.0%.
- h) Arrangements with Respect to Property Catastrophe Recoverables – Copied from Schedule V, line (l)(v).
- i) Credit Risk Charge – Calculated using  $[(a) - (b) - ((h) * 98\%) \times (g)]$ ; ceded catastrophe losses times the catastrophe credit risk capital factor.
- j) Catastrophe Capital Charge – Calculated using  $[(b) - (f) + (i)]$ ; the catastrophe capital charge is carried to the Summary section.



***Instructions Affecting Catastrophe Risk***

- a) All reported net probable maximum loss, gross probable maximum loss, average annual loss excluding property catastrophe, property catastrophe premium and arrangements with respect to property catastrophe recoverables as prescribed in Schedule V that are subject to capital charges within the catastrophe risk charge shall be included; and

D10.4      The amount of collateral and other funded arrangements with respect to property catastrophe recoverables shall be reported and reduced by 2% to account for the market risk associated with the underlying collateral assets.

## D11. INSURANCE RISK – MORTALITY

### *Background*

- D11.1 Insurance products that are considered to be exposed to mortality risk include term assurance, whole life, universal life, and accidental death and dismemberment insurance. These exclude life policies with critical illness acceleration riders.
- D11.2 The insurance risk-mortality charge is calculated by applying a capital factor to the respective net amount at risk. The capital risk factors are applied on an additive basis (i.e. 3.97/1000 on first \$1 billion of business, plus 1.80/1000 on the next \$4 billion of business, etc.).
- D11.3 A 50% reduction is applied to adjustable products and accidental death products. Adjustable products are defined as any insurance contracts in which the insurance group has the ability to make a material adjustment to the premiums/cost of insurance charges/dividends, based on recent experience.

### *Insurance Risk – Mortality Capital Charge*

- D11.4 The insurance risk - mortality charge calculation can be summarised by the following formula:

$$C_{LTmort} = [\sum_i \alpha 1_i \times NAAR1_i] + [\sum_i \alpha 2_i \times NAAR2_i], \quad \text{where}$$

$\alpha 1_i$  = capital charge factor for adjustable mortality long-term business;  
 $NAAR1_i$  = the net amount at risk of all adjustable mortality long-term business;  
 $\alpha 2_i$  = capital charge factor for non-adjustable mortality long-term business;  
and  
 $NAAR2_i$  = the net amount at risk of all non-adjustable mortality long-term business.

### *Items*

| Column Item |                    | Description   |
|-------------|--------------------|---|
| 1           | Net Amount At Risk | Column item 1: Net amount at risk for adjustable products/treaties, as reported on Schedule VII EBS, column (9), line 1; and Net amount at risk for non-adjustable products/treaties, as reported on Schedule VII EBS, column (10), line 1. |
| 2           | Capital Factor     | Column item 2: Supplied by the BMA; capital charge factors applied to individual net amount at risk for (a) adjustable products/treaties; and (b) non-adjustable products/treaties.   |
| 3           | Required Capital   | Column item 3: Calculated using [column item 1 x column item 2] for both (a) and (b) and summed up.   |

## **D12. INSURANCE RISK – STOP LOSS**

### ***Background***

- D12.1 A capital factor is applied to the respective net annual earned premiums of stop loss covers provided.

### ***Insurance Risk – Stop Loss Capital Charge***

- D12.2 The insurance risk – stop loss charge calculation can be summarised by the following formula:

$$C_{LTsl} = 50\% \times \text{net annual premium for stop loss covers.}$$

### ***Items***

| Column Item |                    | Description   |
|-------------|--------------------|---|
| 1           | Net Annual Premium | Column item 1: Net annual premium for stop loss covers, as reported on Schedule VII EBS, column (11), line 14.  |
| 2           | Capital Factor     | Column item 2: Supplied by the BMA; capital charge factors applied on net annual premiums for stop loss covers. |
| 3           | Required Capital   | Column item 3: Calculated using [column item 1 x column item 2].  |

### **D13. INSURANCE RISK – RIDERS**

#### ***Background***

- D13.1 For any other product riders not included in the following insurance risk charges: i) mortality; ii) morbidity and disability; iii) longevity; and iv) stop loss, a capital factor is applied to the respective net annual earned premiums.

#### ***Insurance Risk – Riders Capital Charge***

- D13.2 The insurance risk – riders charge calculation can be summarised by the following formula:

$$C_{LTr} = 25\% \times \text{net annual premium for insurance product riders not included elsewhere.}$$

#### ***Items***

| Column Item |                    | Description   |
|-------------|--------------------|---|
| 1           | Net Annual Premium | Column item 1: Net annual premium for other product riders, as reported on Schedule VII EBS, column (11), line 15.    |
| 2           | Capital Factor     | Column item 2: Supplied by the BMA; capital charge factors applied on net annual premiums for other products' riders. |
| 3           | Required Capital   | Column item 3: Calculated using [column item 1 x column item 2].  |

## **D14. INSURANCE RISK – MORBIDITY AND DISABILITY**

### ***Background***

- D14.1 Morbidity and disability risks are separated by critical illness insurance products and health insurance products.
- D14.2 For critical illness insurance products, including accelerated critical illness insurance products, a prescribed capital factor is applied to the net amount at risk, on an additive basis. A 50% reduction in the capital risk factors is applied to adjustable products.
- D14.3 Health insurance products include disability income products, long-term care insurance products, waiver of premium benefits, and other accidental and sickness products.

### ***Insurance Risk – Morbidity and Disability Capital Charge***

- D14.4 The insurance risk – morbidity and disability charge calculation can be summarised by the following formula:

$C_{LTmorb} = (a) + (b) + (c) + (d) + (e)$  where:

- a) = 7% x BSCR-adjusted reserves for disability income claims in payment on waiver of premium and Long-Term care;
- b) = 10% x BSCR-adjusted reserves for disability income claims in payment on other accident and sickness products;
- c) =  $\left[ \sum_i \alpha_i \times NAP_i \right]$  Where –  
 $\alpha_i$  = individual  $NAP_i$  capital charge factor;  
 $NAP_i$  = the Net Annual Premium for disability income business – active lives;
- d) = 12% x net annual premiums for disability income - active lives for other accident and sickness; and
- e) =  $\left[ \sum_i \alpha 1_i \times NAAR1_i \right] + \left[ \sum_i \alpha 2_i \times NAAR2_i \right]$  Where –  
 $\alpha 1_i$  = capital charge factor for adjustable critical illness insurance business;  
 $NAAR1_i$  = the Net Amount at Risk of all adjustable critical illness insurance business in force;  
 $\alpha 2_i$  = capital charge factor for non-adjustable critical illness insurance business; and  
 $NAAR2_i$  = the Net Amount at Risk of all non-adjustable critical illness insurance business in force.

### ***Items***

a) Subtotal Charge for Critical Illness

| Column Item |                    | Description  |
|-------------|--------------------|--|
| 1           | Net Amount At Risk | Column item 1: Net amount at risk for adjustable products/treaties, as reported on Schedule VII EBS, column (9), line 2; and Net amount at risk for non-adjustable products/treaties, as reported on Schedule VII , column (10), line 2. |
| 2           | Capital Factor     | Column item 2: Supplied by the BMA; capital charge factors applied to individual net amount at risk for (a) adjustable products/treaties; and (b) non-adjustable products/treaties.  |
| 3           | Required Capital   | Column item 3: Calculated using [column item 1 x column item 2] for both (a) and (b) and summed up.  |

b) Subtotal Charge for Disability Income (Active Lives with Premium Guarantee)

| Column Item |                    | Description   |
|-------------|--------------------|---|
| 1           | Net Annual Premium | Column item 1: Net annual premium with benefit period of less than or equal to two years listed according to length of premium guarantee, as reported on Schedule VII EBS, column (9) -<br>(i) Premium guarantee of less than one year – line 7(a),<br>(ii) Premium guarantee of more than one year but less than five years – line 7(b), and<br>(iii) Premium guarantee of over five years – line 7(c);<br>and Net annual premium with benefit period of greater than two years listed according to length of premium guarantee, as reported on Schedule VII EBS, column (10) —<br>(i) Premium guarantee of less than one year – line 7(a),<br>(ii) Premium guarantee of more than one year but less than five years – line 7(b), and<br>(iii) Premium guarantee of over five years – line 7(c). |
| 2           | Capital Factor     | Column item 2: Supplied by the BMA; capital charge factors applied to individual<br>a) Net annual premiums with benefit period of less than or equal to two years according to the length of premium guarantee –<br>(i) Less than one year,<br>(ii) More than a year but less than five years, and<br>(iii) Over five years; and<br>b) On net annual premiums with benefit period of greater than two years according to the length of premium guarantee –<br>(i) Less than one year,<br>(ii) More than a year but less than five years, and<br>(iii) Over five years.  |

| Column Item |                  | Description   |
|-------------|------------------|---|
| 3           | Required Capital | Column item 3: Calculated using [column item 1 x column item 2] for both (a) and (b) for each length of premium guarantee provided – (i), (ii) and (iii) – and summed up. |

c) Subtotal Charge for Disability Income (Claims in Payment)

| Column Item |                       | Description  |
|-------------|-----------------------|--|
| 1           | BSCR Adjusted Reserve | Column item 1: (a) Disability income: claims in payment relating to waiver of premium and long-term care, as reported on Schedule VII EBS, column (7), line 9; and Disability income: claims in payment relating to other accident and sickness, as reported on Schedule VII EBS, column (7), line 10. |
| 2           | Capital Factor        | Column item 2: Supplied by the BMA; capital charge factors applied to individual BSCR-adjusted reserves with respect to disability income – claims in payment relating to (a) waiver of premium and Long-Term care, and (b) other accident and sickness.   |
| 3           | Required Capital      | Column item 3: Calculated using [column item 1 x column item 2] for both (a) and (b) and summed up.  |

d) Subtotal Charge for Disability Income (Active Lives for other accident and sickness products):

| Column Item |                    | Description  |
|-------------|--------------------|--|
| 1           | Net Annual Premium | Column item 1: Net annual premium for disability income (active lives), including other accident and sickness; as reported on Schedule VII EBS, column (11), line 8. |
| 2           | Capital Factor     | Column item 2: Supplied by the BMA; capital charge factor applied on the net annual premium for disability income – active lives.                                    |
| 3           | Required Capital   | Column item 3: Calculated using [column item 1 x column item 2].   |

e) Total Charge – Calculated using lines [(a) + (b) + (c) + (d)] above; the resulting figure is carried to the Summary section.

## D15. INSURANCE RISK – LONGEVITY

### *Background*

D15.1 Products that are considered to be exposed to longevity risks include, but are not limited to, payout annuities and contingent annuities.

### *Insurance Risk – Longevity Capital Charge*

D15.2 The insurance risk – longevity charge calculation can be summarised by the following formula:

$$C_{LTlong} = \sum_i \alpha_i \times BAR_i \quad \text{Where –}$$

$\alpha_i$  = individual  $BAR_i$  capital charge factor; and

$BAR_i$  = the BSCR-adjusted reserves for long-term products with longevity risk.

### *Items*

| Column Item |                        | Description  |
|-------------|------------------------|--|
| 1           | BSCR Adjusted Reserves | <p>Column item 1: BSCR-adjusted reserves for long-Term products with longevity risk as follows:</p> <p>(a) Immediate pay-out annuities, contingent annuities, pension pay-outs according to the attained age of annuitant, as reported on Schedule VII EBS, column (7):</p> <ul style="list-style-type: none"> <li>(i) 0-55 – line 3(a)</li> <li>(ii) 56-65 – line 3(b)</li> <li>(iii) 66-70 – line 3(c)</li> <li>(iv) 71-80 – line 3(d) and</li> <li>(v) 81+ – line 3(e);</li> </ul> <p>(b) Deferred pay-out annuities, future contingent annuities, future pension pay-outs according to the age at which the annuity benefits commence, as reported on Schedule VII EBS, column (7):</p> <ul style="list-style-type: none"> <li>(i) 0-55 – line 4(a)</li> <li>(ii) 56-60 – line 4(b)</li> <li>(iii) 61-65 – line 4(c)</li> <li>(iv) 66-70 – line 4(d)</li> <li>(v) 71-75 – line 4(e) and</li> <li>(vi) 76+ – line 4(f)</li> </ul> |



| Column Item |                  | Description  |
|-------------|------------------|--|
| 2           | Capital Factor   | Column item 2: Supplied by the BMA; capital charge factor applied to individual BSCR-adjusted reserves for longevity risk for both (a) immediate pay-out annuities, contingent annuities, pension pay-outs – (i) to (v); and (b) deferred pay-out annuities, future contingent annuities, future pension pay-outs – (i) to (vi). |
| 3           | Required Capital | Column item 3: Calculated using [column item 1 x column item 2] for both (a) and (b) for each attained age of annuitant and for each age at which the annuity benefits commence, respectively, and summed up.  |

***Instructions Affecting Longevity Risk***

- a) For joint and survivor annuities, the youngest age should be used.

## **D16. OTHER INSURANCE RISK**

### ***Background***

D16.1 The other insurance risk captures other risks related to policyholder behaviour, expenses and guarantees.

### ***Other Insurance Risk Capital Charge***

D16.2 The other insurance risk charge calculation can be summarised by the following formula:

$$C_{LToth} = \sum_i \alpha_i \times BAR_i \text{ Where:}$$

$\alpha_i$  = individual  $BAR_i$  capital charge factor; and

$BAR_i$  = the BSCR-adjusted reserves for other insurance risk.

### ***Items***

| Line Item |                        | Description  |
|-----------|------------------------|--|
| 1         | BSCR Adjusted Reserves | Column item 1: Current year BSCR-adjusted reserves by the 15 predefined lines, as reported on Schedule VII EBS, column (1), lines 1 to 15. |
| 2         | Capital Factor         | Column item 2 Supplied by the BMA; capital charge factors applied to individual BSCR-adjusted reserves for other insurance risk.           |
| 3         | Required Capital       | Column item 3: Calculated using [column item 1 x column item 2] for each line item.  |

## **D17. VARIABLE ANNUITY GUARANTEE RISK**

### ***Background***

- D17.1 Variable annuity benefits are partitioned into five categories:
- a) Guaranteed Minimum Accumulation Benefit (GMAB);
  - b) Guaranteed Minimum Death Benefit (GMDB),
  - c) Guaranteed Minimum Income Benefit (GMIB),
  - d) Guaranteed Minimum Withdrawal Benefit (GMWB), and
  - e) Guaranteed Enhanced Earnings Benefit (GEEB). Variable annuities contain various minimum guarantees that expose insurance groups to risks of a particularly volatile nature.
- D17.2 The capital risk factors differentiate by volatility levels and are applied to the Net Amount at Risk ('NAR'). Volatility is defined as the annual historic volatility of the fund. In the case where there is no or limited, history of the fund, use the volatility of the benchmark. Where the Guarantee Value (GV) is less than the Account Value (AV), the minimum floor factors are applied to the account values. The proportion used for the AV under reinsurance is the proportion used for net amount at risk.
- D17.3 Net amount at risk (net of reinsurance) is defined as follows:
- a) GMAB – total claim payable if all contracts mature immediately;
  - b) GMDB – total claim amount payable upon immediate death of all policyholders;
  - c) GMIB – total claim payable upon full and immediate annuitisation of all policies using an 80% factor applied to the GV (the 80% represents the ratio between current market annuitisation factors and the guaranteed annuitisation factors);
  - d) GMWB – total claim payable if 100% of the guaranteed withdrawal benefit base in excess of the current AV is withdrawn immediately; and
  - e) GEEB – total guaranteed enhanced payments upon immediate death of all policyholders.

### ***Variable Annuity Guarantee Capital Charge***

- D17.4 The variable annuity guarantee risk charge calculation can be summarised by the following formula:

$$C_{LTV A} = \text{either } \left( \sum_i TotalBSReq_i - TotalBAR - TotalGMB_{adj} \right) \text{ or } (IMCReq_{LTV A}) \text{ wherein —}$$

- a)  $TotalBSReq_i$  = higher of (a)  $(\alpha1_i \times GV1_i + \alpha2_i \times GV2_i + \alpha3_i \times GV3_i)$  and (b)  $(\alpha4_i \times NAR1_i + \alpha5_i \times NAR2_i + \alpha6_i \times NAR3_i)$ ;
- b)  $TotalBAR$  = the total BSCR adjusted reserves for variable annuity guarantee risk;
- c)  $TotalGMDB_{adj}$  = capital requirement charged on Guaranteed Minimum Death Benefit (GMDB) policies multiplied by the percentage of GMDB with multiple guarantees;
- d)  $IMCReq_{LTV A}$  = the capital requirement for variable annuity guarantee risk determined in accordance with an insurance group's internal capital model, if applicable;
- e)  $GV1_i$ ,  $GV2_i$ ,  $GV3_i$ ,  $NAR1_i$ ,  $NAR2_i$ , and  $NAR3_i$  are the guaranteed value and net amount at risk under each range of volatility for each specified variable annuity product risk; and
- f)  $\alpha1_i$ ,  $\alpha2_i$ ,  $\alpha3_i$ ,  $\alpha4_i$ ,  $\alpha5_i$  and  $\alpha6_i$  are the capital factors applied to the guaranteed value and net amount at risk under each range of volatility for each specified variable annuity product risk.

**Items**

a) Factor-Based Capital Requirement

| Column Item |                                       | Description   |
|-------------|---------------------------------------|---|
| 1           | Guaranteed Values: Volatility 0%-10%  | Column (1): Guaranteed values for each type of variable annuity risk with volatility that is less than or equal to 10% according to policy position (i.e. in/out-of-the-money); as reported on Schedule VIII EBS, column (2). |
| 2           | Capital Factor                        | Column (2): Capital factors supplied by the BMA for each type of variable annuity risk with volatility that is less than or equal to 10% according to policy position.  |
| 3           | Guaranteed Values: Volatility 10%-15% | Column (3): Guaranteed values for each type of variable annuity risk with volatility that is more than 10% but less than 15% according to policy position; as reported on Schedule VIII EBS, column (3).                      |
| 4           | Capital Factor                        | Column (4): Capital factors supplied by the BMA for each type of variable annuity risk with volatility that is more than 10% but less than 15% according to policy position.  |
| 5           | Guaranteed Values: Volatility >15%    | Column (5): Guaranteed values for each type of variable annuity risk with volatility that is more than 15% according to policy position; as reported on Schedule VIII EBS, column (4).  |
| 6           | Capital Factor                        | Column (6): Capital factors supplied by the BMA for each type of variable annuity risk with volatility that is more than 15% according to policy position.  |

| Column Item |  | Description   |
|-------------|--|---|
| 7           | Net Amount at Risk: Volatility 0%-10%  | Column (7): Net amount at risk for each type of variable annuity risk with volatility that is less than or equal to 10% for in-the-money positions only; as reported on Schedule VIII EBS, column (5).  |
| 8           | Capital Factor                         | Column (8): Capital factors supplied by the BMA for each type of variable annuity risk with volatility that is less than or equal to 10% for in-the-money positions only.   |
| 9           | Net Amount at Risk: Volatility 10%-15% | Column (9): Net amount at risk for each type of variable annuity risk with volatility that is more than 10% but less than 15% for in-the-money positions only; as reported on Schedule VIII EBS, column (6).  |
| 10          | Capital Factor                         | Column (10): Capital factors supplied by the BMA for each type of variable annuity risk with volatility that is more than 10% but less than 15% for in-the-money positions only.  |
| 11          | Net Amount at Risk: Volatility >15%    | Column (11): Net amount at risk for each type of variable annuity risk with volatility that is more than 15% for in-the-money positions only; as reported on Schedule VIII EBS, column (7).   |
| 12          | Capital Factor                         | Column (12): Capital factors supplied by the BMA for each type of variable annuity risk with volatility that is more than 15% for in-the-money positions only.  |
| 13          | Capital Requirements                   | Column (13): Calculated using the maximum of [{column (1) x column (2) + column (3) x column (4) + column (5) x column (6)} or {column (7) x column (8) + column (9) x column (10) + column (11) x column (12)}]; less percentage of guaranteed minimum death benefit with multiple guarantees, as reported on Schedule VIII EBS, column (4), line 32, applied to GMDB; less total BSCR-adjusted reserves for variable annuities. |

b) Internal Model-Based Capital Requirement

| Column Item |                 | Description   |
|-------------|-----------------|---|
| 1           | Without Hedging | Column (1): The total capital requirement for variable annuity risk based on internal model results without taking into account hedging; as reported on Schedule VIIIA EBS, column (6), line 1. |
| 2           | With Hedging    | Column (2): The total capital requirement for variable annuity risk based on internal model results taking into account hedging; as reported on Schedule VIIIA EBS, column (7), line 1.         |

## **D18. CAPITAL ADJUSTMENT**

### ***Background***

- D18.1 The capital adjustment charge represents the capital requirements for the following:
- a) Regulated non-insurance financial operating entities.
  - b) Unregulated entities where the parent exercises control
- D18.2 The sum of items (1) and (2) shall comprise the capital adjustment, which is added to the Group BSCR (after covariance adjustment) to arrive at the Group BSCR. The Group BSCR will be used to determine a group's ECR for the relevant year, as reported in the Summary section of the Group BSCR model.

### ***Capital adjustment***

- D18.3 The capital adjustment charge calculation can be summarised by the following formula:

$C_{adj} = (1) + (2)$  where:

- (1) = Regulatory capital requirement for regulated non-insurance financial operating entities; and
- (2) = Capital requirement for unregulated entities where the parent company exercises control.

### ***Items***

- D18.4 Regulatory capital requirement for regulated non-insurance financial operating entities – This capital adjustment charge shall be determined in accordance with Schedule XI(A), where this amount shall be equal to the sum of the group's proportionate share of each registered entity's regulatory capital in accordance with the applicable solvency rules of the jurisdiction where the entity was licenced or registered; and
- D18.5 Capital requirement for unregulated entities where the parent company exercises control – This capital adjustment charge shall be determined in accordance with Schedule XI(B), where this amount shall be equal to the sum of the capital requirement based on the capital charges applied to each unregulated entity's net assets, as follows:
- 1) 0% to unregulated entities that conduct ancillary services to members of the group;
  - 2) 15% to unregulated non-financial operating entities; and
  - 3) 50% to unregulated financial operating entities.

## D19. FEATURES – BSCR ON NEW BASIS

### *Background*

- D19.1 The Summary exhibit has seven key features:
- Required Capital and Surplus,
  - Available Statutory Capital and Surplus,
  - MSM,
  - ECR and TCL,
  - Ratios,
  - Solvency Capital Distribution chart, and
  - Regulatory Action Level graph.

Each feature is described below. At the bottom of the page the BSCR formula for combining the various risk capital charges is displayed. The data input into the Summary exhibit are:

- The BMA-approved Capital Contribution of the insurance group;
- Initial best estimate liabilities held for future discretionary benefits (FDB (if any));
- The effective (federal) tax rate of the insurance group; and
- The amount of loss carryback.

### *Required Capital and Surplus*

- D19.2 The BSCR is determined on an economic balance sheet (EBS) valuation basis according to the following formula:

$$BSCR_{Corr} = \text{Basic BSCR} + C_{operational} + C_{regulatoryadj} + C_{otheradj} + C_{AdjTP}$$

Where:

- Basic BSCR = basic BSCR risk module charge;  
 $C_{operational}$  = operational risk charge;  
 $C_{regulatoryadj}$  = regulatory capital requirement for regulated non-insurance financial operating entities;  
 $C_{AdjTP}$  = adjustment for the loss absorbing capacity of technical provisions;  
 $C_{otheradj}$  = adjustment for the loss absorbing capital of deferred taxes;

- D19.3 The Basic BSCR risk module charge calculation is determined in accordance with the following formula—

$$\text{Basic BSCR} = \sqrt{\sum_{i,j} CorrBBSCR_{i,j} \times C_i \times C_j}$$

Where —

- $CorrBBSCR_{i,j}$  = the correlation factors of the Basic BSCR correlation matrix in accordance with Table A;

|                 |   |   |
|-----------------|---|---|
| $i, j$          | = | the sum of the different terms should cover all possible combinations of $i$ and $j$ ;  |
| $C_i$ and $C_j$ | = | risk module charge $i$ and risk module charge $j$ which are replaced by the following:<br>$C_{Market}$ , $C_{P\&C}$ , $C_{LT}$ , $C_{Credit}$ ; |
| $C_{Market}$    | = | capital charge in respect to market risk;   |
| $C_{P\&C}$      | = | capital charge in respect to P&C risk;  |
| $C_{LT}$        | = | capital charge in respect to Long-Term risk; and  |
| $C_{Credit}$    | = | capital charge in respect to credit risk.   |

**Table A – Basic BSCR Correlation Matrix**

| $CorrBBSCR_{i,j}$ | $C_{Market}$ | $C_{Credit}$ | $C_{P\&C}$ | $C_{LT}$ |
|-------------------|--------------|--------------|------------|----------|
| $C_{Market}$      | 1            |              |            |          |
| $C_{Credit}$      | 0.25         | 1            |            |          |
| $C_{P\&C}$        | 0.125        | 0.50         | 1          |          |
| $C_{LT}$          | 0.125        | 0.25         | 0.00       | 1        |

D19.4 The market risk module charge calculation is determined in accordance with the following formula—

$$C_{Market} = \sqrt{\sum_{i,j} CorrMarket_{i,j} \times C_i \times C_j}$$

Where —

|                     |   |  |
|---------------------|---|--|
| $CorrMarket_{i,j}$  | = | the correlation factors of the market risk module in accordance with Table B; where $A = 0$ if interest rate and liquidity risk charge is calculated using the shock-based approach and the risk charge is being determined based on the interest rate up shock, and $A = 0.25$ otherwise; |
| $i, j$              | = | the sum of the different terms should cover all possible combinations of $i$ and $j$ ;   |
| $C_i$ and $C_j$     | = | risk charge $i$ and risk charge $j$ which are replaced by the following: $C_{fixedIncome}$ , $C_{equity}$ , $C_{interest}$ , $C_{currency}$ , $C_{concentration}$ ;  |
| $C_{fixedIncome}$   | = | capital charge in respect to fixed income investment risk;   |
| $C_{equity}$        | = | capital charge in respect to equity investment risk;   |
| $C_{interest}$      | = | capital charge in respect to interest rate and liquidity risk;   |
| $C_{currency}$      | = | capital charge in respect to currency risk; and  |
| $C_{concentration}$ | = | capital charge in respect to concentration risk.   |

**Table B – Market Risk Module Correlation Matrix**

| $CorrMarket_{i,j}$ | $C_{fixedIncome}$ | $C_{equity}$ | $C_{interest}$ | $C_{currency}$ | $C_{concentration}$ |
|--------------------|-------------------|--------------|----------------|----------------|---------------------|
|--------------------|-------------------|--------------|----------------|----------------|---------------------|



|                     |      |      |      |      |   |
|---------------------|------|------|------|------|---|
| $C_{fixedIncome}$   | 1    |      |      |      |   |
| $C_{equity}$        | 0.50 | 1    |      |      |   |
| $C_{interest}$      | A    | A    | 1    |      |   |
| $C_{currency}$      | 0.25 | 0.25 | 0.25 | 1    |   |
| $C_{concentration}$ | 0.00 | 0.00 | 0.00 | 0.00 | 1 |

D19.5 The P&C risk module charge calculation is determined in accordance with the following formula—

$$C_{P\&C} = \sqrt{\sum_{i,j} CorrP\&C_{i,j} \times C_i \times C_j}$$

Where —

$CorrP\&C_{i,j}$  = the correlation factors of the P&C risk module correlation matrix in accordance with Table C;

$i,j$  = the sum of the different terms should cover all possible combinations of  $i$  and  $j$ ;

$C_i$  and  $C_j$  = risk charge  $i$  and risk charge  $j$  which are replaced by the following:

$C_{premium}$ ,  $C_{reserve}$ ,  $C_{catastrophe}$ ;

$C_{premium}$  = capital charge in respect to premium risk;

$C_{reserve}$  = capital charge in respect to reserve risk; and

$C_{catastrophe}$  = capital charge in respect to catastrophe risk;

**Table C - P&C Risk Module Correlation Matrix**

| $CorrP\&C_{i,j}$  | $C_{premium}$ | $C_{reserve}$ | $C_{catastrophe}$ |
|-------------------|---------------|---------------|-------------------|
| $C_{premium}$     | 1             |               |                   |
| $C_{reserve}$     | 0.25          | 1             |                   |
| $C_{catastrophe}$ | 0.125         | 0.00          | 1                 |

D19.6 The Long-Term risk module charge calculation is determined in accordance with the following formula—

$$C_{LT} = \sqrt{\sum_{i,j} CorrLT_{i,j} \times C_i \times C_j}$$

Where—

$CorrLT_{i,j}$  = the correlation factors of the Long-Term risk module correlation matrix in accordance with Table C;

$i,j$  = the sum of the different terms should cover all possible combinations of  $i$  and  $j$ ;

$C_i$  and  $C_j$  = risk charge  $i$  and risk charge  $j$  which are replaced by the following:

$C_{LTmortality}$ ,  $C_{LTstoploss}$ ,  $C_{LTtrider}$ ,  $C_{LTmorbidity}$ ,  $C_{LTlongevity}$ ,

$C_{LTvariableAnnuity}$ ,  $C_{LTotherrisk}$ ;

$C_{LTmortality}$  = capital charge in respect to mortality risk;

$C_{LTstoploss}$  = capital charge in respect to stop loss risk;  
 $C_{LTmorbidity}$  = capital charge in respect to morbidity risk;  
 $C_{LTlongevity}$  = capital charge in respect to longevity risk;  
 $C_{LTVariableAnnuity}$  = capital charge in respect to variability annuity risk;  
 $C_{LTotherrisk}$  = capital charge in respect to other Long-Term insurance risk;

**Table D – Long-Term Risk Module Correlation Matrix**

| $CorrLT_{i,j}$          | $C_{LTmortality}$ | $C_{LTstoploss}$ | $C_{LTTrider}$ | $C_{LTmorbidity}$ | $C_{LTlongevity}$ | $C_{LTVariable}$ | $C_{LTotherrisk}$ |
|-------------------------|-------------------|------------------|----------------|-------------------|-------------------|------------------|-------------------|
| $C_{LTmortality}$       | 1                 |                  |                |                   |                   |                  |                   |
| $C_{LTstoploss}$        | 0.75              | 1                |                |                   |                   |                  |                   |
| $C_{LTTrider}$          | 0.75              | 0.75             | 1              |                   |                   |                  |                   |
| $C_{LTmorbidity}$       | 0.25              | 0.00             | 0.00           | 1                 |                   |                  |                   |
| $C_{LTlongevity}$       | -0.50             | -0.50            | -0.50          | 0.00              | 1                 |                  |                   |
| $C_{LTVariableAnnuity}$ | 0.00              | 0.00             | 0.00           | 0.00              | 0.00              | 1                |                   |
| $C_{LTotherrisk}$       | 0.125             | 0.25             | 0.25           | 0.25              | 0.25              | 0.25             | 1                 |

D19.7 This formula utilises the correlation matrix to aggregate the various risks under the assumption that the risks are not independent with one another, and therefore, provides a linear diversification benefit when combining the risk charges. The end result is the

| $CorrLT_{i,j}$          | $C_{LTmortality}$ | $C_{LTstoploss}$ | $C_{LTTrider}$ | $C_{LTmorbidity}$ | $C_{LTlongevity}$ | $C_{LTVariableAnnuity}$ | $C_{LTotherrisk}$ |
|-------------------------|-------------------|------------------|----------------|-------------------|-------------------|-------------------------|-------------------|
| $C_{LTmortality}$       | 1                 |                  |                |                   |                   |                         |                   |
| $C_{LTstoploss}$        | 0.75              | 1                |                |                   |                   |                         |                   |
| $C_{LTTrider}$          | 0.75              | 0.75             | 1              |                   |                   |                         |                   |
| $C_{LTmorbidity}$       | 0.25              | 0.00             | 0.00           | 1                 |                   |                         |                   |
| $C_{LTlongevity}$       | -0.50             | -0.50            | -0.50          | 0.00              | 1                 |                         |                   |
| $C_{LTVariableAnnuity}$ | 0.00              | 0.00             | 0.00           | 0.00              | 0.00              | 1                       |                   |
| $C_{LTotherrisk}$       | 0.125             | 0.25             | 0.25           | 0.25              | 0.25              | 0.25                    | 1                 |

BSCR (after correlation adjustment).

D19.8 The operational risk capital charge is the operational risk charge multiplied by the sum of (gross) BSCR (after correlation adjustment) and the adjustment for loss-absorbing capacity of technical provisions calculated according to paragraph D36.5. The risk charge ranges from 1% to 20% based on each insurance group's self-assessment of the CIRA framework.

D19.9 Capital add-ons/reductions may be assessed where the BMA believes that an insurance group's risk profile deviates significantly from the risk assumptions underlying the

ECR or from the insurance group's assessment of its risk management policies and practices. These include, but are not limited to, items such as: provisions for reserve deficiencies, significant growth in premiums, and quality of risk management surrounding operational risk.

- D19.10 The BSCR is equal to the sum of the BSCR (after correlation adjustment), operational risk capital charge, capital add-ons/reductions (if assessed), adjustment for loss-absorbing capacity of technical provisions and adjustment for loss-absorbing capacity of deferred taxes.

#### ***Available Statutory Economic Capital and Surplus***

- D19.11 Available Statutory Economic Capital and Surplus is defined as the Total Statutory Economic Capital and Surplus of the insurance group, including subsequent Capital Contribution less Capital Add-ons/Reductions (BMA assessment). All capital contributions are to be approved by the BMA, and all capital add-ons/reductions are determined at the discretion of the BMA.

- D19.12 The insurance group's available statutory economic capital and surplus is determined for purposes of calculating the BSCR and ECR ratios.

#### ***Minimum Margin of Solvency***

- D19.13 The MSM is prescribed by the Insurance Account Rules 2016 ('IAR').

#### ***ECR and TCL***

- D19.14 The ECR is the higher of the MSM and the BSCR/approved internal capital model.

- D19.15 The TCL is equal to 120% of the ECR.

#### ***Ratios***

- D19.16 The BSCR Ratio is the ratio of the Available Statutory Economic Capital and Surplus to the BSCR.

- D19.17 The ECR Ratio is the ratio of the Available Statutory Economic Capital and Surplus to the ECR.

#### ***Solvency Capital Distribution Chart***

- D19.18 The Solvency Capital Distribution chart displays the relative contribution of each charge to the BSCR, prior to the correlation adjustment.

#### ***Regulatory Action Level Graph***

D19.19

The Regulatory Action Level graph displays the insurance group's Available Statutory Capital and Surplus position relative to the BMA's regulatory action guidelines, where Regulatory Action Level 1 is equal to the insurance group's ECR and Regulatory Action Level 2 is equal to the insurance group's TCL.

**Items**

- a) Required Capital and Surplus – The calculation of the Required Capital and Surplus is used for the purpose of determining the required capital level.

| Line Item |   | Description   |
|-----------|---|---|
| 1         | Fixed Income Investment Risk              | Based on current year fixed income investment risk (column (3), Row (g)).   |
| 2         | Equity Investment Risk                    | Based on current year equity investment risk (column (11), Row (f)).  |
| 3         | Interest Rate/Liquidity Risk              | Based on current year interest rate/liquidity risk (column (4)).  |
| 4         | Currency Risk                             | Based on current year currency risk (column (20)).  |
| 5         | Concentration Risk                        | Based on current year concentration risk (column (3), Row (i)).   |
| 6         | Premium Risk                              | Based on current year premium risk (column (11) Row (e)).   |
| 7         | Reserve Risk                              | Based on current year reserve risk (column (5) Row (c)).  |
| 8         | Credit Risk                               | Based on current year credit risk (column (3), Row (e)).  |
| 9         | Catastrophe Risk                          | Based on current year catastrophe risk.   |
| 10        | Insurance Risk – Mortality                | Based on current year insurance risk – mortality (column (6)).  |
| 11        | Insurance Risk – Stop Loss                | Based on current year insurance risk – stop loss (column (6)).  |
| 12        | Insurance Risk – Riders                   | Based on current year insurance risk – riders (column (6)).   |
| 13        | Insurance Risk – Morbidity and Disability | Based on current year insurance risk – morbidity and disability (column (6)).   |
| 14        | Insurance Risk – Longevity                | Based on current year insurance risk – longevity (column (6)).  |
| 15        | Variable Annuity Guarantee Risk           | Based on current year variable annuity guarantee risk (column (13), Row (33)) or Schedule VIIIA (column (7), line (1)). |
| 16        | Other Insurance Risk                      | Based on current year other insurance risk (column (3)).  |

| Line Item |   | Description  |
|-----------|---|--|
| 17        | Group BSCR (Prior to Correlation Adjustment)                        | Group BSCR (Prior to Correlation Adjustment) is the sum of the line items (1) to (16) above.   |
| 18        | Group BSCR (After Correlation Adjustment)                           | Group BSCR (After Correlation Adjustment) is the resulting amount after applying the correlation matrix on line item (17) to reflect a diversification benefit when aggregating all the risks described above.   |
| 19        | Operational Risk (%)  | Operational Risk (%) is the applicable operational risk charge % of 'BSCR After Correlation Adjustment' based on the overall score derived from the CIRA framework as prescribed by the BMA.   |
| 20        | Operational Risk Capital Charge (\$)                                | Operational Risk Capital Charge (\$) is the resulting amount when the operational risk (%), as prescribed in line item (19), is applied to the BSCR (After Correlation Adjustment).  |
| 21        | Regulated Non-Insurance Financial Operating Entities Capital Charge | Regulated Non-Insurance Financial Operating Entities Capital Charge is the resulting amount from the sum of the insurance group's proportionate share of each entity's regulatory capital requirement in accordance with the applicable solvency laws of the jurisdiction where the entity is licenced or registered.  |
| 22        | Capital Add-On/Reduction (BMA Assessment)                           | Capital Add-Ons/Reductions on the Required Capital and Surplus is the difference between the user required capital (using groups-specific capital factors) and the standard required capital (using the prescribed BSCR capital factors) determined under the company-specific parameters section, which is to be completed only with the prior approval of the BMA. |
| 23        | Adj. for Loss Absorbing Capacity of Technical Provision             | Adjustment for Loss Absorbing Capacity of Technical Provision is the resulting amount from the sum of Basic BSCR correlation before management actions less the sum of Basic BSCR correlation after management actions, capped at the initial base level of bonus reserves at EBS basis.   |
| 24        | Adj. for Loss Absorbing Capacity of Deferred Taxes                  | Adjustment for Loss Absorbing Capacity of Deferred Taxes reflects a potential tax benefit, in a loss scenario envisaged by the BSCR, resulting in current or future taxes payable, as determined according to paragraph D36.6.   |
| 25        | BSCR  | BSCR is the sum of the line items (18), (20) (21), (22), (23) and (24) above.  |

- b) Available Statutory Economic Capital and Surplus – The calculation of the Available Statutory Economic Capital and Surplus is used for the purpose of determining the appropriate regulatory action level.

| Line Item |   | Description   |
|-----------|---|---|
| 1         | Total Statutory Economic Capital and Surplus                    | Based on the current year economic balance sheet of the insurance group; as reported on Form 1EBS, line 40.   |
| 2         | Capital Contribution  | Capital Contributions must be approved by the BMA. Note that a Capital Contribution increases the Total Statutory Economic Capital and Surplus.                                 |
| 3         | Pre-Adjustment Available Statutory Economic Capital and Surplus | Pre-Adjustment Available Statutory Economic Capital and Surplus is the sum of lines (1) and (2) above.  |
| 4         | Capital Add-Ons/Reductions (BMA assessment)                     | Capital Add-ons / Reductions may be assessed where the BMA believes that an insurance group's risk profile deviates significantly from the risk assumptions underlying the ECR. |
| 5         | Available Statutory Economic Capital and Surplus                | Available Statutory Economic Capital and Surplus is the sum of lines (3) and (4) above.   |

## D20. FIXED INCOME INVESTMENT RISK

### Background

- D20.1 There are various categories of assets comprised of bonds, loans, and other miscellaneous investments that are used to determine the Fixed Income Investment Risk capital charge.
- D20.2 Where applicable, the amounts must reconcile to the appropriate line(s) of the group's Form 1EBS or to the schedules prescribed by or under the Rules for the relevant year.

### Fixed Income Investment Risk Capital Charge

- D20.3 The fixed income investment risk charge calculation can be summarised by the following formula:

$$C_{fixedIncome} = \sum_i \chi_i \times FI_{astclass_i} \times \mu_r + \text{Credit Derivatives}, \quad \text{where:}$$

|                                 |   |
|---------------------------------|---|
| $\chi_i$                        | = the BMA-supplied asset class capital charge factor for type of fixed income asset class $i$ ;   |
| $FI_{astclass_i}$               | = value of investment in fixed income asset class $i$ ;   |
| $\mu_r$                         | = additional diversification adjustment factor applied to cash and cash equivalent balances, or 1 for other asset classes;  |
| $CreditDerivatives$             | = the spread risk charge for credit derivatives calculated as per the following formula:<br>= greater of:<br>i) $CreditDerivatives_{ShockUp}$ ;<br>ii) $CreditDerivatives_{ShockDown}$ ; and<br>iii) 0.   |
| $CreditDerivatives_{ShockUp}$   | = the spread risk charge for credit derivatives resulting from an upward credit spread shock calculated as per the following formula:<br>$= \sum_i \left[ \left( LCD_i^{BShock} - LCD_i^{AShock}(\chi_i) \right) + \left( SCD_i^{BShock} - SCD_i^{AShock}(\chi_i) \right) \right]$  |
| $CreditDerivatives_{ShockDown}$ | = the spread risk charge for credit derivatives resulting from a downward credit spread shock calculated as per the following formula:<br>$= \sum_i \left[ \left( LCD_i^{BShock} - LCD_i^{AShock}(\chi_i) \right) + \left( SCD_i^{BShock} - SCD_i^{AShock}(\chi_i) \right) \right]$ |
| $LCD_i^{BShock}$                | = refers to the valuation of long exposures for credit derivatives before applying the instantaneous shock $\chi_i$ over the classes as set out below;  |
| $LCD_i^{AShock}(\chi_i)$        | = refers to the valuation of long exposures for credit derivatives after applying instantaneous shock $\chi_i$ over the classes as set out below  |
| $SCD_i^{BShock}$                | = refers to the valuation of short exposures for credit derivatives before  |

$$SCD_i^{AShock}(\chi_i)$$

applying the instantaneous shock  $\chi_i$  over the classes as set out below  
 = refers to the valuation of short exposures for credit derivatives after  
 applying the instantaneous shock  $\chi_i$  over the classes as set out below

### Items

#### a) Corporate and Sovereign Bonds

| Line Item |               | Statement Source – The Rules                       |
|-----------|---------------|--|
| 1         | BSCR rating 0 | Based on Schedule IIB-IIF EBS, line 1, column (1). |
| 2         | BSCR rating 1 | Based on Schedule IIB-IIF EBS, line 2, column (1). |
| 3         | BSCR rating 2 | Based on Schedule IIB-IIF EBS, line 3, column (1). |
| 4         | BSCR rating 3 | Based on Schedule IIB-IIF EBS, line 4, column (1). |
| 5         | BSCR rating 4 | Based on Schedule IIB-IIF EBS, line 5, column (1). |
| 6         | BSCR rating 5 | Based on Schedule IIB-IIF EBS, line 6, column (1). |
| 7         | BSCR rating 6 | Based on Schedule IIB-IIF EBS, line 7, column (1). |
| 8         | BSCR rating 7 | Based on Schedule IIB-IIF EBS, line 8, column (1). |
| 9         | BSCR rating 8 | Based on Schedule IIB-IIF EBS, line 9, column (1). |

#### b) Residential Mortgage-Backed Securities

| Line Item |               | Statement Source – The Rules                       |
|-----------|---------------|--|
| 1         | BSCR rating 1 | Based on Schedule IIB-IIF EBS, line 2, column (3). |
| 2         | BSCR rating 2 | Based on Schedule IIB-IIF EBS, line 3, column (3). |
| 3         | BSCR rating 3 | Based on Schedule IIB-IIF EBS, line 4, column (3). |
| 4         | BSCR rating 4 | Based on Schedule IIB-IIF EBS, line 5, column (3). |
| 5         | BSCR rating 5 | Based on Schedule IIB-IIF EBS, line 6, column (3). |
| 6         | BSCR rating 6 | Based on Schedule IIB-IIF EBS, line 7, column (3). |
| 7         | BSCR rating 7 | Based on Schedule IIB-IIF EBS, line 8, column (3). |
| 8         | BSCR rating 8 | Based on Schedule IIB-IIF EBS, line 9, column (3). |

#### c) Commercial Mortgage-Backed Securities/Asset-Backed Securities

| Line Item |               | Statement Source – The Rules                       |
|-----------|---------------|--|
| 1         | BSCR rating 1 | Based on Schedule IIB-IIF EBS, line 2, column (5). |
| 2         | BSCR rating 2 | Based on Schedule IIB-IIF EBS, line 3, column (5). |
| 3         | BSCR rating 3 | Based on Schedule IIB-IIF EBS, line 4, column (5). |
| 4         | BSCR rating 4 | Based on Schedule IIB-IIF EBS, line 5, column (5). |
| 5         | BSCR rating 5 | Based on Schedule IIB-IIF EBS, line 6, column (5). |
| 6         | BSCR rating 6 | Based on Schedule IIB-IIF EBS, line 7, column (5). |



| <b>Line Item</b> |               | <b>Statement Source – The Rules</b>                |
|------------------|---------------|--|
| 7                | BSCR rating 7 | Based on Schedule IIB-IIF EBS, line 8, column (5). |
| 8                | BSCR rating 8 | Based on Schedule IIB-IIF EBS, line 9, column (5). |

d) Bond Mutual Funds

| <b>Line Item</b> |               | <b>Statement Source – The Rules</b>                            |
|------------------|---------------|--|
| 1                | BSCR rating 0 | Based on Schedule IIB-IIF EBS and IIA EBS, line 1, column (7). |
| 2                | BSCR rating 1 | Based on Schedule IIB-IIF EBS and IIA EBS, line 2, column (7). |
| 3                | BSCR rating 2 | Based on Schedule IIB-IIF EBS and IIA EBS, line 3, column (7). |
| 4                | BSCR rating 3 | Based on Schedule IIB-IIF EBS and IIA EBS, line 4, column (7). |
| 5                | BSCR rating 4 | Based on Schedule IIB-IIF EBS and IIA EBS, line 5, column (7). |
| 6                | BSCR rating 5 | Based on Schedule IIB-IIF EBS and IIA EBS, line 6, column (7). |
| 7                | BSCR rating 6 | Based on Schedule IIB-IIF EBS and IIA EBS, line 7, column (7). |
| 8                | BSCR rating 7 | Based on Schedule IIB-IIF EBS and IIA EBS, line 8, column (7). |
| 9                | BSCR rating 8 | Based on Schedule IIB-IIF EBS and IIA EBS, line 9, column (7). |

e) Mortgage Loans

| <b>Line Item</b> |                                     | <b>Statement Source – The Rules</b>                 |
|------------------|-------------------------------------|---|
| 1                | Insured/guaranteed mortgages        | Based on Schedule IIB-IIF EBS, line 10, column (9). |
| 2                | Other commercial and farm mortgages | Based on Schedule IIB-IIF EBS, line 11, column (9). |
| 3                | Other residential mortgages         | Based on Schedule IIB-IIF EBS, line 12, column (9). |
| 4                | Mortgages not in good standing      | Based on Schedule IIB-IIF EBS, line 13, column (9). |

f) Other Fixed Income Investments

| <b>Line Item</b> |             | <b>Statement Source – The Rules or IAR</b> |
|------------------|-------------|--|
| 1                | Other loans | Based on Form 1EBS, line 8.                |

g) Cash and Cash Equivalents

| <b>Line Item</b> |               | <b>Statement Source – The Rules</b> |
|------------------|---------------|-------------------------------------|
| 1                | BSCR rating 0 | Based on Schedule XIXA, column (A). |
| 2                | BSCR rating 1 | Based on Schedule XIXA, column (A). |
| 3                | BSCR rating 2 | Based on Schedule XIXA, column (A). |
| 4                | BSCR rating 3 | Based on Schedule XIXA, column (A). |

| Line Item |                                  | Statement Source – The Rules        |
|-----------|----------------------------------|-------------------------------------|
| 5         | BSCR rating 4                    | Based on Schedule XIXA, column (A). |
| 6         | BSCR rating 5                    | Based on Schedule XIXA, column (A). |
| 7         | BSCR rating 6                    | Based on Schedule XIXA, column (A). |
| 8         | BSCR rating 7                    | Based on Schedule XIXA, column (A). |
| 9         | Less: Diversification Adjustment | Based on Schedule XIXA, column (A). |

***Instructions Affecting Fixed Income Investment Risk***

- (a) All assets comprising of bonds and debentures, loans, and other miscellaneous investments that are subject to capital charges within the fixed income investment risk charge shall be included;
- (b) All non-affiliated quoted and unquoted bonds and debentures shall be included in the fixed income investment charge;
- (c) All bonds and debentures, loans, and other miscellaneous investments shall include amounts reported for economic balance sheet reporting purposes and include fixed income risk exposures as determined by application of the ‘look-through’ approach calculated in accordance with the criteria prescribed in Section B7 for the following items:
  - (i) Collective investment vehicles and other investments packaged as funds, including related undertakings used as investment vehicles;
  - (ii) Segregated accounts assets and liabilities;
  - (iii) Deposit asset and liabilities;
  - (iv) Assets and liabilities held by ceding insurers or under retrocession;
  - (v) Other sundry assets and liabilities; and
  - (vi) Derivatives.
- (d) The capital requirements relating to cash and cash equivalents shall be reduced by a diversification adjustment of up to a maximum of 40%;
- (e) The diversification adjustment in paragraph (d) is determined as 40% multiplied by 1 minus the ratio of the largest cash and cash equivalent balance held with a single counterparty to the total of all cash and cash equivalent balance; and
- (f) Spread Risk Shocks for Credit Derivatives.

| Line Item   |               | Statement Source – The Rules                  |  |
|-------------|---------------|---|--|
| Spread Up   |               |   |  |
|             |               | Long Exposures                                | Short Exposures                                |
| 1           | BSCR rating 0 | Based on Schedules IIB-IIF column (1) line 38 | Based on Schedules IIB-IIF column (3), line 38 |
| 2           | BSCR rating 1 | Based on Schedules IIB-IIF column (1) line 39 | Based on Schedules IIB-IIF column (3), line 39 |
| 3           | BSCR rating 2 | Based on Schedules IIB-IIF column (1) line 40 | Based on Schedules IIB-IIF column (3), line 40 |
| 4           | BSCR rating 3 | Based on Schedules IIB-IIF column (1) line 41 | Based on Schedules IIB-IIF column (3), line 41 |
| 5           | BSCR rating 4 | Based on Schedules IIB-IIF column (1) line 42 | Based on Schedules IIB-IIF column (3), line 42 |
| 6           | BSCR rating 5 | Based on Schedules IIB-IIF column (1) line 43 | Based on Schedules IIB-IIF column (3), line 43 |
| 7           | BSCR rating 6 | Based on Schedules IIB-IIF column (1) line 44 | Based on Schedules IIB-IIF column (3), line 44 |
| 8           | BSCR rating 7 | Based on Schedules IIB-IIF column (1) line 45 | Based on Schedules IIB-IIF column (3), line 45 |
| 9           | BSCR rating 8 | Based on Schedules IIB-IIF column (1) line 46 | Based on Schedules IIB-IIF column (3), line 46 |
| Spread Down |               |   |  |
|             |               | Long Exposures                                | Short Exposures                                |
| 10          | BSCR rating 0 | Based on Schedules IIB-IIF column (6) line 38 | Based on Schedules IIB-IIF column (8), line 38 |
| 11          | BSCR rating 1 | Based on Schedules IIB-IIF column (6) line 39 | Based on Schedules IIB-IIF column (8), line 39 |
| 12          | BSCR rating 2 | Based on Schedules IIB-IIF column (6) line 40 | Based on Schedules IIB-IIF column (8), line 40 |
| 13          | BSCR rating 3 | Based on Schedules IIB-IIF column (6) line 41 | Based on Schedules IIB-IIF column (8), line 41 |
| 14          | BSCR rating 4 | Based on Schedules IIB-IIF column (6) line 42 | Based on Schedules IIB-IIF column (8), line 42 |
| 15          | BSCR rating 5 | Based on Schedules IIB-IIF column (6) line 43 | Based on Schedules IIB-IIF column (8), line 43 |
| 16          | BSCR rating 6 | Based on Schedules IIB-IIF column (6) line 44 | Based on Schedules IIB-IIF column (8), line 44 |
| 17          | BSCR rating 7 | Based on Schedules IIB-IIF column (6) line 45 | Based on Schedules IIB-IIF column (8), line 45 |
| 18          | BSCR rating 8 | Based on Schedules IIB-IIF column (6) line 46 | Based on Schedules IIB-IIF column (8), line 46 |

## D21. EQUITY INVESTMENT RISK

### Background

- D21.1 There are various categories of equity investments comprising common stocks, preferred stocks, real estate and other miscellaneous investments that are used to determine the Equity Investment Risk capital charge. All non-affiliated stocks held by the insurance group should be reported, including both quoted and unquoted issues.

### Equity Investment Risk Capital Charge

- D21.2 The equity investment risk charge calculation can be summarised by the following formula:

$$C_{\text{equity}} = \sqrt{C_{\text{equity}}^{\text{basic}} + C_{\text{equity}}^{\text{grandfathered}}}$$

, where

$$C_{\text{equity}} = \sqrt{\sum_{i,j} \text{CorrEq}_{i,j} \times C_i \times C_j}$$

$C_{\text{equity}}^{\text{grandfathered}}$  = the equity risk charge calculated according to section D3 for equity exposures that are grandfathered according to paragraph D21A below;

$\text{CorrEq}_{i,j}$  = the correlation factors of the equity risk correlation matrix in accordance with Table 2A;

$i,j$  = the sum of the different terms should cover all possible combinations of correlation  $i$  and  $j$ ;

$C_i$  and  $C_j$  = risk charge  $i$  and risk charge  $j$  which are replaced by the following:  
 $C_{\text{Type1}}$ ,  $C_{\text{Type2}}$ ,  $C_{\text{Type3}}$ ,  $C_{\text{Type4}}$ ;

$C_{\text{Type1}}$  = Type1 equity risk charge as calculated over the classes set out below;

$C_{\text{Type2}}$  = Type2 equity risk charge as calculated over the classes set out below;

$C_{\text{Type3}}$  = Type3 equity risk charge as calculated over the classes set out below; and

$C_{\text{Type4}}$  = Type4 equity risk charge as calculated over the classes set out below;

**Table 2A – Equity Risk Charge Correlation Matrix**

| Equity Corr Matrix | $C_{\text{Type1}}$ | $C_{\text{Type2}}$ | $C_{\text{Type3}}$ | $C_{\text{Type4}}$ |
|--------------------|--------------------|--------------------|--------------------|--------------------|
| $C_{\text{Type1}}$ | 1.00               |                    |                    |                    |
| $C_{\text{Type2}}$ | 0.75               | 1.00               |                    |                    |
| $C_{\text{Type3}}$ | 0.75               | 0.75               | 1.00               |                    |
| $C_{\text{Type4}}$ | 0.50               | 0.50               | 0.50               | 1.00               |

- D21.3 Type1, Type2 Type3 and Type4 equity risk charges calculation shall be determined in accordance with the following formulas—

$$C_{\text{Type1}} = \max \left\{ \sum_{i \in \text{Type1}} \left[ \max(L\text{Assets}_i^{\text{BShock}} - L\text{Assets}_i^{\text{AShock}}(\chi_i), 0) + (SQ\text{Assets}_i^{\text{BShock}} - SQ\text{Assets}_i^{\text{AShock}}(\chi_i)) + \dots \right] + \max(SNQ\text{Assets}_i^{\text{BShock}} - SNQ\text{Assets}_i^{\text{AShock}}(\chi_i), 0) - (BELiabilities_i^{\text{BShock}} - BELiabilities_i^{\text{AShock}}(\chi_i)) \right], 0 \right\}$$

$$C_{Type2} = \max \left\{ \sum_{i \in Type2} \left[ \max(LAssets_i^{BShock} - LAssets_i^{AShock}(\chi_i), 0) + (SQAssets_i^{BShock} - SQAssets_i^{AShock}(\chi_i)) + \dots \right] + \max(SNQAssets_i^{BShock} - SNQAssets_i^{AShock}(\chi_i), 0) - (BELiabilities_i^{BShock} - BELiabilities_i^{AShock}(\chi_i)) \right\}, 0 \}$$

$$C_{Type3} = \max \left\{ \sum_{i \in Type3} \left[ \max(LAssets_i^{BShock} - LAssets_i^{AShock}(\chi_i), 0) + (SQAssets_i^{BShock} - SQAssets_i^{AShock}(\chi_i)) + \dots \right] + \max(SNQAssets_i^{BShock} - SNQAssets_i^{AShock}(\chi_i), 0) - (BELiabilities_i^{BShock} - BELiabilities_i^{AShock}(\chi_i)) \right\}, 0 \}$$

$$C_{Type4} = \max \left\{ \sum_{i \in Type4} \left[ \max(LAssets_i^{BShock} - LAssets_i^{AShock}(\chi_i), 0) + (SQAssets_i^{BShock} - SQAssets_i^{AShock}(\chi_i)) + \dots \right] + \max(SNQAssets_i^{BShock} - SNQAssets_i^{AShock}(\chi_i), 0) - (BELiabilities_i^{BShock} - BELiabilities_i^{AShock}(\chi_i)) \right\}, 0 \}$$

Where—

|                          |   |
|--------------------------|---|
| $\chi_i$                 | = the instantaneous shocks prescribed in Table 2B for each type of equity class $i$ ;   |
| $LAssets^{BShock}$       | = refers to the valuation of long asset exposures before applying shock;  |
| $LAssets^{AShock}$       | = refers to the valuation of long asset exposures after applying shock;   |
| $SQAssets_{BShock}$      | = refers to the valuation of short exposures for qualifying assets that are held for risk-mitigating purposes as determined in accordance with the criteria prescribed in section B5 before applying shock; |
| $SQAssets_{AShock}$      | = refers to the valuation of short exposures for qualifying assets that are held for risk-mitigating purposes as determined in accordance with the criteria prescribed in section B5 after applying shock;  |
| $SNQAssets_{BShock}$     | = refers to the valuation of short exposures for assets that do not qualify for risk-mitigating purposes as determined in accordance with the criteria prescribed in section B5 before applying shock;      |
| $SNQAssets_{AShock}$     | = refers to the valuation of short exposures for assets that do not qualify for risk-mitigating purposes as determined in accordance with the criteria prescribed in Section B5 after applying shock;       |
| $BELiabilities^{BShock}$ | = refers to the best estimate of insurance liabilities and other liabilities before applying shock; and   |
| $BELiabilities^{AShock}$ | = refers to the best estimate of insurance liabilities and other liabilities after applying shock.  |

*Items*

a) Type 1 Equity Holdings

| Line Item |   | Statement Source – The Rules                            |   |   |   |
|-----------|---|---|---|---|---|
|           |   | Assets  |   |   | Liabilities   |
|           |   | Long Exposures  | Short Exposures   |   |   |
|           |   |   | Qualifying as Assets held for risk mitigation purposes  | Qualifying as Assets held for risk mitigation purposes  | Without Management Actions                              |
| 1         | Strategic Holdings – Listed                   | Based on Sch. IIB-IIF Col. (1) line 15 Col. (2) line 15 | Based on Sch. IIB-IIF Col. (3) line 15 Col. (4) line 15 | Based on Sch. IIB-IIF Col. (5) line 15 Col. (6) line 15 | Based on Sch. IIB-IIF Col. (7) line 15 Col. (8) line 15 |
| 2         | Duration Based                                | Based on Sch. IIB-IIF Col. (1) line 16 Col. (2) line 16 | Based on Sch. IIB-IIF Col. (3) line 16 Col. (4) line 16 | Based on Sch. IIB-IIF Col. (5) line 16 Col. (6) line 16 | Based on Sch. IIB-IIF Col. (7) line 16 Col. (8) line 16 |
| 3         | Listed Equity Securities in Developed Markets | Based on Sch. IIB-IIF Col. (1) line 17 Col. (2) line 17 | Based on Sch. IIB-IIF Col. (3) line 17 Col. (4) line 17 | Based on Sch. IIB-IIF Col. (5) line 17 Col. (6) line 17 | Based on Sch. IIB-IIF Col. (7) line 17 Col. (8) line 17 |
| 4         | Preferred Stocks Rating 1                     | Based on Sch. IIB-IIF Col. (1) line 18 Col. (2) line 18 | Based on Sch. IIB-IIF Col. (3) line 18 Col. (4) line 18 | Based on Sch. IIB-IIF Col. (5) line 18 Col. (6) line 18 | Based on Sch. IIB-IIF Col. (7) line 18 Col. (8) line 18 |
| 5         | Preferred Stocks Rating 2                     | Based on Sch. IIB-IIF Col. (1) line 19 Col. (2) line 19 | Based on Sch. IIB-IIF Col. (3) line 19 Col. (4) line 19 | Based on Sch. IIB-IIF Col. (5) line 19 Col. (6) line 19 | Based on Sch. IIB-IIF Col. (7) line 19 Col. (8) line 19 |
| 6         | Preferred Stocks Rating 3                     | Based on Sch. IIB-IIF Col. (1) line 20 Col. (2) line 20 | Based on Sch. IIB-IIF Col. (3) line 20 Col. (4) line 20 | Based on Sch. IIB-IIF Col. (5) line 20 Col. (6) line 20 | Based on Sch. IIB-IIF Col. (7) line 20 Col. (8) line 20 |
| 7         | Preferred Stocks Rating 4                     | Based on Sch. IIB-IIF Col. (1) line 21 Col. (2) line 21 | Based on Sch. IIB-IIF Col. (3) line 21 Col. (4) line 21 | Based on Sch. IIB-IIF Col. (5) line 21 Col. (6) line 21 | Based on Sch. IIB-IIF Col. (7) line 21 Col. (8) line 21 |
| 8         | Preferred Stocks Rating 5                     | Based on Sch. IIB-IIF Col. (1) line 22 Col. (2) line 22 | Based on Sch. IIB-IIF Col. (3) line 22 Col. (4) line 22 | Based on Sch. IIB-IIF Col. (5) line 22 Col. (6) line 22 | Based on Sch. IIB-IIF Col. (7) line 22 Col. (8) line 22 |
| 9         | Preferred Stocks Rating 6                     | Based on Sch. IIB-IIF Col. (1) line 23 Col. (2) line 23 | Based on Sch. IIB-IIF Col. (3) line 23 Col. (4) line 23 | Based on Sch. IIB-IIF Col. (5) line 23 Col. (6) line 23 | Based on Sch. IIB-IIF Col. (7) line 23 Col. (8) line 23 |
| 10        | Preferred Stocks Rating 7                     | Based on Sch. IIB-IIF Col. (1) line 24 Col. (2) line 24 | Based on Sch. IIB-IIF Col. (3) line 24 Col. (4) line 24 | Based on Sch. IIB-IIF Col. (5) line 24 Col. (6) line 24 | Based on Sch. IIB-IIF Col. (7) line 24 Col. (8) line 24 |
| 11        | Preferred Stocks Rating 8                     | Based on Sch. IIB-IIF Col. (1) line 25 Col. (2) line 25 | Based on Sch. IIB-IIF Col. (3) line 25 Col. (4) line 25 | Based on Sch. IIB-IIF Col. (5) line 25 Col. (6) line 25 | Based on Sch. IIB-IIF Col. (7) line 25 Col. (8) line 25 |
| 12        | Equity Derivatives on Type 1 Equities         | Based on Sch. IIB-IIF Col. (1) line 26 Col. (2) line 26 | Based on Sch. IIB-IIF Col. (3) line 26 Col. (4) line 26 | Based on Sch. IIB-IIF Col. (5) line 26 Col. (6) line 26 | Based on Sch. IIB-IIF Col. (7) line 26 Col. (8) line 26 |

b) Type 2 Equity Holdings

| Line Item |  | Statement Source – The Rules                            |   |   |   |
|-----------|--|---|---|---|---|
|           |  | Assets  |   |   | Liabilities   |
|           |  | Long Exposures  | Short Exposures   |   |   |
|           |  |   | Qualifying as Assets held for risk mitigation purposes  | Qualifying as Assets held for risk mitigation purposes  | Without Management Actions                              |
| 16        | Strategic Holdings – Unlisted            | Based on Sch. IIB-IIF Col. (1) line 27 Col. (2) line 27 | Based on Sch. IIB-IIF Col. (3) line 27 Col. (4) line 27 | Based on Sch. IIB-IIF Col. (5) line 27 Col. (6) line 27 | Based on Sch. IIB-IIF Col. (7) line 27 Col. (8) line 27 |
| 17        | Other Equities                           | Based on Sch. IIB-IIF Col. (1) line 28 Col. (2) line 28 | Based on Sch. IIB-IIF Col. (3) line 28 Col. (4) line 28 | Based on Sch. IIB-IIF Col. (5) line 28 Col. (6) line 28 | Based on Sch. IIB-IIF Col. (7) line 28 Col. (8) line 28 |
| 18        | Letters of Credit                        | Based on Sch. IIB-IIF Col. (1) line 29 Col. (2) line 29 | Based on Sch. IIB-IIF Col. (3) line 29 Col. (4) line 29 | Based on Sch. IIB-IIF Col. (5) line 29 Col. (6) line 29 | Based on Sch. IIB-IIF Col. (7) line 29 Col. (8) line 29 |
| 19        | Intangible Assets                        | Based on Sch. IIB-IIF Col. (1) line 30 Col. (2) line 30 | Based on Sch. IIB-IIF Col. (3) line 30 Col. (4) line 30 | Based on Sch. IIB-IIF Col. (5) line 30 Col. (6) line 30 | Based on Sch. IIB-IIF Col. (7) line 30 Col. (8) line 30 |
| 20        | Pension Benefit Surplus                  | Based on Sch. IIB-IIF Col. (1) line 31 Col. (2) line 31 | Based on Sch. IIB-IIF Col. (3) line 31 Col. (4) line 31 | Based on Sch. IIB-IIF Col. (5) line 31 Col. (6) line 31 | Based on Sch. IIB-IIF Col. (7) line 31 Col. (8) line 31 |
| 21        | Equity Derivatives on Type 2 Investments | Based on Sch. IIB-IIF Col. (1) line 32 Col. (2) line 32 | Based on Sch. IIB-IIF Col. (3) line 32 Col. (4) line 32 | Based on Sch. IIB-IIF Col. (5) line 32 Col. (6) line 32 | Based on Sch. IIB-IIF Col. (7) line 32 Col. (8) line 32 |

c) Type 3 Equity Holdings

| Line Item |                               | Statement Source – The Rules                            |   |   |   |
|-----------|-------------------------------|---|---|---|---|
|           | Assets                        |   |   |   | Liabilities   |
|           | Long Exposures                | Short Exposures   |   |   |   |
|           |                               |   | Qualifying as Assets held for risk mitigation purposes  | Qualifying as Assets held for risk mitigation purposes  | Without Management Actions                              |
| 22        | Infrastructure                | Based on Sch. IIB-IIF Col. (1) line 33 Col. (2) line 33 | Based on Sch. IIB-IIF Col. (3) line 33 Col. (4) line 33 | Based on Sch. IIB-IIF Col. (5) line 33 Col. (6) line 33 | Based on Sch. IIB-IIF Col. (7) line 33 Col. (8) line 33 |
| 23        | Derivatives on Infrastructure | Based on Sch. IIB-IIF Col. (1) line 34 Col. (2) line 34 | Based on Sch. IIB-IIF Col. (3) line 34 Col. (4) line 34 | Based on Sch. IIB-IIF Col. (5) line 34 Col. (6) line 34 | Based on Sch. IIB-IIF Col. (7) line 34 Col. (8) line 34 |

d) Type 4 Equity Holdings

| Line Item |                      | Statement Source – The Rules                            |   |   |   |
|-----------|----------------------|---|---|---|---|
|           | Assets               |   |   |   | Liabilities   |
|           |                      | Long Exposures  | Short Exposures   |   |   |
|           |                      |   | Qualifying as Assets held for risk mitigation purposes  | Qualifying as Assets held for risk mitigation purposes  | Without Management Actions                              |
| 24        | Equity Real Estate 1 | Based on Sch. IIB-IIF Col. (1) line 35 Col. (2) line 35 | Based on Sch. IIB-IIF Col. (3) line 35 Col. (4) line 35 | Based on Sch. IIB-IIF Col. (5) line 35 Col. (6) line 35 | Based on Sch. IIB-IIF Col. (7) line 35 Col. (8) line 35 |
| 25        | Equity Real Estate 2 | Based on Sch. IIB-IIF Col. (1) line 36 Col. (2) line 36 | Based on Sch. IIB-IIF Col. (3) line 36 Col. (4) line 36 | Based on Sch. IIB-IIF Col. (5) line 36 Col. (6) line 36 | Based on Sch. IIB-IIF Col. (7) line 36 Col. (8) line 36 |



***Instructions Affecting Equity Investment Risk***

- a) All assets (except regulated non-insurance financial operating entities) and liabilities (except the risk margin) whose value is subject to equity risk shocks are to be reported on a basis consistent with that used for the purposes of economic balance sheet reporting. Such assets and liabilities shall include equity risk exposures determined by application of the ‘look-through’ approach calculated in accordance with criteria prescribed in section B7 for the following items:
- (i) Collective investment vehicles and other investments packaged as funds, including related undertakings used as investment vehicles;
  - (ii) Segregated accounts assets and liabilities;
  - (iii) Deposit asset and liabilities;
  - (iv) Assets and liabilities held by ceding insurers or under retrocession;
  - (v) Other sundry assets and liabilities; and
  - (vi) Derivatives.
- b) For asset types referred to in paragraph (a) (i) to (vi) where the ‘look-through’ approach cannot be applied, the residual balance shall be included in ‘Equity Securities – Other Investments’;
- c) Short exposures qualifying as assets held for risk-mitigation purposes and short exposures not qualifying as assets held for risk-mitigation purposes, shall both be determined in accordance with criteria prescribed in section B5; and
- d) Amounts are to be reported on an EBS valuation basis.

D21A. The equity investments that are eligible to be used in the calculation of  $C_{equity}^{grandfathered}$  as defined in section D21.2 are determined as follows:

- (i) The average value of equities as a percentage of total assets over the prior three financial year ends before 1 January 2019 (i.e., over the financial years ending 2016 to 2018) is calculated.
  - 1) Similarly, for each class of equities in accordance with Table 2B, the average amounts as a percentage of total equities shall be determined over the same prior three years, (i.e., the allocations for each equity class).
- (ii) The total amount of equities eligible to be used in the calculation of  $C_{equity}^{grandfathered}$  as defined in section D21.2 at each year end is determined by multiplying the amount of legacy reserves by the equity percentage of paragraph (i)., where
  - 1) ‘Legacy reserves’ are defined as the long-term best estimate liabilities, at the applicable point in time (financial year-end), for insurance business carried on as at 31 December 2018.
  - 2) The total amount of equities eligible to be used in the calculation of  $C_{equity}^{grandfathered}$  as defined in section D21.2 at each year-end shall not be greater than the amount of the legacy reserves.
- (iii) The equity investments eligible to be used in the calculation of  $C_{equity}^{grandfathered}$  as defined in section D21.2 per equity class are calculated by multiplying the total amount in paragraph (ii.) by the equity class allocation in paragraph (i).
- (iv) Future applicable reserves shall be capped at the initial reserve. The amount of equities eligible to be used in the calculation of  $C_{equity}^{grandfathered}$  as defined in section D21.2 can, therefore, never be greater than the initial amount.

- (v) Equities that are eligible to be used in the calculation of  $C_{equity}^{grandfathered}$  as defined in section D21.2 may be traded or replaced within a specific equity class and still receive the aforementioned treatment.

### ***Instructions – Equity Grandfathering in the BSCR Model***

- D21.4 Insurance groups that do not use equity grandfathering are required to calculate equity risk both on the old BSCR basis and the new BSCR basis; both calculations are required for the transitional functionality. (If an insurance group opts to transition immediately to the new BSCR basis and receives the Authority’s approval, calculation on the old basis is not needed; in this case the BSCR model needs to be modified to eliminate the transitional calculation in the Summary tab.)
- D21.5 Those insurance groups that decide to use equity grandfathering for their eligible Long-Term business are required to calculate the equity risk with grandfathering (the ‘grandfathered equity risk’) *in addition* to the two calculations above (i.e., pure old and pure new basis), for a total of three separate equity risk calculations. In the calculation of the grandfathered equity risk, part of the equity investments (the grandfathered part) are allocated to the old equity risk calculation, and the remaining part of the equity investments (the non-grandfathered part) are allocated to the new equity risk calculation.
- D21.6 Since the implementation of the grandfathered equity risk calculation requires both the old equity risk tab and the new equity risk tab, in order to be able to determine all three equity risk amounts – old basis, new basis, grandfathered – at the same time in one BSCR model, two copies of both the old and the new equity risk calculation are required. To this end, two additional tabs are introduced to calculate the grandfathered equity risk amount, together with the required supporting schedules that feed the input data into the equity risk calculation tabs.
- D21.7 In practical terms, the process is as follows:
- a) To calculate the equity risk charge on the old BSCR basis, all the equity investments are to be allocated to the ‘Equity Investments’ tab (through filling the appropriate schedules), as if the old rules applied.
  - b) To calculate the equity risk charge on the new BSCR basis, all the equity investments are to be allocated to the ‘Equity Investments (Revised)’ tab (through filling the appropriate schedules), as if the new rules applied.
  - c) To calculate the grandfathered equity risk charge on the new basis,
    - (i) The amount of equity investments eligible for grandfathering, per each equity class, is determined using the helper tab ‘Equity Grandfathering’; by extension, this determines the amounts of equity investments, per each class, that are not eligible for grandfathering as the difference between the total investment amounts and the grandfathered amounts.

- (ii) Those (and only those) equity investments that are eligible for grandfathering are to be allocated to the 'Equity Investments (Grandf)' tab, as if the old rules applied.
  - 1) This is done by filling in the helper schedule 'Grandfathered Equity Part' with the grandfathered equity investments.
- (iii) The remaining (non-grandfathered) equity investments are to be allocated to the 'Equity Investments (Non-Grandf)' tab following the new rules.
  - 1) This is done by filling in the helper schedule 'Non-Grandfathered Equity Part' with the non-grandfathered equity investments.

D21.8

Although the pure new basis equity risk capital requirement (in subparagraph B above) is not directly used in determining the BSCR for insurance groups using equity grandfathering, it is required as additional information. This is to assess the effect of equity grandfathering and the capital position the insurer would have without it. The Authority expects the insurance groups to calculate the capital requirements without grandfathering for their own risk management purposes as well.

## D22. INTEREST RATE AND LIQUIDITY RISK

### *Background*

- D22.1 The interest rate and liquidity risk charge calculation may be calculated based on the instructions D22.2-D22.9 (option 1) or based on the instructions D22.10-D22.15 (option 2). Once the insurance group chooses to use option 2, the insurance group cannot move back to option 1 without the prior written approval of the Authority.

### *Interest Rate and Liquidity Risk Capital Charge - Option 1*

- D22.2 The interest rate and liquidity risk option 1 represents the economic risk an insurance group is subjected to due to changes in interest rates. The charge is calculated by applying the 'shock' of a 2% increase in interest rates to the portion of the insurance group's assets (proportionate to the percentage of reserves) related to the duration difference. These assets include quoted and unquoted bonds and debentures - other, quoted and unquoted preferred stocks, and mortgage loans as reported on Schedules IIB and IIC.
- D22.3 The interest rate and liquidity risk option 2 represents an alternative and more risk - ensitive method that requires insurance groups to apply shocks to the yield curve used for determining best estimate liabilities and market value of assets (which includes changes for interest rate-sensitive cash flows in the calculation). The capital requirement is determined as the negative changes to the net asset value of the highest magnitude resulting from these shocks.
- D22.4 The interest rate and liquidity risk option 1 charge calculation can be summarised by the following formula:

$$C_{\text{int}} = \text{bonds} \times \text{duration} \times \text{marketdecline}, \quad \text{where}$$

*bonds* = quoted and unquoted value of bonds and debentures - other, preferred stocks or mortgage loans;

*duration* = the higher of 1 or the insurer's effective asset duration less the insurer's effective liability duration or the insurer's effective liability duration less the insurer's effective asset duration; and

*marketdecline* = assumed interest rate shock supplied by BMA.

### *Items*

- D22.5 Bonds and Debentures – Based on current year Schedule II (EBS) column (9), line 10 and Schedule IIA (EBS) column (9), line 10; total quoted and unquoted value of bonds and debentures.

- D22.6 Preferred Stocks – Based on current year Schedule II (EBS) column (9), line 21 and Schedule IIA (EBS) column (9), line 21; total quoted and unquoted value of preferred stocks portfolio.
- D22.7 Mortgage Loans – Based on current year Schedule II (EBS) column (1), line 26 and Schedule IIA (EBS) column (1), line 26; total amortised cost (outstanding principal amount less any provision made for doubtful collection) of mortgage loan portfolio.
- D22.8 Effective Duration of Assets – The effective duration calculation is based on total bonds and debentures (Schedule II (EBS) column (9), line 10 and Schedule IIA (EBS) column (9), line 10), preferred stocks (Schedule II (EBS) column (9), line 21 and Schedule IIA (EBS) column (9), line 21), and mortgage loans portfolios (Schedule II (EBS) column (1), line 26 and Schedule IIA (EBS) column (1), line 26). The effective asset duration is pulled from Schedule V, line (c).
- D22.9 Effective Duration of Liabilities – The effective duration calculation is based on the reserves (Form 1EBS, lines 17(d)). The effective liability duration is pulled from Schedule V, line (d).

***Instructions Affecting Interest Rate and Liquidity Risk***

- All assets comprising of total bonds and debentures, preferred stock and mortgage loans investments that are subject to capital charges within the interest rate/liquidity risk charge shall be included;
- All quoted and unquoted non-affiliated other bonds and debentures and preferred stock shall be included in the interest rate/liquidity risk charge; and
- All other bonds and debentures, preferred stock and mortgage loans investments shall be reported on a basis consistent with that used for purposes of described in the Prudential Standard Rules Schedule XIV and the guidance note for statutory reporting regime.

***Interest Rate and Liquidity Risk Capital Charge Option 2***

- D22.10 The interest rate and liquidity risk option 2 charge calculation can be summarised by the following formula:

$$C_{Interest} = \max\{\max(Shock_{IR,Down}, Shock_{IR,Up}) - Offset_{ScenarioBased}, 0\};$$

Where—

$$Shock_{IR,\omega} = \sum_{CCY} Shock_{IR,\omega}^{CCY}$$

$$Shock_{IR,\omega}^{CCY} = (MVA_{Before}^{CCY,Q} - MVA_{After,\omega}^{CCY,Q}) + \max(MVA_{Before}^{CCY,NQ} - MVA_{After,\omega}^{CCY,NQ}, 0) - (MVL_{Before}^{CCY} - MVL_{After,\omega}^{CCY})$$

$$\omega = Down, Up$$

$$Offset_{ScenarioBased} = \min(0.5 \cdot (BELiability_{WorstScenario} - BELiability_{BaseScenario}), 0.75 \cdot C_{Interest}^{WithoutOffset})$$

$$C_{Interest}^{WithoutOffset} = \max(Shock_{IR,Down}, Shock_{IR,Up})$$

|                               |  |
|-------------------------------|--|
| $MVA_{Before}^{CCY,Q}$        | = refers to the market value of qualified assets including derivatives qualifying as held for risk-mitigating purposes (as described in section B4) before shock $\omega$ ( $\omega$ =Up or Down) by currency type (CCY), that has been converted to the functional currency as expressed in Form 1EBS;  |
| $MVA_{After}^{CCY,Q}$         | = refers to the revaluation of qualified assets including derivatives qualifying as held for risk-mitigating purposes (as described in section B4) after shocking interest rates by $\chi(CCY,\omega)$ where (CCY) refers to currency type, $\omega$ refers to shock Down and Up, and $\chi$ refers to the shock vector where the revalued amount has been converted to the functional currency as reported in Form 1EBS prescribed in Table 3B;         |
| $MVA_{Before}^{CCY,NQ}$       | = refers to the market value of non-qualified assets which are derivatives not qualifying as held for risk-mitigating purposes (as described in section B4) before shock $\omega$ ( $\omega$ =Up or Down) by currency type (CCY), that has been converted to the functional currency as expressed in Form 1EBS;  |
| $MVA_{After}^{CCY,NQ}$        | = refers to the revaluation of non-qualified assets which are derivatives not qualifying as held for risk-mitigating purposes (as described in section B4) after shocking interest rates by $\chi(CCY,\omega)$ where (CCY) refers to currency type, $\omega$ refers to shock Down and Up, and $\chi$ refers to the shock vector where the revalued amount has been converted to the functional currency as reported in Form 1EBS prescribed in Table 3B; |
| $MVL_{Before}^{CCY}$          | = refers to the best estimate of insurance liabilities and other liabilities before shock $\omega$ ( $\omega$ =Up or Down) by currency type that has been converted to the functional currency as reported in Form 1EBS;   |
| $MVL_{After}^{CCY}$           | = refers to the revaluation of the best estimate of insurance liabilities and other liabilities after shocking interest rates by $\chi(CCY,\omega)$ where (CCY) refers to currency type, $\omega$ refers to shock Down and Up, and $\chi$ refers to the shock vector where the revalued amount has been converted to the functional currency as reported in Form 1EBS prescribed in Table 3B;  |
| $BELiability_{BaseScenario}$  | = refers to best estimate of liabilities in the base case scenario when using the scenario-based approach; and   |
| $BELiability_{WorstScenario}$ | = refers to best estimate of liabilities in the worst-case scenario when using the scenario-based approach.  |

### Items

|        |  |
|--------|--|
| D22.11 | Assets (exposures other than derivatives) – based on current year interest rate-sensitive assets, including interest rate-sensitive exposures from investment holdings packaged as funds, segregated account company assets, deposit assets and other sundry assets as determined from the application of the look-through provisions. |
| D22.12 | Assets Qualifying as held for risk-mitigating purposes (derivative exposures) – based on current year interest rate sensitive assets including interest rate sensitive exposures from investment <u>holdings</u> packaged as funds, segregated account company assets,   |

deposit assets and other sundry assets as determined from the application of the look-through provisions.

D22.13 Assets Not Qualifying as held for risk-mitigating purposes (derivative exposures) – based on current year interest rate sensitive assets including interest rate sensitive exposures from investment holdings packaged as funds, segregated account company assets, deposit assets and other sundry assets as determined from the application of the look-through provisions.

D22.14 Liabilities (exposures other than derivatives) – based on current year interest rate sensitive exposures from insurance technical provisions, segregated account company liabilities, deposit liabilities and other sundry liabilities as determined from the application of the look-through provisions.

D22.15 Liabilities (derivative exposures) – based on current year interest rate sensitive exposures from insurance technical provisions, segregated account company liabilities, deposit liabilities and other sundry liabilities as determined from the application of the look-through provisions



a) Interest Rate Down – Exposures without Derivatives

| <b>Currency</b>       | <b>Market Value of Assets</b>                                | <b>Market Value of Liabilities</b>                           |
|-----------------------|--|--|
| United States Dollars | Based on Sch. XXIII, Col.(A), line 1 Less Col. (B), line 1   | Based on Sch. XXIII, Col. (C), line 1 Less Col. (D), line 1  |
| Euro                  | Based on Sch. XXIII, Col.(A), line 2 Less Col. (B), line 2   | Based on Sch. XXIII, Col.(C), line 2 Less Col. (D), line 2   |
| UK Pounds             | Based on Sch. XXIII, Col.(A), line 3 Less Col. (B), line 3   | Based on Sch. XXIII, Col.(C), line 3 Less Col. (D), line 3   |
| Japan Yen             | Based on Sch. XXIII, Col.(A), line 4 Less Col. (B), line 4   | Based on Sch. XXIII, Col.(C), line 4 Less Col. (D), line 4   |
| Canada Dollars        | Based on Sch. XXIII, Col.(A), line 5 Less Col. (B), line 5   | Based on Sch. XXIII, Col.(C), line 5 Less Col. (D), line 5   |
| Swiss Francs          | Based on Sch. XXIII, Col.(A), line 6 Less Col. (B), line 6   | Based on Sch. XXIII, Col.(C), line 6 Less Col. (D), line 6   |
| Australia Dollars     | Based on Sch. XXIII, Col.(A), line 7 Less Col. (B), line 7   | Based on Sch. XXIII, Col.(C), line 7 Less Col. (D), line 7   |
| New Zealand Dollars   | Based on Sch. XXIII, Col.(A), line 8 Less Col. (B), line 8   | Based on Sch. XXIII, Col.(C), line 8 Less Col. (D), line 8   |
| Other currency 1      | Based on Sch. XXIII, Col.(A), line 9 Less Col. (B), line 9   | Based on Sch. XXIII, Col.(C), line 9 Less Col. (D), line 9   |
| Other currency 2      | Based on Sch. XXIII, Col.(A), line 10 Less Col. (B), line 10 | Based on Sch. XXIII, Col.(C), line 10 Less Col. (D), line 10 |
| Other currency 3      | Based on Sch. XXIII, Col.(A), line 11 Less Col. (B), line 11 | Based on Sch. XXIII, Col.(C), line 11 Less Col. (D), line 11 |
| Other currency 4      | Based on Sch. XXIII, Col.(A), line 12 Less Col. (B), line 12 | Based on Sch. XXIII, Col.(C), line 12 Less Col. (D), line 12 |
| Other currency 5      | Based on Sch. XXIII, Col.(A), line 13 Less Col. (B), line 13 | Based on Sch. XXIII, Col.(C), line 13 Less Col. (D), line 13 |
| Other currency 6      | Based on Sch. XXIII, Col.(A), line 14 Less Col. (B), line 14 | Based on Sch. XXIII, Col.(C), line 14 Less Col. (D), line 14 |
| Other currency 7      | Based on Sch. XXIII, Col.(A), line 15 Less Col. (B), line 15 | Based on Sch. XXIII, Col.(C), line 15 Less Col. (D), line 15 |
| Other currency 8      | Based on Sch. XXIII, Col.(A), line 16 Less Col. (B), line 16 | Based on Sch. XXIII, Col.(C), line 16 Less Col. (D), line 16 |
| Other currency 9      | Based on Sch. XXIII, Col.(A), line 17 Less Col. (B), line 17 | Based on Sch. XXIII, Col.(C), line 17 Less Col. (D), line 17 |
| Other currency 10     | Based on Sch. XXIII, Col.(A), line 18 Less Col. (B), line 18 | Based on Sch. XXIII, Col.(C), line 18 Less Col. (D), line 18 |

b) Interest Rate Down – Derivative Exposure

| <b>Currency</b>       | <b>Market Value of Assets Qualifying for Risk Mitigating Purposes</b> | <b>Market Value of Assets Not Qualifying for Risk Mitigating Purposes</b> | <b>Market Value of Liabilities</b>                          |
|-----------------------|---|---|---|
| United States Dollars | Based on Sch. XXIII, Col.(G), line 1 Less Col. (H), line 1            | Based on Sch. XXIII, Col. (I), line 1 Less Col. (J), line 1               | Based on Sch. XXIII, Col. (K), line 1 Less Col. (L), line 1 |
| Euro                  | Based on Sch. XXIII, Col.(G), line 2 Less Col. (H), line 2            | Based on Sch. XXIII, Col.(I), line 2 Less Col. (J), line 2                | Based on Sch. XXIII, Col.(K), line 2 Less Col. (L), line 2  |
| UK Pounds             | Based on Sch. XXIII, Col.(G), line 3 Less Col. (H), line 3            | Based on Sch. XXIII, Col.(I), line 3 Less Col. (J), line 3                | Based on Sch. XXIII, Col.(K), line 3 Less Col. (L), line 3  |
| Japan Yen             | Based on Sch. XXIII, Col.(G), line 4 Less Col. (H), line 4            | Based on Sch. XXIII, Col.(I), line 4 Less Col. (J), line 4                | Based on Sch. XXIII, Col.(K), line 4 Less Col. (L), line 4  |



|                     |  |  |  |
|---------------------|--|--|--|
| Canada Dollars      | Based on Sch. XXIII, Col.(G), line 5 Less Col. (H), line 5   | Based on Sch. XXIII, Col.(I), line 5 Less Col. (J), line 5   | Based on Sch. XXIII, Col.(K), line 5 Less Col. (L), line 5   |
| Swiss Francs        | Based on Sch. XXIII, Col.(G), line 6 Less Col. (H), line 6   | Based on Sch. XXIII, Col.(I), line 6 Less Col. (J), line 6   | Based on Sch. XXIII, Col.(K), line 6 Less Col. (L), line 6   |
| Australia Dollars   | Based on Sch. XXIII, Col.(G), line 7 Less Col. (H), line 7   | Based on Sch. XXIII, Col.(I), line 7 Less Col. (J), line 7   | Based on Sch. XXIII, Col.(K), line 7 Less Col. (L), line 7   |
| New Zealand Dollars | Based on Sch. XXIII, Col.(G), line 8 Less Col. (H), line 8   | Based on Sch. XXIII, Col.(I), line 8 Less Col. (J), line 8   | Based on Sch. XXIII, Col.(K), line 8 Less Col. (L), line 8   |
| Other currency 1    | Based on Sch. XXIII, Col.(G), line 9 Less Col. (H), line 9   | Based on Sch. XXIII, Col.(I), line 9 Less Col. (J), line 9   | Based on Sch. XXIII, Col.(K), line 9 Less Col. (L), line 9   |
| Other currency 2    | Based on Sch. XXIII, Col.(G), line 10 Less Col. (H), line 10 | Based on Sch. XXIII, Col.(I), line 10 Less Col. (J), line 10 | Based on Sch. XXIII, Col.(K), line 10 Less Col. (L), line 10 |
| Other currency 3    | Based on Sch. XXIII, Col.(G), line 11 Less Col. (H), line 11 | Based on Sch. XXIII, Col.(I), line 11 Less Col. (J), line 11 | Based on Sch. XXIII, Col.(K), line 11 Less Col. (L), line 11 |
| Other currency 4    | Based on Sch. XXIII, Col.(G), line 12 Less Col. (H), line 12 | Based on Sch. XXIII, Col.(I), line 12 Less Col. (J), line 12 | Based on Sch. XXIII, Col.(K), line 12 Less Col. (L), line 12 |
| Other currency 5    | Based on Sch. XXIII, Col.(G), line 13 Less Col. (H), line 13 | Based on Sch. XXIII, Col.(I), line 13 Less Col. (J), line 13 | Based on Sch. XXIII, Col.(K), line 13 Less Col. (L), line 13 |
| Other currency 6    | Based on Sch. XXIII, Col.(G), line 14 Less Col. (H), line 14 | Based on Sch. XXIII, Col.(I), line 14 Less Col. (J), line 14 | Based on Sch. XXIII, Col.(K), line 14 Less Col. (L), line 14 |
| Other currency 7    | Based on Sch. XXIII, Col.(G), line 15 Less Col. (H), line 15 | Based on Sch. XXIII, Col.(I), line 15 Less Col. (J), line 15 | Based on Sch. XXIII, Col.(K), line 15 Less Col. (L), line 15 |
| Other currency 8    | Based on Sch. XXIII, Col.(G), line 16 Less Col. (H), line 16 | Based on Sch. XXIII, Col.(I), line 16 Less Col. (J), line 16 | Based on Sch. XXIII, Col.(K), line 16 Less Col. (L), line 16 |
| Other currency 9    | Based on Sch. XXIII, Col.(G), line 17 Less Col. (H), line 17 | Based on Sch. XXIII, Col.(I), line 17 Less Col. (J), line 17 | Based on Sch. XXIII, Col.(K), line 17 Less Col. (L), line 18 |
| Other currency 10   | Based on Sch. XXIII, Col.(G), line 18 Less Col. (H), line 18 | Based on Sch. XXIII, Col.(I), line 18 Less Col. (J), line 18 | Based on Sch. XXIII, Col.(K), line 18 Less Col. (L), line 18 |

c) Interest Rate Up – Exposures without Derivatives

| Currency              | Market Value of Assets                                       | Market Value of Liabilities                                  |
|-----------------------|--|--|
| United States Dollars | Based on Sch. XXIII, Col.(A), line 20 Less Col. (B), line 20 | Based on Sch. XXIII, Col.(C), line 20 Less Col. (D), line 20 |
| Euro                  | Based on Sch. XXIII, Col.(A), line 21 Less Col. (B), line 21 | Based on Sch. XXIII, Col.(C), line 21 Less Col. (D), line 21 |

|                     |  |  |
|---------------------|--|--|
| UK Pounds           | Based on Sch. XXIII, Col.(A), line 22 Less Col. (B), line 22 | Based on Sch. XXIII, Col.(C), line 22 Less Col. (D), line 22 |
| Japan Yen           | Based on Sch. XXIII, Col.(A), line 23 Less Col. (B), line 23 | Based on Sch. XXIII, Col.(C), line 23 Less Col. (D), line 23 |
| Canada Dollars      | Based on Sch. XXIII, Col.(A), line 24 Less Col. (B), line 24 | Based on Sch. XXIII, Col.(C), line 24 Less Col. (D), line 24 |
| Swiss Francs        | Based on Sch. XXIII, Col.(A), line 25 Less Col. (B), line 25 | Based on Sch. XXIII, Col.(C), line 25 Less Col. (D), line 25 |
| Australia Dollars   | Based on Sch. XXIII, Col.(A), line 26 Less Col. (B), line 26 | Based on Sch. XXIII, Col.(C), line 26 Less Col. (D), line 26 |
| New Zealand Dollars | Based on Sch. XXIII, Col.(A), line 27 Less Col. (B), line 27 | Based on Sch. XXIII, Col.(C), line 27 Less Col. (D), line 27 |
| Other currency 1    | Based on Sch. XXIII, Col.(A), line 28 Less Col. (B), line 28 | Based on Sch. XXIII, Col.(C), line 28 Less Col. (D), line 28 |
| Other currency 2    | Based on Sch. XXIII, Col.(A), line 29 Less Col. (B), line 29 | Based on Sch. XXIII, Col.(C), line 29 Less Col. (D), line 29 |
| Other currency 3    | Based on Sch. XXIII, Col.(A), line 30 Less Col. (B), line 30 | Based on Sch. XXIII, Col.(C), line 30 Less Col. (D), line 30 |
| Other currency 4    | Based on Sch. XXIII, Col.(A), line 31 Less Col. (B), line 31 | Based on Sch. XXIII, Col.(C), line 31 Less Col. (D), line 31 |
| Other currency 5    | Based on Sch. XXIII, Col.(A), line 32 Less Col. (B), line 32 | Based on Sch. XXIII, Col.(C), line 32 Less Col. (D), line 32 |
| Other currency 6    | Based on Sch. XXIII, Col.(A), line 33 Less Col. (B), line 33 | Based on Sch. XXIII, Col.(C), line 33 Less Col. (D), line 33 |
| Other currency 7    | Based on Sch. XXIII, Col.(A), line 34 Less Col. (B), line 34 | Based on Sch. XXIII, Col.(C), line 34 Less Col. (D), line 34 |
| Other currency 8    | Based on Sch. XXIII, Col.(A), line 35 Less Col. (B), line 35 | Based on Sch. XXIII, Col.(C), line 35 Less Col. (D), line 35 |
| Other currency 9    | Based on Sch. XXIII, Col.(A), line 36 Less Col. (B), line 36 | Based on Sch. XXIII, Col.(C), line 36 Less Col. (D), line 36 |
| Other currency 10   | Based on Sch. XXIII, Col.(A), line 37 Less Col. (B), line 37 | Based on Sch. XXIII, Col.(C), line 37 Less Col. (D), line 37 |

d) Interest Rate Up – Derivative Exposure

| Currency              | Market Value of Assets Qualifying for Risk Mitigating Purposes | Market Value of Assets Not Qualifying for Risk Mitigating Purposes | Market Value of Liabilities                                  |
|-----------------------|--|--|--|
| United States Dollars | Based on Sch. XXIII, Col.(G), line 20 Less Col. (H), line 20   | Based on Sch. XXIII, Col.(I), line 20 Less Col. (J), line 20       | Based on Sch. XXIII, Col.(K), line 20 Less Col. (L), line 20 |
| Euro                  | Based on Sch. XXIII, Col.(G), line 21 Less Col. (H), line 21   | Based on Sch. XXIII, Col.(I), line 21 Less Col. (J), line 21       | Based on Sch. XXIII, Col.(K), line 21 Less Col. (L), line 21 |
| UK Pounds             | Based on Sch. XXIII, Col.(G), line 22 Less Col. (H), line 22   | Based on Sch. XXIII, Col.(I), line 22 Less Col. (J), line 22       | Based on Sch. XXIII, Col.(K), line 22 Less Col. (L), line 22 |
| Japan Yen             | Based on Sch. XXIII, Col.(G), line 23 Less Col. (H), line 23   | Based on Sch. XXIII, Col.(I), line 23 Less Col. (J), line 23       | Based on Sch. XXIII, Col.(K), line 23 Less Col. (L), line 23 |
| Canada Dollars        | Based on Sch. XXIII, Col.(G), line 24 Less Col. (H), line 24   | Based on Sch. XXIII, Col.(I), line 24 Less Col. (J), line 24       | Based on Sch. XXIII, Col.(K), line 24 Less Col. (L), line 24 |
| Swiss Francs          | Based on Sch. XXIII, Col.(G), line 25 Less Col. (H), line 25   | Based on Sch. XXIII, Col.(I), line 25 Less Col. (J), line 25       | Based on Sch. XXIII, Col.(K), line 25 Less Col. (L), line 25 |

|                     |   |   |   |
|---------------------|---|---|---|
| Australia Dollars   | Based on Sch. XXIII, Col.(G), line 26<br>Less Col. (H), line 26 | Based on Sch. XXIII, Col.(I), line 26 Less<br>Col. (J), line 26 | Based on Sch. XXIII, Col.(K), line 26<br>Less Col. (L), line 26 |
| New Zealand Dollars | Based on Sch. XXIII, Col.(G), line 27<br>Less Col. (H), line 27 | Based on Sch. XXIII, Col.(I), line 27 Less<br>Col. (J), line 27 | Based on Sch. XXIII, Col.(K), line 27<br>Less Col. (L), line 27 |
| Other currency 1    | Based on Sch. XXIII, Col.(G), line 28<br>Less Col. (H), line 28 | Based on Sch. XXIII, Col.(I), line 28 Less<br>Col. (J), line 28 | Based on Sch. XXIII, Col.(K), line 28<br>Less Col. (L), line 28 |
| Other currency 2    | Based on Sch. XXIII, Col.(G), line 29<br>Less Col. (H), line 29 | Based on Sch. XXIII, Col.(I), line 29 Less<br>Col. (J), line 29 | Based on Sch. XXIII, Col.(K), line 29<br>Less Col. (L), line 29 |
| Other currency 3    | Based on Sch. XXIII, Col.(G), line 30<br>Less Col. (H), line 30 | Based on Sch. XXIII, Col.(I), line 30 Less<br>Col. (J), line 30 | Based on Sch. XXIII, Col.(K), line 30<br>Less Col. (L), line 30 |
| Other currency 4    | Based on Sch. XXIII, Col.(G), line 31<br>Less Col. (H), line 31 | Based on Sch. XXIII, Col.(I), line 31 Less<br>Col. (J), line 31 | Based on Sch. XXIII, Col.(K), line 31<br>Less Col. (L), line 31 |
| Other currency 5    | Based on Sch. XXIII, Col.(G), line 32<br>Less Col. (H), line 32 | Based on Sch. XXIII, Col.(I), line 32 Less<br>Col. (J), line 32 | Based on Sch. XXIII, Col.(K), line 32<br>Less Col. (L), line 32 |
| Other currency 6    | Based on Sch. XXIII, Col.(G), line 33<br>Less Col. (H), line 33 | Based on Sch. XXIII, Col.(I), line 33 Less<br>Col. (J), line 33 | Based on Sch. XXIII, Col.(K), line 33<br>Less Col. (L), line 33 |
| Other currency 7    | Based on Sch. XXIII, Col.(G), line 34<br>Less Col. (H), line 34 | Based on Sch. XXIII, Col.(I), line 34 Less<br>Col. (J), line 34 | Based on Sch. XXIII, Col.(K), line 34<br>Less Col. (L), line 34 |
| Other currency 8    | Based on Sch. XXIII, Col.(G), line 35<br>Less Col. (H), line 35 | Based on Sch. XXIII, Col.(I), line 35 Less<br>Col. (J), line 35 | Based on Sch. XXIII, Col.(K), line 35<br>Less Col. (L), line 35 |
| Other currency 9    | Based on Sch. XXIII, Col.(G), line 36<br>Less Col. (H), line 36 | Based on Sch. XXIII, Col.(I), line 36 Less<br>Col. (J), line 36 | Based on Sch. XXIII, Col.(K), line 36<br>Less Col. (L), line 36 |
| Other currency 10   | Based on Sch. XXIII, Col.(G), line 37<br>Less Col. (H), line 37 | Based on Sch. XXIII, Col.(I), line 37 Less<br>Col. (J), line 37 | Based on Sch. XXIII, Col.(K), line 37<br>Less Col. (L), line 37 |

***Instructions Affecting Interest Rate and Liquidity Risk***

- a) All assets sensitive to interest rates shall be included in the table, including but not limited to fixed income assets, hybrid instruments, deposits, loans (including mortgage and policyholder loans), reinsurance balance receivables and exposures as determined by application of the 'look-through' approach calculated in accordance with criteria prescribed in section B7 for the following items:
  - (i) Collective investment vehicles and other investments packaged as funds, including related undertakings used as investment vehicles;
  - (ii) Segregated accounts assets;
  - (iii) Deposit asset;
  - (iv) Other sundry;
  - (v) Derivatives;
  - (vi) Funds held by ceding insurers.
- b) All liabilities sensitive to interest rates shall be included in the table, including but not limited to best estimate of insurance liabilities, other liabilities (except risk margin) and liability exposures determined by application of the 'look-through' approach calculated in accordance with the criteria prescribed in section B7 for the following items:
  - (i) Segregated accounts liabilities;
  - (ii) Deposit liabilities;
  - (iii) Other sundry liabilities;
  - (iv) Derivatives;
  - (v) Funds held under retrocession.
- c) Amounts are to be reported on an EBS valuation basis.

## D23. CURRENCY RISK

### Background

- D23.1 The currency risk charge is based on amounts reported on Form 1EBS total assets and liabilities. It represents the risk that the net asset position of an insurance group may worsen as a result of exchange rate changes if assets and liabilities are not currency matched. Insurance groups are to include at least 95% of their total assets and liabilities based on the predefined thirteen currency types (United States Dollar, Bermuda Dollar, Qatar Riyal, Hong Kong Dollar, Euro, Denmark Kroner, Bulgaria Leva, West African CFA Franc, Central African CFA Franc, Comorian Francs United Kingdom Pounds, Canadian Dollar and Japanese Yen) and ten other currency types.
- D23.2 The currency risk capital charge is based on the assets held for each currency type and the liabilities and the proxy BSCR (proxy BSCR is determined by applying the proxy BSCR factor of D23.3 to the currency type's liabilities). In instances there is a currency type that has insufficient assets held to the liabilities and proxy BSCR, a shock is applied to both the assets and the liabilities and the allocated capital requirement. The shock is a downwards shock to the reporting currency, meaning that the reporting currency will depreciate relative to other currencies. If there are sufficient assets held to the liabilities and proxy BSCR, then there is no/NIL capital charge applied.
- D23.3 The proxy BSCR factor is determined as the greater of:
- The prior year ECR charge to the prior year total EBS liabilities reported and
  - The average of the last three prior years ECR charge to last three prior years total EBS liabilities reported.

### Currency Risk Capital Charge

- D23.4 The currency risk charge calculation can be summarised by the following formula:

$$C_{\text{Currency}} = \sum_i \max \left\{ \left[ \begin{aligned} & (MVA_{i,Before} - MVA_{i,After}(\chi_i)) + (MVDL_{i,Before}^Q - MVDL_{i,After}^Q(\chi_i)) + \dots \\ & + (MVDS_{i,Before}^Q - MVDS_{i,After}^Q(\chi_i)) + \max(MVDL_{i,Before}^{NQ} - MVDL_{i,After}^{NQ}(\chi_i), 0) + \dots \\ & + \max(MVDS_{i,Before}^{NQ} - MVDS_{i,After}^{NQ}(\chi_i), 0) - (MVL_{i,Before} - MVL_{i,After}(\chi_i)) + \dots \\ & + Currproxybscr_i \times \chi_i \end{aligned} \right], 0 \right\}$$

- $\chi_i$  = the instantaneous shocks prescribed in Table 4A for each type of currency where  $(MVA_{i,Before} + MVDL_{i,Before}^{NQ} + MVDS_{i,Before}^{NQ} + MVDL_{i,Before}^Q + MVDS_{i,Before}^Q - MVL_{i,Before}^Q - Currproxybscr_i) < 0$  and 0 otherwise;
- $Currency_i$  = refers to currency type that has been converted to the functional currency as reported in Form 1EBS
- $MVA_{i,Before}$  = refers to the market value of assets excluding currency-sensitive derivatives prescribed by the Authority by currency type (CCY), that has been converted to the

|                        |  |
|------------------------|--|
| $MVA_{i,After}$        | functional currency as reported in Form 1EBS;<br>= refers to the revaluation of assets excluding currency-sensitive derivatives after shocking by $\chi(\text{CCY})$ where (CCY) refers to currency type, and $\chi$ refers to the shock, where the revalued amount has been converted to the functional currency as reported in Form 1EBS;                |
| $MVDL_{i,Before}^Q$    | = refers to the market value of long positions in derivatives qualifying as held for risk-mitigating purposes (as described in section B4) by currency type (CCY), that has been converted to the functional currency as reported in Form 1EBS;  |
| $MVDL_{i,After}^Q$     | = refers to the revaluation of long positions in derivatives qualifying as held for risk-mitigating purposes (as described in section B4) after shocking by $\chi(\text{CCY})$ where (CCY) refers to currency type, and $\chi$ refers to the shock, where the revalued amount has been converted to the functional currency as reported in Form 1EBS;      |
| $MVDS_{i,Before}^Q$    | = refers to the market value of short positions in derivatives qualifying as held for risk-mitigating purposes (as described in section B4) by currency type (CCY), that has been converted to the functional currency as reported in Form 1EBS;   |
| $MVDS_{i,After}^Q$     | = refers to the revaluation of short positions in derivatives qualifying as held for risk-mitigating purposes (as described in section B4) after shocking by $\chi(\text{CCY})$ where (CCY) refers to currency type, and $\chi$ refers to the shock, where the revalued amount has been converted to the functional currency as reported in Form 1EBS;     |
| $MVDL_{i,Before}^{NQ}$ | = refers to the market value of long positions in derivatives not qualifying as held for risk-mitigating purposes (as described in section B4) by currency type (CCY), that has been converted to the functional currency as reported in Form 1EBS;  |
| $MVDL_{i,After}^{NQ}$  | = refers to the revaluation of long positions in derivatives not qualifying as held for risk-mitigating purposes (as described in section B4) after shocking by $\chi(\text{CCY})$ where (CCY) refers to currency type, and $\chi$ refers to the shock, where the revalued amount has been converted to the functional currency as reported in Form 1EBS;  |
| $MVDS_{i,Before}^{NQ}$ | = refers to the market value of short positions in derivatives not qualifying as held for risk-mitigating purposes (as described in section B4) by currency type (CCY), that has been converted to the functional currency as reported in Form 1EBS;   |
| $MVDS_{i,After}^{NQ}$  | = refers to the revaluation of short positions in derivatives not qualifying as held for risk-mitigating purposes (as described in section B4) after shocking by $\chi(\text{CCY})$ where (CCY) refers to currency type, and $\chi$ refers to the shock, where the revalued amount has been converted to the functional currency as reported in Form 1EBS; |
| $MVL_{i,Before}$       | = refers to the market value of the best estimate of insurance liabilities and other liabilities by currency type that has been converted to the functional currency as reported in Form 1EBS;   |
| $MVL_{i,After}$        | = refers to the revaluation of the best estimate of insurance liabilities and other liabilities after shocking by $\chi(\text{CCY})$ where (CCY) refers to currency type and $\chi$ refers to the shock, where the revalued amount has been converted to the functional currency as reported in Form 1EBS;   |
| $Currproxybscr_i$      | = refers to the product of $MVL_{i,Before}$ and BSCR Proxy factor  |
| BSCR Proxy Factor      | = greater of paragraphs (a) and (b) below:<br>(a) The ECR divided by Form 1EBS line 39 Total Liabilities for the preceding year and  |

(b) The average of the above ratio for the preceding three years.

where there are no prior submissions available, the BSCR proxy factor is the above ratio that would be obtained from the current submission without taking into account the currency risk charge.

***Items***

- |        |   |
|--------|---|
| D23.5  | Assets (exposures other than derivatives) – based on current year currency exchange rate-sensitive exposures including from cash, investment holdings packaged as funds, segregated account company assets, deposit assets and other sundry assets as determined from the application of the look-through provisions.                         |
| D23.6  | Assets – Derivatives with Long Exposures Not Qualifying as held for risk-mitigating purposes – based on current year currency derivatives including from investment holdings packaged as funds, segregated account company assets, deposit assets and other sundry assets as determined from the application of the look-through provisions.  |
| D23.7  | Assets – Derivatives with Short Exposures Qualifying as held for risk-mitigating purposes – based on current year currency derivatives including from investment holdings packaged as funds, segregated account company assets, deposit assets and other sundry assets as determined from the application of the look-through provisions.     |
| D23.8  | Assets – Derivatives with Short Exposures Not Qualifying as held for risk-mitigating purposes – based on current year currency derivatives including from investment holdings packaged as funds, segregated account company assets, deposit assets and other sundry assets as determined from the application of the look-through provisions. |
| D23.9  | Assets – Derivatives with Long Exposures Qualifying as held for risk-mitigating purposes – based on current year currency derivatives including from investment holdings packaged as funds, segregated account company assets, deposit assets and other sundry assets as determined from the application of the look-through provisions.      |
| D23.10 | <u>EBS Liabilities by Currency Types</u> – Total Best estimate liabilities denominated in given currency.   |
| D23.11 | <u>Total ECR Requirement</u> – Based on three prior years ECR Requirement.  |
| D23.12 | <u>Total EBS Liabilities</u> – Based on three prior years Form 1EBS line 39; total EBS liabilities (note if the EBS liabilities for the preceding three years' is not available, provide the statutory liability as reported on line 39).   |



| Currency                         | Assets Exposures<br>Other than Derivatives | Long Exposures  |   | Short Exposures                                       |   | Liabilities                            |
|----------------------------------|--|---|---|---|---|--|
|                                  |  | Qualifying as Held<br>for Risk Mitigation<br>Purposes | Not Qualifying as<br>Held for Risk<br>Mitigation Purposes | Qualifying as Held<br>for Risk Mitigation<br>Purposes | Not Qualifying as<br>Held for Risk<br>Mitigation Purposes |  |
| United States<br>Dollars         | Based on Sch. XXA,<br>Col.(A), line 1      | Based on Sch. XXA,<br>Col.(B), line 1                 | Based on Sch. XXA,<br>Col.(C), line 1                     | Based on Sch. XXA,<br>Col.(D), line 1                 | Based on Sch. XXA,<br>Col.(E), line 1                     | Based on Sch. XXA,<br>Col.(F), line 1  |
| Bermuda<br>Dollars               | Based on Sch. XXA,<br>Col.(A), line 2      | Based on Sch. XXA,<br>Col.(B), line 2                 | Based on Sch. XXA,<br>Col.(C), line 2                     | Based on Sch. XXA,<br>Col.(D), line 2                 | Based on Sch. XXA,<br>Col.(E), line 2                     | Based on Sch. XXA,<br>Col.(F), line 2  |
| Qatar Riyals                     | Based on Sch. XXA,<br>Col.(A), line 3      | Based on Sch. XXA,<br>Col.(B), line 3                 | Based on Sch. XXA,<br>Col.(C), line 3                     | Based on Sch. XXA,<br>Col.(D), line 3                 | Based on Sch. XXA,<br>Col.(E), line 3                     | Based on Sch. XXA,<br>Col.(F), line 3  |
| Hong Kong<br>Dollars             | Based on Sch. XXA,<br>Col.(A), line 4      | Based on Sch. XXA,<br>Col.(B), line 4                 | Based on Sch. XXA,<br>Col.(C), line 4                     | Based on Sch. XXA,<br>Col.(D), line 4                 | Based on Sch. XXA,<br>Col.(E), line 4                     | Based on Sch. XXA,<br>Col.(F), line 4  |
| Euro                             | Based on Sch. XXA,<br>Col.(A), line 5      | Based on Sch. XXA,<br>Col.(B), line 5                 | Based on Sch. XXA,<br>Col.(C), line 5                     | Based on Sch. XXA,<br>Col.(D), line 5                 | Based on Sch. XXA,<br>Col.(E), line 5                     | Based on Sch. XXA,<br>Col.(F), line 5  |
| Denmark<br>Kroner                | Based on Sch. XXA,<br>Col.(A), line 6      | Based on Sch. XXA,<br>Col.(B), line 6                 | Based on Sch. XXA,<br>Col.(C), line 6                     | Based on Sch. XXA,<br>Col.(D), line 6                 | Based on Sch. XXA,<br>Col.(E), line 6                     | Based on Sch. XXA,<br>Col.(F), line 6  |
| Bulgaria<br>Leva                 | Based on Sch. XXA,<br>Col.(A), line 7      | Based on Sch. XXA,<br>Col.(B), line 7                 | Based on Sch. XXA,<br>Col.(C), line 7                     | Based on Sch. XXA,<br>Col.(D), line 7                 | Based on Sch. XXA,<br>Col.(E), line 7                     | Based on Sch. XXA,<br>Col.(F), line 7  |
| West African<br>CFA Francs       | Based on Sch. XXA,<br>Col.(A), line 8      | Based on Sch. XXA,<br>Col.(B), line 8                 | Based on Sch. XXA,<br>Col.(C), line 8                     | Based on Sch. XXA,<br>Col.(D), line 8                 | Based on Sch. XXA,<br>Col.(E), line 8                     | Based on Sch. XXA,<br>Col.(F), line 8  |
| Central<br>African CFA<br>Francs | Based on Sch. XXA,<br>Col.(A), line 9      | Based on Sch. XXA,<br>Col.(B), line 9                 | Based on Sch. XXA,<br>Col.(C), line 9                     | Based on Sch. XXA,<br>Col.(D), line 9                 | Based on Sch. XXA,<br>Col.(E), line 9                     | Based on Sch. XXA,<br>Col.(F), line 9  |
| Comorian<br>Francs               | Based on Sch. XXA,<br>Col.(A), line 10     | Based on Sch. XXA,<br>Col.(B), line 10                | Based on Sch. XXA,<br>Col.(C), line 10                    | Based on Sch. XXA,<br>Col.(D), line 10                | Based on Sch. XXA,<br>Col.(E), line 10                    | Based on Sch. XXA,<br>Col.(F), line 10 |
| UK Pounds                        | Based on Sch. XXA,<br>Col.(A), line 11     | Based on Sch. XXA,<br>Col.(B), line 11                | Based on Sch. XXA,<br>Col.(C), line 11                    | Based on Sch. XXA,<br>Col.(D), line 11                | Based on Sch. XXA,<br>Col.(E), line 11                    | Based on Sch. XXA,<br>Col.(F), line 11 |
| Canada<br>Dollars                | Based on Sch. XXA,<br>Col.(A), line 12     | Based on Sch. XXA,<br>Col.(B), line 12                | Based on Sch. XXA,<br>Col.(C), line 12                    | Based on Sch. XXA,<br>Col.(D), line 12                | Based on Sch. XXA,<br>Col.(E), line 12                    | Based on Sch. XXA,<br>Col.(F), line 12 |
| Japan Yen                        | Based on Sch. XXA,<br>Col.(A), line 13     | Based on Sch. XXA,<br>Col.(B), line 13                | Based on Sch. XXA,<br>Col.(C), line 13                    | Based on Sch. XXA,<br>Col.(D), line 13                | Based on Sch. XXA,<br>Col.(E), line 13                    | Based on Sch. XXA,<br>Col.(F), line 13 |



|                   |                                     |                                     |                                     |                                     |                                     |                                     |
|-------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Other currency 1  | Based on Sch. XXA, Col.(A), line 14 | Based on Sch. XXA, Col.(B), line 14 | Based on Sch. XXA, Col.(C), line 14 | Based on Sch. XXA, Col.(D), line 14 | Based on Sch. XXA, Col.(E), line 14 | Based on Sch. XXA, Col.(F), line 14 |
| Other currency 2  | Based on Sch. XXA, Col.(A), line 15 | Based on Sch. XXA, Col.(B), line 15 | Based on Sch. XXA, Col.(C), line 15 | Based on Sch. XXA, Col.(D), line 15 | Based on Sch. XXA, Col.(E), line 15 | Based on Sch. XXA, Col.(F), line 15 |
| Other currency 3  | Based on Sch. XXA, Col.(A), line 16 | Based on Sch. XXA, Col.(B), line 16 | Based on Sch. XXA, Col.(C), line 16 | Based on Sch. XXA, Col.(D), line 16 | Based on Sch. XXA, Col.(E), line 16 | Based on Sch. XXA, Col.(F), line 16 |
| Other currency 4  | Based on Sch. XXA, Col.(A), line 17 | Based on Sch. XXA, Col.(B), line 17 | Based on Sch. XXA, Col.(C), line 17 | Based on Sch. XXA, Col.(D), line 17 | Based on Sch. XXA, Col.(E), line 17 | Based on Sch. XXA, Col.(F), line 17 |
| Other currency 5  | Based on Sch. XXA, Col.(A), line 18 | Based on Sch. XXA, Col.(B), line 18 | Based on Sch. XXA, Col.(C), line 18 | Based on Sch. XXA, Col.(D), line 18 | Based on Sch. XXA, Col.(E), line 18 | Based on Sch. XXA, Col.(F), line 18 |
| Other currency 6  | Based on Sch. XXA, Col.(A), line 19 | Based on Sch. XXA, Col.(B), line 19 | Based on Sch. XXA, Col.(C), line 19 | Based on Sch. XXA, Col.(D), line 19 | Based on Sch. XXA, Col.(E), line 19 | Based on Sch. XXA, Col.(F), line 19 |
| Other currency 7  | Based on Sch. XXA, Col.(A), line 20 | Based on Sch. XXA, Col.(B), line 20 | Based on Sch. XXA, Col.(C), line 20 | Based on Sch. XXA, Col.(D), line 20 | Based on Sch. XXA, Col.(E), line 20 | Based on Sch. XXA, Col.(F), line 20 |
| Other currency 8  | Based on Sch. XXA, Col.(A), line 21 | Based on Sch. XXA, Col.(B), line 21 | Based on Sch. XXA, Col.(C), line 21 | Based on Sch. XXA, Col.(D), line 21 | Based on Sch. XXA, Col.(E), line 21 | Based on Sch. XXA, Col.(F), line 21 |
| Other currency 9  | Based on Sch. XXA, Col.(A), line 22 | Based on Sch. XXA, Col.(B), line 22 | Based on Sch. XXA, Col.(C), line 22 | Based on Sch. XXA, Col.(D), line 22 | Based on Sch. XXA, Col.(E), line 22 | Based on Sch. XXA, Col.(F), line 22 |
| Other currency 10 | Based on Sch. XXA, Col.(A), line 23 | Based on Sch. XXA, Col.(B), line 23 | Based on Sch. XXA, Col.(C), line 23 | Based on Sch. XXA, Col.(D), line 23 | Based on Sch. XXA, Col.(E), line 23 | Based on Sch. XXA, Col.(F), line 23 |

### *Instructions Affecting Currency Risk*

- a) The initials 'A' to 'J' on the column labeled 'Shock Otherwise  $\chi_i$ ' shall be replaced by the following shock values:
- (i) 'A' by:
    - 1) '0%' if the reporting currency is Bermuda Dollar or,
    - 2) '5.00%' if the reporting currency is Qatari Riyal or,
    - 3) '1.00%' if the reporting currency is Hong Kong Dollar or,
    - 4) '25%' otherwise.
  - (ii) 'B' by:
    - 1) '0%' if the reporting currency is United States Dollar or,
    - 2) '25%' otherwise.
  - (iii) 'C' by:
    - 1) '5.00%' if the reporting currency is United States Dollar or,
    - 2) '25%' otherwise.
  - (iv) 'D' by:
    - 1) '1.00%' if reporting currency is United States Dollar or,
    - 2) '25%' otherwise.
  - (v) 'E' by:
    - 1) '0.39%' if the reporting currency is Danish Krone or,
    - 2) '1.81%' if the reporting currency is Bulgarian Lev or,
    - 3) '2.18%' if the reporting currency is West African CFA Franc or,
    - 4) '1.96%' if the reporting currency is Central African CFA Franc or,
    - 5) '2.00%' if the reporting currency is Comorian Franc or,
    - 6) '25%' otherwise.
  - (vi) 'F' by:
    - 1) '0.39%' if reporting currency is Euro or,
    - 2) '25%' otherwise.
  - (vii) 'G' by:
    - 1) '1.81%' if reporting currency is Euro or,
    - 2) '25%' otherwise.
  - (viii) 'H' by:
    - 1) '2.18%' if reporting currency is Euro or,
    - 2) '25%' otherwise.
  - (ix) 'I' by:
    - 1) '1.96%' if reporting currency is Euro or,
    - 2) '25%' otherwise.
  - (x) 'J' by:
    - 1) '2.00%' if reporting currency is Euro or,
    - 2) '25%' otherwise.
- b) All assets and liabilities (except the risk margin) whose value is subject to currency risk shocks shall be reported on a basis consistent with that used for purposes of economic

balance sheet reporting. These assets and liabilities shall include currency risk exposures determined by application of the 'look-through approach' calculated in accordance with criteria prescribed in section B7 for the following items:

- (i) Collective investment vehicles and other investments packaged as funds, including related undertakings used as investment vehicles;
  - (ii) Segregated accounts assets and liabilities;
  - (iii) Deposit asset and liabilities;
  - (iv) Assets and liabilities held by ceding insurers or under retrocession;
  - (v) Other sundry assets and liabilities; and
  - (vi) Derivatives.
- c) Where the reporting currency is United States Dollar, the capital factor  $\chi_i$  charge shall be reduced to:
- (i) 0.00% for Bermuda Dollar;
  - (ii) 5.00% for Qatari Riyal;
  - (iii) 1.00% for Hong Kong Dollar.
- d) Where the reporting currency is Bermuda Dollar the capital factor  $\chi_i$  charge shall be reduced to 0.00% for United States Dollar.
- e) Where the reporting currency is Qatari Riyal the capital factor  $\chi_i$  charge shall be reduced to 5.00% for United States Dollar.
- f) Where the reporting currency is Hong Kong Dollar the capital factor  $\chi_i$  charge shall be reduced to 1.00% for United States Dollar.
- g) Where the reporting currency is Euros, the capital factor  $\chi_i$  shall be reduced to:
- (i) 0.39% for Danish Krone;
  - (ii) 1.81% for Bulgarian Lev;
  - (iii) 2.18% for West African CFA Franc;
  - (iv) 1.96% for Central African CFA Franc;
  - (v) 2.00% for Comorian Franc.
- h) Where the reporting currency is Danish Krone the capital factor  $\chi_i$  charge shall be reduced to 0.39% for the Euro.
- i) Where the reporting currency is Bulgarian Lev the capital factor  $\chi_i$  charge shall be reduced to 1.81% for the Euro.

- j) Where the reporting currency is West African CFA Franc the capital factor  $\chi_i$  charge shall be reduced to 2.18% for the Euro.
- k) Where the reporting currency is Central African CFA Franc the capital factor  $\chi_i$  charge shall be reduced to 1.96% for the Euro.
- l) Where the reporting currency is Comorian Franc the capital factor  $\chi_i$  charge shall be reduced to 2.00% for the Euro.
- m) Insurance groups are to report currencies representing at least 95% of their economic balance sheet liabilities; and
- n) Amounts are to be reported on an EBS Valuation basis.

## D24. CONCENTRATION RISK

### *Background*

- D24.1 The concentration risk charge is based on asset counterparty exposures as reported on the Form 1EBS. It represents the risk of losses due to asset concentrations.
- D24.2 The charge is calculated by aggregating all the Asset Type, Bond / Mortgage Loan Type (if applicable), BSCR Rating (if applicable) and Asset Value together and assigning the values to the respective fixed income, equity, credit capital factor charge.

### *Concentration Risk Capital Charge*

- D24.3 The concentration risk charge calculation can be summarised by the following formula:

$$C_{\text{Concentration}} = \sum_i \chi_i \times \text{Concastclass}_i \quad \text{where}$$

$\chi_i$  = the capital charge factors supplied by BMA for each type  $\text{Concastclass}_i$  of and

$\text{Concastclass}_i$  = value of corresponding asset in Asset Class.

### *Items*

#### a) Cash and Cash Equivalents

| Line Item |               | Description                      |
|-----------|---------------|----------------------------------|
| 1         | BSCR rating 0 | Based on Schedule XXIA, column D |
| 2         | BSCR rating 1 | Based on Schedule XXIA, column D |
| 3         | BSCR rating 2 | Based on Schedule XXIA, column D |
| 4         | BSCR rating 3 | Based on Schedule XXIA, column D |
| 5         | BSCR rating 4 | Based on Schedule XXIA, column D |
| 6         | BSCR rating 5 | Based on Schedule XXIA, column D |
| 7         | BSCR rating 6 | Based on Schedule XXIA, column D |
| 8         | BSCR rating 7 | Based on Schedule XXIA, column D |
| 9         | BSCR rating 8 | Based on Schedule XXIA, column D |

#### b) Corporate & Sovereign Bonds

| Line Item |               | Description                      |
|-----------|---------------|----------------------------------|
| 1         | BSCR rating 0 | Based on Schedule XXIA, column D |
| 2         | BSCR rating 1 | Based on Schedule XXIA, column D |
| 3         | BSCR rating 2 | Based on Schedule XXIA, column D |
| 4         | BSCR rating 3 | Based on Schedule XXIA, column D |
| 5         | BSCR rating 4 | Based on Schedule XXIA, column D |
| 6         | BSCR rating 5 | Based on Schedule XXIA, column D |
| 7         | BSCR rating 6 | Based on Schedule XXIA, column D |

| Line Item |               | Description                      |
|-----------|---------------|----------------------------------|
| 8         | BSCR rating 7 | Based on Schedule XXIA, column D |
| 9         | BSCR rating 8 | Based on Schedule XXIA, column D |

c) Residential Mortgage- Backed Securities

| Line Item |               | Description                      |
|-----------|---------------|----------------------------------|
| 1         | BSCR rating 0 | Based on Schedule XXIA, column D |
| 2         | BSCR rating 1 | Based on Schedule XXIA, column D |
| 3         | BSCR rating 2 | Based on Schedule XXIA, column D |
| 4         | BSCR rating 3 | Based on Schedule XXIA, column D |
| 5         | BSCR rating 4 | Based on Schedule XXIA, column D |
| 6         | BSCR rating 5 | Based on Schedule XXIA, column D |
| 7         | BSCR rating 6 | Based on Schedule XXIA, column D |
| 8         | BSCR rating 7 | Based on Schedule XXIA, column D |
| 9         | BSCR rating 8 | Based on Schedule XXIA, column D |

d) Commercial Mortgage-Backed Securities/Asset-Backed Securities

| Line Item |               | Description                      |
|-----------|---------------|----------------------------------|
| 1         | BSCR rating 0 | Based on Schedule XXIA, column D |
| 2         | BSCR rating 1 | Based on Schedule XXIA, column D |
| 3         | BSCR rating 2 | Based on Schedule XXIA, column D |
| 4         | BSCR rating 3 | Based on Schedule XXIA, column D |
| 5         | BSCR rating 4 | Based on Schedule XXIA, column D |
| 6         | BSCR rating 5 | Based on Schedule XXIA, column D |
| 7         | BSCR rating 6 | Based on Schedule XXIA, column D |
| 8         | BSCR rating 7 | Based on Schedule XXIA, column D |
| 9         | BSCR rating 8 | Based on Schedule XXIA, column D |

e) Bond Mutual Funds

| Line Item |               | Description                      |
|-----------|---------------|----------------------------------|
| 1         | BSCR rating 0 | Based on Schedule XXIA, column D |
| 2         | BSCR rating 1 | Based on Schedule XXIA, column D |
| 3         | BSCR rating 2 | Based on Schedule XXIA, column D |
| 4         | BSCR rating 3 | Based on Schedule XXIA, column D |
| 5         | BSCR rating 4 | Based on Schedule XXIA, column D |
| 6         | BSCR rating 5 | Based on Schedule XXIA, column D |
| 7         | BSCR rating 6 | Based on Schedule XXIA, column D |
| 8         | BSCR rating 7 | Based on Schedule XXIA, column D |
| 9         | BSCR rating 8 | Based on Schedule XXIA, column D |

f) Preferred Shares

| Line Item |               | Description                      |
|-----------|---------------|----------------------------------|
| 1         | BSCR rating 1 | Based on Schedule XXIA, column D |
| 2         | BSCR rating 2 | Based on Schedule XXIA, column D |
| 3         | BSCR rating 3 | Based on Schedule XXIA, column D |
| 4         | BSCR rating 4 | Based on Schedule XXIA, column D |
| 5         | BSCR rating 5 | Based on Schedule XXIA, column D |
| 6         | BSCR rating 6 | Based on Schedule XXIA, column D |
| 7         | BSCR rating 7 | Based on Schedule XXIA, column D |
| 8         | BSCR rating 8 | Based on Schedule XXIA, column D |

g) Mortgage Loans

| Line Item |                                     | Description                      |
|-----------|-------------------------------------|----------------------------------|
| 1         | Insured/Guaranteed Mortgages        | Based on Schedule XXIA, column D |
| 2         | Other Commercial and Farm Mortgages | Based on Schedule XXIA, column D |
| 3         | Other Residential Mortgages         | Based on Schedule XXIA, column D |
| 4         | Mortgages Not In Good Standing      | Based on Schedule XXIA, column D |

h) Other Asset Classes

| Line Item |   | Description                      |
|-----------|---|----------------------------------|
| 1         | Infrastructure                                | Based on Schedule XXIA, column D |
| 2         | Listed Equity Securities in Developed Markets | Based on Schedule XXIA, column D |
| 3         | Other Equities                                | Based on Schedule XXIA, column D |
| 4         | Strategic Holdings                            | Based on Schedule XXIA, column D |
| 5         | Duration Based                                | Based on Schedule XXIA, column D |
| 6         | Letters of Credit                             | Based on Schedule XXIA, column D |
| 7         | Advances to Affiliates –                      | Based on Schedule XXIA, column D |
| 8         | Policy Loans                                  | Based on Schedule XXIA, column D |
| 9         | Equity Real Estate 1                          | Based on Schedule XXIA, column D |
| 10        | Equity Real Estate 2                          | Based on Schedule XXIA, column D |
| 11        | Collateral Loans                              | Based on Schedule XXIA, column D |

### ***Instructions Affecting Concentration Risk***

- a) *Concastclass<sub>i</sub>* shall only apply to an insurance group's ten largest counterparty exposures based on the aggregate of all assets relating to that counterparty;
- b) A counterparty exposure shall be reported on the valuation of individually underlying assets (i.e., determined by application of the 'look-through'), approach (as described in B7) for all amounts reported on the balance sheet;
- c) A counterparty shall include all related or connected counterparties captured by either of the following criteria:
  - (i) Controller relationship: if a counterparty, directly or indirectly, has control of (as a result of its majority shareholding or effective management) which it is a subsidiary company; or
  - (ii) Economic interdependence: if one of the counterparties were to experience financial difficulties which directly or indirectly affect the ability of any or all of the remaining counterparties to perform their financial obligations (e.g., where a counterparty becomes unable to fund or repay certain financial contractual obligations, and as a result, other counterparties, are likely to be unable to fund or repay certain obligations imposed on them);
- d) Amounts are to be reported on an EBS valuation basis.



## D25. PREMIUM RISK

### *Background*

- D25.1 The premium risk charge is based on net premiums exposure measure for the following calendar year by predefined statutory lines of business, and if available, reporting net premiums exposure measure by predefined statutory geographic locations. Note that although net premiums exposure measure for Property Catastrophe business are inputted in this section, they do not enter the calculation of the premium risk charge. All capital requirements pertaining to catastrophe exposures are explicitly calculated in the Catastrophe Risk section.
- D25.2 The first step of the calculation applies a statutory line of business-specific premium risk capital factor to the respective net premiums exposure measure amounts.
- D25.3 The second step of the calculation applies a sum squared diversification credit based on 18 geographic zones. Note that this is not a necessary requirement in the premium risk calculation and if used, this is not required for all lines of business.
- D25.4 In the Premium risk calculation, a correlation adjustment is determined to reflect the overall diversification of the premium risk. Finally, there is a further adjustment to reflect the fact that some of the lines of business premiums, other than Property Catastrophe, include a loading for losses resulting from natural catastrophes. The appropriate risk charge for this portion of the premiums is calculated in the Catastrophe Risk section; the premium risk charge is reduced to avoid double counting.

### *Premium Risk Capital Charge*

$$C_{Premium} = \sqrt{\sum_{i,j} CorrPrem_{i,j} \times C_i \times C_j} - avgpremcap \times \frac{avgannloss}{catlossratio}; \text{ where-}$$

- $CorrPrem_{i,j}$  = the correlation factors of the premium risk module correlation matrix;
- $i,j$  = the sum of the different terms should cover all possible combinations of  $i$  and  $j$ ; and
- $C_i$  and  $C_j$  = risk charge  $i$  and risk charge  $j$  which are replaced by the following:  
 $C_{premium_i}$ ,  $C_{premium_j}$  by BMA-supplied premium risk capital charge;
- $avgpremcap$  = weighted average premium risk capital charge factor for  $BaseExp_i$ , as defined below, (excluding the Property Catastrophe line of business and after correlation adjustment and allowing for geographic diversification);

*avgannloss* = average annual loss estimated with catastrophe models;  
*catlossratio* = expected industry average catastrophe loss ratio;

$C_{prem_i} = [(\chi_i^1 \times BaseExp_i) + (\chi_i^2 \times FPEexisting_i) + (\chi_i^3 \times FPFfuture_i)] \frac{ExposureMeasure_i}{geolineprem_i}$  where—

$\chi_i^1$  = individual *BaseExp<sub>i</sub>* risk capital charge factor;  
*BaseExp<sub>i</sub>* = the greater of premium written in reporting period and the estimate of the net premiums to be earned by the insurance group during the next 12-month accounting period;  
*geolineprem<sub>i</sub>* = geographic diversification of premium exposure measure for line of business *i* ;  
 $\chi_i^2$  = individual *FPEexisting<sub>i</sub>* risk capital charge factor;  
*FPEexisting<sub>i</sub>* = expected present value of premiums to be earned by the insurance group after the next 12-month reporting period for existing qualifying multi-year insurance policies for line of business *i* ;  
 $\chi_i^3$  = individual *FPFuture<sub>i</sub>* risk capital charge factor;  
*FPFuture<sub>i</sub>* = expected present value of net premiums to be earned by the insurance group after the next 12-month reporting period for qualifying multi-year insurance policies where the initial recognition date falls in the following 12-months for line of business *i* ;  
*ExposureMeasure<sub>i</sub>* = the sum of *BaseExp<sub>i</sub>*, *FPEexisting<sub>i</sub>* and *FPFuture<sub>i</sub>*

#### Items

a) Lines of Business – as categorised by the 24 predefined statutory lines of business.

| Line Item |                                | Description  |
|-----------|--------------------------------|--|
| 1         | Gross Premium Exposure Measure | Column (1): Gross premium exposure measure by predefined statutory line of business and geographic zone, as reported on Schedule IVD, column (G), lines (1) to (24). |
| 2         | Net Premium Exposure Measure   | Column (2): Net premium exposure measure by predefined statutory line of business and geographic zone, as reported on Schedule IVD, column (F) lines (1) to (24).    |
| 3         | Geo Diversified Written        | Column (3): Net premium exposure measure by predefined statutory line of business and geographic zone, as reported on Schedule IVE, lines (1) to (24).               |
| 4         | Geo Diversified SCALAR         | Column (4) Geographic Diversified Written (3) divided by Net Premium Exposure Measure (2)  |

| Line Item |                                    | Description  |
|-----------|------------------------------------|--|
| 5         | Geo Diversified Net Base Exposure  | Column (5) Net base exposure by predefined statutory line of business as reported on Schedule IVD column (C) lines (1) to (24), multiplied by Geo Diversified SCALAR (4) |
| 6         | Geo Diversified Net FP (Existing)  | Column (6) Net FP (Existing) by predefined statutory line of business as reported on Schedule IVD column (D) lines (1) to (24), multiplied by Geo Diversified SCALAR (4) |
| 7         | Geo Diversified Net FP (Future)    | Column (7) Net FP (Future) by predefined statutory line of business as reported on Schedule IVD column (E) lines (1) to (24), multiplied by Geo Diversified SCALAR (4)   |
| 8         | Capital Factor 1 Net Base Exposure | Column (8): Supplied by the BMA; premium charge factors for individual lines of business.  |
| 9         | Capital Factor 2 Net FP (Existing) | Column (9): Supplied by the BMA; premium charge factors for individual lines of business.  |
| 10        | Capital Factor 3 Net FP (Future)   | Column (10): Supplied by the BMA; premium charge factors for individual lines of business.   |
| 11        | Required Capital                   | Column (11): Calculated using [column (5) x column (8)]+[column (6) x column (9)]+[column (7) x column (10)]; premium charge amounts for individual lines of business.   |

- b) Correlation Adjustment Calculation – Calculates a factor that determines how much credit is given for diversification of premium risk across all lines of business other than Property Catastrophe.

| Line Item |                                  | Description   |
|-----------|----------------------------------|---|
| 1         | Required Capital                 | Row(i): Total from (a) column 11 above                              |
| 2         | Correlation Adjustment           | Row(ii): Reduction from Correlation Matrix for diversified premiums |
| 3         | Capital Charge After Correlation | Row(iii): Calculated using [line 1 less line 2]                     |

- c) Catastrophe Premium Adjustment Calculation – Calculation reflects a reduction to the required premium risk capital for the ‘catastrophe-exposed’ portion of the premium that is otherwise contemplated within the catastrophe risk capital charge (See Catastrophe Risk section for further information).

| Line Item |  | Description   |
|-----------|--|---|
| 1         | Average Annual Loss Excluding Property Catastrophe (AAL) | Row (i): Pulled from Catastrophe Risk section; the expected net natural catastrophe loss (after reinsurance), including reinstatement premiums, for annual aggregate exposure to all risks and perils other than those relating to the Property Catastrophe line of business. See Catastrophe Risk section for further information. |

| Line Item |                                 | Description   |
|-----------|---------------------------------|---|
| 2         | Industry Catastrophe Loss Ratio | Row (ii): Pulled from Catastrophe Risk section; used to calculate the embedded catastrophe premiums from lines of business other than Property Catastrophe. See Catastrophe Risk section for further information.                           |
| 3         | Average Capital Factor          | Row (iii): Calculated using $X / \text{Total}$ from (a) column (5) above; where X is the 'Capital Charge After Correlation' in (b) Row (iii) but with the Required Capital in (b) Row (1) recalculated as [(a) column (5) x (a) column (8)] |
| 4         | Catastrophe Premium Adjustment  | Row(iv): Calculated using [Row (i) / Row (ii) x Row (iii)].   |

- d) Required Capital Charge Adjusted for Catastrophe Premium – Calculated using [(b) - (c)]; the premium risk capital charge (after correlation factor and catastrophe adjustment) is carried to the Summary section.

### ***Instructions Affecting Premium Risk***

D25.4a All reported net premium exposure measures as prescribed in Schedule IVD that are subject to capital charges within the premium risk charge shall be included;

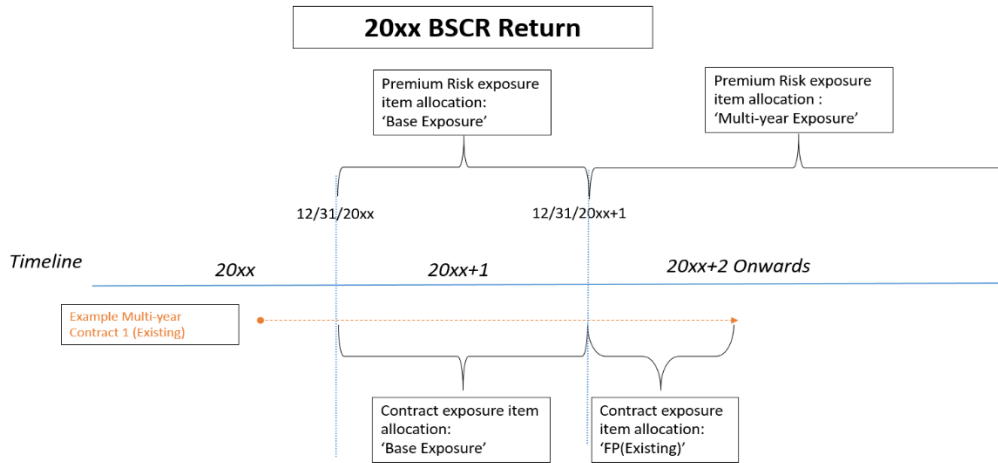
D25.4b 'Qualifying multi-year insurance policies' means those insurance policies with (an earning) term longer than 12 months after allowing for the criteria prescribed by the Authority;

D25.4c All net premium exposure measures by statutory Line of Business shall be reported on a basis consistent with that prescribed in Schedule IVD;

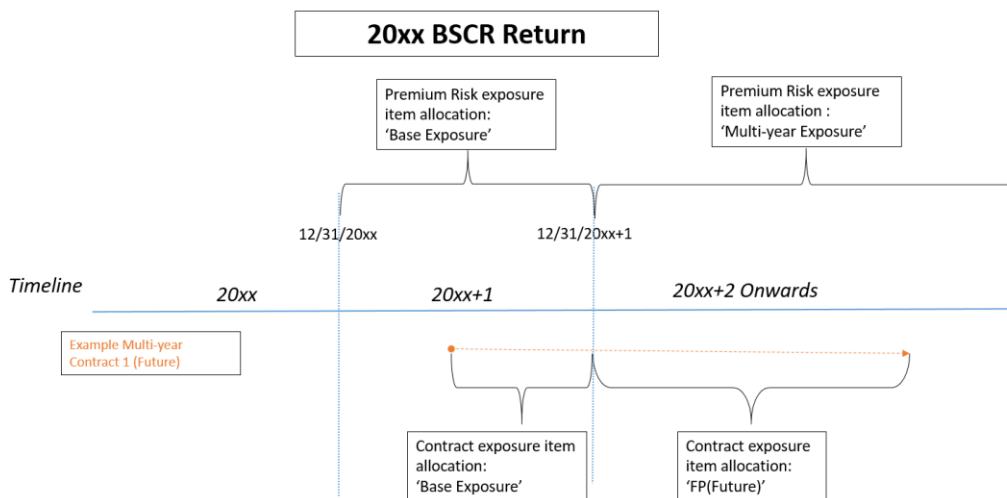
D25.4d An insurance group may provide net premium exposure measures for all statutory Lines of General Business, or for particular statutory Lines of General Business, split by geographic zone as set out in Table 6D.  $geolineprem_i$  is then derived from the total premium for that Line of Business by reducing the total by 25% times  $\frac{\sum x_i^2}{(\sum x_i)^2}$

where  $x_i$  = the net premium exposure measure in the Line of Business for  $Zone_i$ ; and where the summation covers all zones

D25.4e A graphical example of the earned premium allocation of a hypothetical existing qualifying multi-year contract is provided below. Premium earned during the next 12 months is classified as 'Base Exposure' while premium earned after the next 12-month period is classified as 'FP (Existing)'.



D25.4f A graphical example of the earned premium allocation of a hypothetical future qualifying multi-year contract is provided below. Premium earned during the next 12 months is classified as 'Base Exposure' while premium earned after the next 12-month period is classified as 'FP (future)'.



## D26. RESERVE RISK

### *Background*

- D26.1 The reserve risk charge is based on the statutory net loss and loss expense provisions (on an EBS basis) by predefined statutory lines of business, and if available, reporting net technical provision by predefined statutory geographic locations.
- D26.2 The first step of the calculation applies a line of business specific reserve risk capital factor to the respective reserve amounts.
- D26.3 In the second step of the calculation applies sum squared diversification credit based on 18 geographic zones. Note that this is not a necessary requirement in the reserve risk calculation and if used, this is not required for all lines of business.
- D26.4 In the Reserve risk calculation, a correlation adjustment is determined to reflect the overall diversification of the reserve risk.

### *Reserve Risk Capital Charge*

- D26.5 The reserve risk charge calculation can be summarised by the following formula:

$$C_{reserve} = \sqrt{\sum_{i,j} Corr Re serve_{i,j} \times C_i \times C_j}$$

Where—

- $Corr Re serve_{i,j}$  = the correlation factors of the reserve risk module correlation matrix;
- $i,j$  = the sum of the different terms should cover all possible combinations of i and j;
- $C_i$  and  $C_j$  = risk charge  $i$  and risk charge  $j$  which are replaced by the following:  
 $C_{reserve_i}$ ,  $C_{reserve_j}$  by BMA- supplied reserve risk capital charge;

$$C_{reserve_i} = \beta_i \times geolinersvs_i$$

Where—

- $\beta_i$  = individual  $geolinersvs_i$  risk capital charge factor;
- $geolinersvs_i$  = geographic diversification of reserves for individual Lines of Business  $i$  ;

**Items**

- a) Lines of Business – as categorised by the 24 predefined statutory lines of business.

| Line Item |  | Description  |
|-----------|--|--|
| 1         | Gross Loss and Loss Expense Provisions   | Column (1): Gross loss and loss expense provisions by predefined statutory line of business, as reported on Schedule III, lines (1) to (24). Total must tie to the Gross Loss and Loss Expense Provisions of the EBS (Form 1EBS, line 17 (a)).   |
| 2         | Net Loss and Loss Expense Provisions     | Column (2): Net loss and loss expense provisions by predefined statutory line of business and geographic zone, as reported on Schedule IIIA, lines (1) to (24). Total must tie to the Net Loss and Loss Expense Provisions of the EBS (Form 1EBS, line 17(d) and should be input on an undiscounted basis. |
| 3         | Geo Net Loss and Loss Expense Provisions | Column (3): Net loss and loss expense provisions by predefined statutory line of business and geographic zone, as reported on Schedule IIIA, lines (1) to (24). Total must tie to the Net Loss and Loss Expense Provisions of the EBS (Form 1EBS, line 17(d) and should be input on an EBS basis.          |
| 4         | Capital Factor                           | Column (4): Supplied by the BMA; reserve charge factors for individual lines of business.  |
| 5         | Required Capital                         | Column (5): Calculated using [column (3) x column (4)]; reserve charge amounts for individual lines of business.   |

- b) Correlation Adjustment Calculation – Calculates a factor that determines how much credit is given for diversification of reserve risk across all lines of business.

| Line Item |                                  | Description  |
|-----------|----------------------------------|--|
| 1         | Required Capital                 | Total from (a) column 5 above                              |
| 2         | Correlation Adjustment           | Reduction from Correlation Matrix for diversified reserves |
| 3         | Capital Charge After Correlation | Calculated using [line 1 less line 2]                      |

- c) Required Capital Charge – Calculated using [(Total of column (5) of (a)) - (Correlation Adjustment)]; the reserve capital charge (after correlation adjustment) is carried to the Summary section.

***Instructions Affecting Reserve Risk***

- D26.5a All reported net loss and loss expense provisions for the relevant year by statutory Line of Business as prescribed in this schedule are subject to capital charges within the reserve risk charge and shall be included;
- D26.5b All reported net loss and loss expense provisions by statutory Line of Business shall be reported on a basis consistent with that used for purposes of statutory financial reporting;
- D26.5c An insurance group may provide loss and loss expense provisions exposure for all statutory Lines of General Business, or for particular statutory Lines of General Business, split by geographic zone as set out in Table 6D.  $geolinerivs_i$  is then derived from the total loss and loss expense provisions for that Line of Business by reducing the total by 25% times  $\frac{\sum x_i^2}{(\sum x_i)^2}$  where  $x_i$  = best estimate net loss and loss expense provisions in that line of business for  $Zone_i$ ; and where the summation covers all zones; and
- D26.5d Amounts are to be reported on a consolidated EBS basis



## D27. CREDIT RISK

### Background

D27.1 Credit risks are partitioned into four categories: accounts and premiums receivable, all other receivables, particulars of reinsurance balances (current and future), and counterparty default risk for over-the-counter derivatives.

D27.2 Particulars of reinsurance balances is based on the greater of:

- Current reinsurance balances receivable (as reported on Form 1EBS lines 11(e) Reinsurance Balances Receivable, 12(c) Funds Held by Ceding Reinsurers, which are not reported on Schedule IIA, and 17(c) Total Reinsurance Recoverable Balance); and
- Future reinsurance balances receivable (as calculated on the Credit Risk Schedule).

This approach allows for new insurance groups that have not had claims and allows for a more reflective approach of reinsurance exposures in stressed circumstances.

D27.3 Where applicable, the amounts must reconcile to the appropriate line(s) of the insurance group's Form 1EBS or to the schedules prescribed by or under the Prudential Standard Rules.

### Credit Risk Capital Charge

D27.4 The credit risk charge calculation can be summarised by the following formula:

$$C_{credit} = \sum_i \delta_i \times debtor_i \times \mu_r + CCROTC$$

$\delta_i$  = BMA-supplied credit risk capital charge factor for type of *debtor<sub>i</sub>*;  
*debtor<sub>i</sub>* = receivable amount from *debtor<sub>i</sub>* net of any collateral in favour of the insurer;  
 $\mu_r$  = additional diversification adjustment factor applied to reinsurance balances only taking into consideration diversification by number of reinsurers, equal to 40%.  
 = counterparty default risk for over-the-counter derivatives calculated as per the following formula:

CCROTC

$$CCROTC = \sum_i \text{Max}(0, MVDerivativeP_i - (1 - \beta_i) \text{Min}(MVderivativeP_i, MVCollateral_i)) \times \alpha_i$$

*MVDerivativeP<sub>i</sub>* = market value of over-the-counter derivatives with positive market values and BSCR rating *i*,  
 $\beta_i$  = BMA-supplied collateral factor;  
 $\alpha_i$  = BMA-supplied capital factor for the BSCR rating *i*;  
*MVCollateral* = market value of collateral of over-the-counter derivatives with positive market values and BSCR rating *i*.

**Items**

a) Accounts and Premiums Receivable

| Line Item  | Statement Source – The Rules   |
|--|--|
| 1 In course of collection  | Based on Form 1EBS, line 10(a).  |
| 2 Deferred Not Yet Due   | Based on Form 1, line 10(b).   |
| 3 Receivables from retrocessional contracts<br>Less: Collateralised balances | Based on Form 1EBS, line 10(c) less Notes to Form 1EBS.<br><br>Collateralised balances are all collaterals issued in favour of the group members relating to accounts and premiums receivable. Assets accounted in Form 1EBS, line (34) should not be included here. |

b) All Other Receivables

| Line Item                                    | Statement Source –              |
|--|---------------------------------|
| 1 Advances to affiliates                     | Based on Form 1EBS, line 4(g).  |
| 2 Accrued investment income                  | Based on Form 1EBS, line 9.     |
| 3 Balances Receivable on Sale of Investments | Based on Form 1EBS, line 13(f). |

- c) (i) Particulars of reinsurance balances by BSCR rating - (i) amounts receivable on account of policies of reinsurance from any person, whether an affiliate or not, should be included; (ii) any amount included in ‘Accounts and Premiums Receivable’ and ‘Funds Held by Ceding Reinsurers’ should not be included; (iii) all uncollectible amounts, as determined by the insurance group, should be deducted.

| Line Item                           | Statement Source – The Rules     |
|-------------------------------------|----------------------------------|
| 1 BSCR rating 0                     | Based on Schedule XVIII column E |
| 2 BSCR rating 1                     | Based on Schedule XVIII column E |
| 3 BSCR rating 2                     | Based on Schedule XVIII column E |
| 4 BSCR rating 3                     | Based on Schedule XVIII column E |
| 5 BSCR rating 4                     | Based on Schedule XVIII column E |
| 6 BSCR rating 5                     | Based on Schedule XVIII column E |
| 7 BSCR rating 6                     | Based on Schedule XVIII column E |
| 8 BSCR rating 7                     | Based on Schedule XVIII column E |
| 9 BSCR rating 8                     | Based on Schedule XVIII column E |
| 10 Less: Diversification adjustment | Based on Schedule XVIII column E |
| 11 Total                            | Sum of c(i) 1 to 10              |

- c) (ii) Particulars of reinsurance balances for future premiums by BSCR rating

| Line Item |                                     | Statement Source – The Rules  |  |
|-----------|-------------------------------------|---|--|
| 1         | Premium Risk Capital Charge (Gross) | Based on Premium Risk Capital Charge calculated on a gross basis, in line with the prescription in (f). |  |
| 2         | Premium Risk Capital Charge (Net)   | Based on Premium Risk Capital Charge as calculated in section D25                                       |  |
| 3         | Premium Risk Capital Charge (Ceded) | Calculated using [line 1 less line 2]   |  |
| Line Item |                                     | Statement Source – The Rules  | Debtor Allocation                                    |
| 4         | BSCR rating 0                       | c(i)1 BSCR Rating 0 / c(i) Total of BSCR Rating 0 – 8   | Based on row (3) Premium Risk Capital Charge (Ceded) |
| 5         | BSCR rating 1                       | c(i)1 BSCR Rating 1 / c(i) Total of BSCR Rating 0 – 8   | Based on row (3) Premium Risk Capital Charge (Ceded) |
| 6         | BSCR rating 2                       | c(i)1 BSCR Rating 2 / c(i) Total of BSCR Rating 0 – 8   | Based on row (3) Premium Risk Capital Charge (Ceded) |
| 7         | BSCR rating 3                       | c(i)1 BSCR Rating 3 / c(i) Total of BSCR Rating 0 – 8   | Based on row (3) Premium Risk Capital Charge (Ceded) |
| 8         | BSCR rating 4                       | c(i)1 BSCR Rating 4 / c(i) Total of BSCR Rating 0 – 8   | Based on row (3) Premium Risk Capital Charge (Ceded) |
| 9         | BSCR rating 5                       | c(i)1 BSCR Rating 5 / c(i) Total of BSCR Rating 0 – 8   | Based on row (3) Premium Risk Capital Charge (Ceded) |
| 10        | BSCR rating 6                       | c(i)1 BSCR Rating 6 / c(i) Total of BSCR Rating 0 – 8   | Based on row (3) Premium Risk Capital Charge (Ceded) |
| 11        | BSCR rating 7                       | c(i)1 BSCR Rating 7 / c(i) Total of BSCR Rating 0 – 8   | Based on row (3) Premium Risk Capital Charge (Ceded) |
| 12        | BSCR rating 8                       | c(i)1 BSCR Rating 8 / c(i) Total of BSCR Rating 0 – 8   | Based on row (3) Premium Risk Capital Charge (Ceded) |
| 13        | Less: Diversification adjustment    |   | Based on Schedule VIII column E                      |

### *Instructions Affecting Credit Risk*

- D27.5 All accounts and premiums receivable and all other receivables that are subject to capital charges within the credit risk charge shall be included;
- D27.6 All accounts and premiums receivable, reinsurance balances receivables, all other receivables, and reinsurance recoverable balances shall be reported on a basis consistent with that used for purposes of statutory financial reporting;
- D27.7 ‘Collateralized balances’ for the purposes of this paragraph shall mean assets pledged in favor of the insurance group relating to accounts and premiums receivable as prescribed by the BMA Capital charge factors for  $debtor_i$  ;

D27.8 Particulars of reinsurance balances shall be the greater of paragraphs D27.9 and D27.10 below

D27.9 Particulars of reinsurance balances for current year by BSCR rating are as follows:

- a) The net qualifying exposure which is comprised of reinsurance balances receivable and reinsurance balances recoverable, less the corresponding reinsurance balances payable and other payables less the qualifying collateral issued in favor of the insurance group in relation to the reinsurance balances;
- b) The ‘net qualifying exposure’ referenced in paragraph D27.9a) above shall be subject to the BMA-prescribed credit risk capital factor;
- c) The total capital requirement relating to the reinsurance balances shall be reduced by a diversification adjustment of up to a maximum of 40%;
- d) The ‘diversification’ adjustment’ referenced in paragraph D27.9c) above shall be determined by calculating 40% multiplied by 1 minus the ratio of the largest net reinsurance exposure, on an individual reinsurer basis, to total net reinsurance exposure;

D27.10 Particulars of reinsurance balances for future premium by BSCR rating are as follows:

- a) The Premium Risk Capital Charge (Gross), as prescribed in D27.10(a) less the Premium Risk Capital Charge (Net), as prescribed in D25, shall be referred to as ‘Premium Risk Capital Charge (Ceded)’. Such amount shall be allocated to the type of debtor ( *debtor<sub>i</sub>* ) by BSCR rating Net Qualifying Exposure Measure as reported on Schedule XVIII;
- b) The Premium Risk Capital Charge (Gross) is calculated in the same manner as Premium Risk Capital Charge (Net) using the Gross Premium Exposure Measure (Schedule IVD, column G) rather than the Net Premium Exposure Measure (Schedule IVD, column F) as the input *ExposureMeasure<sub>i</sub>*. *ExposureMeasure<sub>i</sub>* is allocated to *BaseExp<sub>i</sub>*, *FPExisting<sub>i</sub>* and *FPFuture<sub>i</sub>* for the Premium Risk Capital Charge (Gross) calculation in the same proportions as in the Premium Risk Capital Charge (Net) calculation;
- c) The Premium Risk Capital Charge (Ceded) shall be subject to the BMA prescribed credit risk capital charge factor;

- d) The total capital requirement relating to the reinsurance balances shall be reduced by a diversification adjustment of up to a maximum of 40%; and
- e) The 'diversification' adjustment' referenced in paragraph D27.10D) above shall be determined by calculating 40% multiplied by 1 minus the ratio of the largest net reinsurance exposure, on an individual reinsurer basis, to total net reinsurance exposure; and

D27.11

Amounts are to be reported on an EBS valuation basis

## D28. CATASTROPHE RISK

### *Background*

- D28.1 The catastrophe risk charge is based on group-specific catastrophe risk modelling output. All exposures and premiums used in the Probable Maximum Loss (PML) and Average Annual Loss (AAL) calculations should include amounts for second, third, and subsequent events or losses following the initial loss event. Modeled losses should include demand surge, storm surge, fire following earthquakes and secondary uncertainty.
- D28.2 The calculated catastrophe risk charge has two components. The first component is the average premium shortfall for the top 1% worst case scenarios (i.e. at the 99.0% TVaR level). The second component is a credit risk charge for reinsurance recoverables under the 1% worst case scenarios. Since the PML calculations use annual aggregate exposure for all risks the formula uses an imputed Total Catastrophe Premium in its calculation of the premium shortfall component. In addition to actual Property Catastrophe Premiums, this imputed Total Catastrophe Premium is based on the AAL divided by the industry catastrophe loss ratio as determined by the BMA.

### *Catastrophe Risk Capital Charge*

- D28.3 The catastrophe risk charge calculation can be summarised by the following formula:

$$C_{catastrophe} = NetPML - Netcatprem + CR_{PML}; \text{ Where —}$$

- $NetPML$  = Net Probable Maximum loss;
- $Netcatprem$  = Property catastrophe premium + (modeled AAL) / (estimated industry catastrophe loss ratio of 40.0%); and
- $CR_{PML}$  = Credit Risk charge associated with reinsurance recoveries of ceded catastrophe losses is calculated as {(Gross PML; minus Net PML; minus arrangements with respect to property catastrophe recoverables); times (Credit risk charge, equal to 10%, associated with reinsurance recoveries of ceded catastrophe losses)}:
- All reported Net PML, Gross PML, AAL excluding property catastrophe, property catastrophe premium and arrangements with respect to property catastrophe recoverables that are subject to capital charges herein shall be included; and
  - The amount of collateral and other funded arrangements with respect to property catastrophe recoverables shall be reported and reduced by 2% to account for the market risk associated with the underlying collateral assets.

*Items*

- a) Gross Probable Maximum Loss – based on the insurance group’s catastrophe model; probable maximum gross natural catastrophe loss (prior to reinsurance) at the 99.0% TVaR level for annual aggregate exposure to all related risks and perils, including reinstatement premiums, for the year following the ‘relevant year’.
- b) Net Probable Maximum Loss – based on the insurance group’s catastrophe model; probable maximum net natural catastrophe loss (after reinsurance) at the 99.0% TVaR level for annual aggregate exposure to all related risks and perils, including reinstatement premiums, for the year following the ‘relevant year’.
- c) Average Annual Loss Excluding Property Catastrophe (AAL) – based on the insurance group’s catastrophe model; the expected net natural catastrophe loss (after reinsurance), including reinstatement premiums, for annual aggregate exposure to all related risks and perils other than those relating to the Property Catastrophe line of business for the year following the ‘relevant year’. The AAL should be calculated from the same underlying loss distribution used to determine the Gross PML and Net PML (excluding the property catastrophe component).
- d) Industry Catastrophe Loss Ratio – supplied by BMA; used to calculate the embedded catastrophe premiums from lines of business other than Property Catastrophe.
- e) Property Catastrophe Premium – copied from Premium Risk section; net base exposure for Property Catastrophe line of business as reported on Schedule IVD column (B), line (1).
- f) Total Catastrophe Premium – is calculated using  $[(c) / (d) + (e)]$ ; used to calculate the embedded catastrophe premiums from lines of business other than Property Catastrophe.
- g) Credit Risk Capital Factor – supplied by BMA; credit risk factor applied to ceded catastrophe losses at the 99.0% TVaR level equal to 10.0%.
- h) Arrangements with Respect to Property Catastrophe Recoverables.

- i) Credit Risk Charge – calculated using  $[(a) - (b) - ((h) * 98\%) \times (g)]$ ; ceded catastrophe losses times the catastrophe credit risk capital factor.
- j) Catastrophe Capital Charge – calculated using  $[(b) - (f) + (i)]$ ; the catastrophe capital charge is carried to the Summary section.



## D29. INSURANCE RISK – MORTALITY

### *Background*

- D29.1 Insurance products that are considered to be exposed to mortality risk include term assurance, whole life, universal life, and accidental death and dismemberment insurance. These exclude life policies with critical illness acceleration riders.
- D29.2 The insurance risk-mortality charge is calculated by applying a capital factor to the respective net amount at risk. The capital risk factors are applied on an additive basis (i.e. 3.97/1000 on first \$1 billion of business, plus 1.80/1000 on the next \$4 billion of business, etc.).
- D29.3 A 50% reduction is applied to adjustable products and accidental death products. Adjustable products are defined as any insurance contracts in which the insurance group has the ability to make a material adjustment to the premiums / cost of insurance charges / dividends, based on recent experience.

### *Insurance Risk – Mortality Capital Charge*

- D29.4 The insurance risk - mortality charge calculation can be summarised by the following formula:

$$C_{LTmort} = [\sum_i \alpha 1_i \times NAAR1_i] + [\sum_i \alpha 2_i \times NAAR2_i], \quad \text{where}$$

$\alpha 1_i$  = capital charge factor for adjustable mortality long-term business;  
 $NAAR1_i$  = the net amount at risk of all adjustable mortality long-term business;  
 $\alpha 2_i$  = capital charge factor for non-adjustable mortality long-term business;  
and  
 $NAAR2_i$  = the net amount at risk of all non-adjustable mortality long-term business.

### *Items*

| Column Item |                    | Description   |
|-------------|--------------------|---|
| 1           | Net Amount At Risk | Column item 1: Net amount at risk for adjustable products/treaties, as reported on Schedule VII EBS, column (9), line 1; and Net amount at risk for non-adjustable products/treaties, as reported on Schedule VII EBS, column (10), line 1. |
| 2           | Capital Factor     | Column item 2: Supplied by the BMA; capital charge factors applied to individual net amount at risk for (a) adjustable products/treaties; and (b) non-adjustable products/treaties.   |
| 3           | Required Capital   | Column item 3: Calculated using [column item 1 x column item 2] for both (a) and (b) and summed up.   |

## **D30. INSURANCE RISK – STOP LOSS**

### ***Background***

- D30.1 A capital factor is applied to the respective net annual earned premiums of stop loss covers provided.

### ***Insurance Risk – Stop Loss Capital Charge***

- D30.2 The insurance risk – stop loss charge calculation can be summarised by the following formula:

$$C_{LTSI} = 50\% \times \text{net annual premium for stop loss covers.}$$

### ***Items***

| Column Item |                    | Description   |
|-------------|--------------------|---|
| 1           | Net Annual Premium | Column item 1: Net annual premium for stop loss covers, as reported on Schedule VII EBS, column (11), line 14.  |
| 2           | Capital Factor     | Column item 2: Supplied by the BMA; capital charge factors applied on net annual premiums for stop loss covers. |
| 3           | Required Capital   | Column item 3: Calculated using [column item 1 x column item 2].  |

## **D31. INSURANCE RISK – RIDERS**

### ***Background***

- D31.1 For any other product riders not included in the following insurance risk charges: i) mortality; ii) morbidity and disability; iii) longevity; and iv) stop loss, a capital factor is applied to the respective net annual earned premiums.

### ***Insurance Risk – Riders Capital Charge***

- D31.2 The insurance risk – riders charge calculation can be summarised by the following formula:
- $$C_{LTr} = 25\% \times \text{net annual premium for insurance product riders not included elsewhere.}$$

### ***Items***

| Column Item |                    | Description  |
|-------------|--------------------|--|
| 1           | Net Annual Premium | Column item 1: Net annual premium for other product riders, as reported on Schedule VII EBS, column (11), line 15.   |
| 2           | Capital Factor     | Column item 2: Supplied by the BMA; capital charge factors applied on net annual premiums for other products riders. |
| 3           | Required Capital   | Column item 3: Calculated using [column item 1 x column item 2].   |

## D32. INSURANCE RISK – MORBIDITY AND DISABILITY

### *Background*

- D32.1 Morbidity and disability risks are separated by critical illness insurance products and health insurance products.
- D32.2 For critical illness insurance products, including accelerated critical illness insurance products, a prescribed capital factor is applied to the net amount at risk, on an additive basis. A 50% reduction in the capital risk factors is applied to adjustable products.
- D32.3 Health insurance products include disability income products, long-term care insurance products, waiver of premium benefits, and other accidental and sickness products.

### *Insurance Risk – Morbidity and Disability Capital Charge*

- D32.4 The insurance risk – morbidity and disability charge calculation can be summarised by the following formula:

$$C_{LTmorb} = (a) + (b) + (c) + (d) + (e) \text{ where:}$$

- a) = 7% x BSCR-adjusted reserves for disability income claims in payment on waiver of premium and Long-Term care;
- b) = 10% x BSCR-adjusted reserves for disability income claims in payment on other accident and sickness products;
- c) =  $\left[ \sum_i \alpha_i \times NAP_i \right]$  Where –  
 $\alpha_i$  = individual  $NAP_i$  capital charge factor;  
 $NAP_i$  = the Net Annual Premium for disability income business – active lives;
- d) = 12% x net annual premiums for disability income - active lives for other accident and sickness; and
- e) =  $\left[ \sum_i \alpha 1_i \times NAAR1_i \right] + \left[ \sum_i \alpha 2_i \times NAAR2_i \right]$  Where –  
 $\alpha 1_i$  = capital charge factor for adjustable critical illness insurance business;  
 $NAAR1_i$  = the Net Amount at Risk of all adjustable critical illness insurance business in force;  
 $\alpha 2_i$  = capital charge factor for non-adjustable critical illness insurance business; and

$NAAR2_i$  = the Net Amount at Risk of all non-adjustable critical illness insurance business in force.

**Items**

**a) Subtotal Charge for Critical Illness**

| Column Item |                    | Description  |
|-------------|--------------------|--|
| 1           | Net Amount At Risk | Column item 1: Net amount at risk for adjustable products/treaties, as reported on Schedule VII EBS, column (9), line 2; and Net amount at risk for non-adjustable products/treaties, as reported on Schedule VII , column (10), line 2. |
| 2           | Capital Factor     | Column item 2: Supplied by the BMA; capital charge factors applied to individual net amount at risk for (a) adjustable products/treaties; and (b) non-adjustable products/treaties.  |
| 3           | Required Capital   | Column item 3: Calculated using [column item 1 x column item 2] for both (a) and (b) and summed up.  |

**b) Subtotal Charge for Disability Income (Active Lives with Premium Guarantee)**

| Column Item |                    | Description  |
|-------------|--------------------|--|
| 1           | Net Annual Premium | Column item 1: Net annual premium with benefit period of less than or equal to two years listed according to length of premium guarantee, as reported on Schedule VII EBS, column (9) -<br>(i) Premium guarantee of less than one year – line 7(a),<br>(ii) Premium guarantee of more than one year but less than five years – line 7(b), and<br>(iii) Premium guarantee of over five years – line 7(c);<br>and Net annual premium with benefit period of greater than two years listed according to length of premium guarantee, as reported on Schedule VII EBS, column (10) —<br>(iv) Premium guarantee of less than one year – line 7(a),<br>(v) Premium guarantee of more than one year but less than five years – line 7(b), and<br>(vi) Premium guarantee of over five years – line 7(c). |

| Column Item |                  | Description  |
|-------------|------------------|--|
| 2           | Capital Factor   | Column item 2: Supplied by the BMA; capital charge factors applied to individual<br>a) Net annual premiums with benefit period of less than or equal to two years according to the length of premium guarantee –<br>(i) Less than one year,<br>(ii) More than a year but less than five years, and<br>(iii) Over five years; and<br>b) On net annual premiums with benefit period of greater than two years according to the length of premium guarantee –<br>(i) Less than one year,<br>(ii) More than a year but less than five years, and<br>(iii) Over five years. |
| 3           | Required Capital | Column item 3: Calculated using [column item 1 x column item 2] for both (a) and (b) for each length of premium guarantee provided – (i), (ii) and (iii) – and summed up.  |

c) Subtotal Charge for Disability Income (Claims in Payment)

| Column Item |                       | Description  |
|-------------|-----------------------|--|
| 1           | BSCR Adjusted Reserve | Column item 1: (a) Disability income: claims in payment relating to waiver of premium and Long-Term care, as reported on Schedule VII EBS, column (7), line 9; and Disability income: claims in payment relating to other accident and sickness, as reported on Schedule VII EBS, column (7), line 10. |
| 2           | Capital Factor        | Column item 2: Supplied by the BMA; capital charge factors applied to individual BSCR-adjusted reserves with respect to disability income – claims in payment relating to (a) waiver of premium and Long-Term care, and (b) other accident and sickness.   |
| 3           | Required Capital      | Column item 3: Calculated using [column item 1 x column item 2] for both (a) and (b) and summed up.  |

d) Subtotal Charge for Disability Income (Active Lives for other accident and sickness products):

| Column Item |                    | Description  |
|-------------|--------------------|--|
| 1           | Net Annual Premium | Column item 1: Net annual premium for disability income (active lives), including other accident and sickness; as reported on Schedule VII EBS, column (11), line 8. |
| 2           | Capital Factor     | Column item 2: Supplied by the BMA; capital charge factor applied on the net annual premium for disability income – active lives.                                    |
| 3           | Required Capital   | Column item 3: Calculated using [column item 1 x column item 2].   |

e) Total Charge – Calculated using lines [(a) + (b) + (c) + (d)] above; the resulting figure is carried to the Summary section.

### D33. INSURANCE RISK – LONGEVITY

#### **Background**

D33.1 Products that are considered to be exposed to longevity risks include, but are not limited to, payout annuities and contingent annuities.

#### **Insurance Risk – Longevity Capital Charge**

D33.2 The insurance risk – longevity charge calculation can be summarised by the following formula:

$$C_{Llong} = \sum_i \alpha_i \times BAR_i \quad \text{Where –}$$

$\alpha_i$  = individual  $BAR_i$  capital charge factor; and

$BAR_i$  = the BSCR-adjusted reserves for long-term products with longevity risk.

#### **Items**

| Column Item |                        | Description  |
|-------------|------------------------|--|
| 1           | BSCR Adjusted Reserves | <p>Column item 1: BSCR adjusted reserves for Long-Term products with longevity risk as follows:</p> <p>a) Immediate pay-out annuities, contingent annuities, pension pay-outs according to the attained age of annuitant, as reported on Schedule VII EBS, column (7):</p> <ul style="list-style-type: none"> <li>(i) 0-55 – line 3(a)</li> <li>(ii) 56-65 – line 3(b)</li> <li>(iii) 66-70 – line 3(c)</li> <li>(iv) 71-80 – line 3(d) and</li> <li>(v) 81+ – line 3(e); and</li> </ul> <p>b) Deferred pay-out annuities, future contingent annuities, future pension pay-outs according to the age at which the annuity benefits commence, as reported on Schedule VII EBS, column (7):</p> <ul style="list-style-type: none"> <li>(i) 0-55 – line 4(a)</li> <li>(ii) 56-60 – line 4(b)</li> <li>(iii) 61-65 – line 4(c)</li> <li>(iv) 66-70 – line 4(d)</li> <li>(v) 71-75 – line 4(e) and</li> <li>(vi) 76+ – line 4(f)</li> </ul> |
| 2           | Capital Factor         | <p>Column item 2: Supplied by the BMA; capital charge factor applied to individual BSCR-adjusted reserves for longevity risk for both (a) immediate pay-out annuities, contingent annuities, pension pay-outs – (i) to (v); and (b) deferred pay-out annuities, future contingent annuities, future pension pay-outs – (i) to (vi).</p>  |
| 3           | Required Capital       | <p>Column item 3: Calculated using [column item 1 x column item 2] for both (a) and (b) for each attained age of annuitant and for each age at which the annuity benefits commence, respectively, and summed up.</p>   |

#### **Instructions Affecting Longevity Risk**

a) For joint and survivor annuities, the youngest age should be used.

## D34. OTHER INSURANCE RISK

### *Background*

- D34.1 The other insurance risk captures other risks related to policyholder behaviour, expenses and guarantees.

### *Other Insurance Risk Capital Charge*

- D34.2 The other insurance risk charge calculation can be summarised by the following formula:

$$C_{LTmort} = \left[ \sum_i \alpha 1_i \times NAAR1_i \right] + \left[ \sum_i \alpha 2_i \times NAAR2_i \right] \text{ Where:}$$

$\alpha_i$  = individual  $BAR_i$  capital charge factor; and

$BAR_i$  = the BSCR-adjusted reserves for other insurance risk.

### *Items*

| Line Item |                        | Description   |
|-----------|------------------------|---|
| 1         | BSCR Adjusted Reserves | Column item 1: Current year BSCR-adjusted reserves by the fifteen predefined lines, as reported on Schedule VII EBS, column (1), lines 1 to 15. |
| 2         | Capital Factor         | Column item 2 Supplied by the BMA; capital charge factors applied to individual BSCR-adjusted reserves for other insurance risk.                |
| 3         | Required Capital       | Column item 3: Calculated using [column item 1 x column item 2] for each line item.   |



## **D35. VARIABLE ANNUITY GUARANTEE RISK**

### ***Background***

- D35.1 Variable annuity benefits are partitioned into five categories:
- a) Guaranteed Minimum Accumulation Benefit (GMAB);
  - b) Guaranteed Minimum Death Benefit (GMDB),
  - c) Guaranteed Minimum Income Benefit (GMIB),
  - d) Guaranteed Minimum Withdrawal Benefit (GMWB), and
  - e) Guaranteed Enhanced Earnings Benefit (GEEB). Variable annuities contain various minimum guarantees that expose insurance groups to risks of a particularly volatile nature.
- D35.2 The capital risk factors differentiate by volatility levels and are applied to the Net Amount at Risk ('NAR'). Volatility is defined as the annual historic volatility of the fund. In the case where there is no, or limited, history of the fund, use the volatility of the benchmark. Where the Guarantee Value (GV) is less than the Account Value (AV), the minimum floor factors are applied to the account values. The proportion used for the AV under reinsurance is the proportion used for net amount at risk.
- D35.3 Net amount at risk (net of reinsurance) is defined as follows:
- a) GMAB – total claim payable if all contracts mature immediately;
  - b) GMDB – total claim amount payable upon immediate death of all policyholders;
  - c) GMIB – total claim payable upon full and immediate annuitisation of all policies using an 80% factor applied to the GV (the 80% represents the ratio between current market annuitisation factors and the guaranteed annuitisation factors);
  - d) GMWB – total claim payable if 100% of the guaranteed withdrawal benefit base in excess of the current AV is withdrawn immediately; and
  - e) GEEB – total guaranteed enhanced payments upon immediate death of all policyholders.

### ***Variable Annuity Guarantee Capital Charge***

- D35.4 The variable annuity guarantee risk charge calculation can be summarised by the following formula:

$$C_{LTV A} = \text{either } \left( \sum_i TotalBSReq_i - TotalBAR - TotalGMB_{adj} \right) \text{ or } (IMCReq_{LTV A})$$

wherein —

$TotalBSRe q_i = \text{higher of (a) } (\alpha 1_i \times GV1_i + \alpha 2_i \times GV2_i + \alpha 3_i \times GV3_i) \text{ and (b) } (\alpha 4_i \times NAR1_i + \alpha 5_i \times NAR2_i + \alpha 6_i \times NAR3_i) .$

- a)  $TotalBAR$  = the total BSCR adjusted reserves for variable annuity guarantee risk;
- b)  $TotalGMDB_{adj}$  = capital requirement charged on Guaranteed Minimum Death Benefit (GMDB) policies multiplied by the percentage of GMDB with multiple guarantees;
- c)  $IMCRe q_{LTV A}$  = the capital requirement for variable annuity guarantee risk determined in accordance with an insurance group's internal capital model, if applicable;
- d)  $GV1_i$ ,  $GV2_i$ ,  $GV3_i$ ,  $NAR1_i$ ,  $NAR2_i$ , and  $NAR3_i$  are the guaranteed value and net amount at risk under each range of volatility for each specified variable annuity product risk; and
- e)  $\alpha 1_i$ ,  $\alpha 2_i$ ,  $\alpha 3_i$ ,  $\alpha 4_i$ ,  $\alpha 5_i$  and  $\alpha 6_i$  are the capital factors applied to the guaranteed value and net amount at risk under each range of volatility for each specified variable annuity product risk.

### Items

#### a) Factor-Based Capital Requirement

| Column Item |                                       | Description   |
|-------------|---------------------------------------|---|
| 1           | Guaranteed Values: Volatility 0%-10%  | Column (1): Guaranteed values for each type of variable annuity risk with volatility that is less than or equal to 10% according to policy position (i.e. in/out-of-the-money); as reported on Schedule VIII EBS, column (2). |
| 2           | Capital Factor                        | Column (2): Capital factors supplied by the BMA for each type of variable annuity risk with volatility that is less than or equal to 10% according to policy position.  |
| 3           | Guaranteed Values: Volatility 10%-15% | Column (3): Guaranteed values for each type of variable annuity risk with volatility that is more than 10% but less than 15% according to policy position; as reported on Schedule VIII EBS, column (3).                      |
| 4           | Capital Factor                        | Column (4): Capital factors supplied by the BMA for each type of variable annuity risk with volatility that is more than 10% but less than 15% according to policy position.  |
| 5           | Guaranteed Values: Volatility >15%    | Column (5): Guaranteed values for each type of variable annuity risk with volatility that is more than 15% according to policy position; as reported on Schedule VIII EBS, column (4).  |

| Column Item |  | Description   |
|-------------|--|---|
| 6           | Capital Factor                         | Column (6): Capital factors supplied by the BMA for each type of variable annuity risk with volatility that is more than 15% according to policy position.  |
| 7           | Net Amount at Risk: Volatility 0%-10%  | Column (7): Net amount at risk for each type of variable annuity risk with volatility that is less than or equal to 10% for in-the-money positions only; as reported on Schedule VIII EBS, column (5).  |
| 8           | Capital Factor                         | Column (8): Capital factors supplied by the BMA for each type of variable annuity risk with volatility that is less than or equal to 10% for in-the-money positions only.   |
| 9           | Net Amount at Risk: Volatility 10%-15% | Column (9): Net amount at risk for each type of variable annuity risk with volatility that is more than 10% but less than 15% for in-the-money positions only; as reported on Schedule VIII EBS, column (6).  |
| 10          | Capital Factor                         | Column (10): Capital factors supplied by the BMA for each type of variable annuity risk with volatility that is more than 10% but less than 15% for in-the-money positions only.  |
| 11          | Net Amount at Risk: Volatility >15%    | Column (11): Net amount at risk for each type of variable annuity risk with volatility that is more than 15% for in-the-money positions only; as reported on Schedule VIII EBS, column (7).   |
| 12          | Capital Factor                         | Column (12): Capital factors supplied by the BMA for each type of variable annuity risk with volatility that is more than 15% for in-the-money positions only.  |
| 13          | Capital Requirements                   | Column (13): Calculated using the maximum of [{column (1) x column (2) + column (3) x column (4) + column (5) x column (6)} or {column (7) x column (8) + column (9) x column (10) + column (11) x column (12)}]; less percentage of guaranteed minimum death benefit with multiple guarantees, as reported on Schedule VIII EBS, column (4), line 32, applied to GMDB; less total BSCR adjusted reserves for variable annuities. |

b) Internal Model-Based Capital Requirement

| Column Item |                 | Description   |
|-------------|-----------------|---|
| 1           | Without Hedging | Column (1): The total capital requirement for variable annuity risk based on internal model results without taking into account hedging; as reported on Schedule VIIIA EBS, column (6), line 1. |
| 2           | With Hedging    | Column (2): The total capital requirement for variable annuity risk based on internal model results taking into account hedging; as reported on Schedule VIIIA EBS, column (7), line 1.         |

## D36. CAPITAL ADJUSTMENT

### *Background*

- D36.1 The capital adjustment charge represents the capital requirements for the following:
- Regulated non-insurance financial operating entities;
  - Unregulated entities where the parent exercises control;
  - Adjustment for loss absorbing capacity of technical provisions; and
  - Adjustment for absorbing capital of deferred taxes

which is added to the BSCR (after correlation adjustment) to arrive at the Group BSCR. The Group BSCR will be used to determine an insurance group's ECR for the relevant year, as reported in the Summary section of the BSCR model.

### *Capital adjustment*

- D36.2 The capital adjustment charge calculation can be summarised by the following formula:  
 $C_{adj} = (1) + (2)$  where:
- Regulatory capital requirement for regulated non-insurance financial operating entities; and
  - Capital requirement for unregulated entities where the parent company exercises control.

### *Items*

- D36.3 Regulatory capital requirement for regulated non-insurance financial operating entities – this capital adjustment charge shall be determined in accordance with Schedule XI(A), where this amount shall be equal to the sum of the group's proportionate share of each registered entity's regulatory capital in accordance with the applicable solvency rules of the jurisdiction where the entity was licenced or registered; and
- D36.4 Capital requirement for unregulated entities where the parent company exercises control – This capital adjustment charge shall be determined in accordance with Schedule XI(B), where this amount shall be equal to the sum of the capital requirement based on the capital charges applied to each unregulated entity's net assets, as follows:
- 0% to unregulated entities that conduct ancillary services to members of the group;
  - 15% to unregulated non-financial operating entities; and
  - 50% to unregulated financial operating entities.

### *Capital Adjustment – Management Actions*

- D36.5 The capital adjustment charge calculation for loss absorbing capacity of technical provisions due to management actions can be summarised by the following formula:

$$Adj_{TP} = -\max(\min(Basic\ BSCR - Basic\ nBSCR, FDB), 0) \text{ Where—}$$

$$\text{Basic BSCR} = \sqrt{\sum_{i,j} \text{CorrBBSCR}_{i,j} \times C_i \times C_j}$$

$$\text{Basic nBSCR} = \sqrt{\sum_{i,j} \text{CorrBBSCR}_{i,j} \times nC_i \times nC_j}$$

$\text{CorrBBSCR}_{i,j}$  = the correlation factors of the Basic BSCR correlation matrix as determined by Table A in section D19;

$C_i$  = risk module charge  $i$  which are replaced by the following:  
 $C_{\text{Market}}, C_{\text{P\&C}}, C_{\text{LT}}, C_{\text{Credit}};$

$C_{\text{Market}}$  = market risk module charge as determined by section D19.4;

$C_{\text{P\&C}}$  = P&C risk module charge as determined by section D19.5;

$C_{\text{LT}}$  = Long-Term risk module charge as determined by section D19.6; and

= credit risk module charge as determined by section D27.

$C_{\text{Credit}}$

$nC_i$  = net risk module charge  $i$  which is calculated the same way as  $C_i$  but by allowing the future discretionary benefits to change and by allowing managements actions to be performed in accordance with the criteria prescribed in section B6 and which are replaced by the following:

$nC_{\text{Market}}, nC_{\text{P\&C}}, nC_{\text{LT}}, nC_{\text{Credit}};$

$FDB$  = net present value of future bonuses and other discretionary benefits.

#### ***Capital adjustment – Deferred Taxes***

D36.6 The capital adjustment charge calculation for loss absorbing capacity of deferred taxes can be summarised by the following formula:

$$C_{\text{otheradj}} = \text{Min}((\text{Basic BSCR} + C_{\text{operational}} + C_{\text{regulatoryadj}} + \text{Adj}_{\text{TP}}) \times t, \text{Limit}, (\text{Basic BSCR} + C_{\text{operational}} + C_{\text{regulatoryadj}} + \text{Adj}_{\text{TP}}) \times 20\%)$$

Where —

Basic BSCR = Basic BSCR risk module charge as determined by section D19;

$C_{\text{operational}}$  = operational risk charge as determined by section D19.8;

$C_{\text{regulatoryadj}}$  = regulatory capital requirement for regulated non-insurance financial operating entities as determined by section D36.2;

$\text{Adj}_{\text{TP}}$  = adjustment for the loss-absorbing capacity of technical provisions as determined by section D36.5;

$t$  = insurance group's effective (federal) tax rate;

$\text{Limit}$  =  $\text{PastLAC} + \text{CurrentLAC} + \text{FutureLAC}$ ;

$\text{PastLAC}$  = Loss Carryback Provision multiplied by  $t$ ;

$\text{CurrentLAC}$  = Current Deferred Tax Liabilities minus Current Deferred Tax Assets; and

$\text{FutureLAC}$  = Risk Margin as reported on Form 1EBS line 18 multiplied by  $t$ ;

## **E. APPENDIX A - GLOSSARY**

**Act** – means the Insurance Act 1978.

**Accident and Health Insurance** – means an insurance that pays a benefit or benefits in the event of the insured incurring an insured injury, illness or infirmity.

**Annuity or Annuities** – means an insurance that provides savings or income benefits during the lifetime of the insured or some limited period thereafter.

**Approved Group Internal Capital Model** – means a model approved under paragraph 5 of the Rules.

**Available Statutory Capital and Surplus** – Available Statutory Capital and Surplus is defined as Total Statutory Capital and Surplus including subsequent Capital Contribution including ‘Deductions’. All capital contributions are to be approved by the BMA, and all adjustments are determined at the discretion of the BMA.

**Average Annual Loss (AAL)** – based on insurance group’s Cat models; mean expected net natural catastrophe loss (after reinsurance), including reinstatement premiums, for annual aggregate exposure to all related risks and perils other than those relating to the Property Catastrophe line of business for the year following the ‘relevant year’ as reported on Schedule V. The AAL should be calculated from the same underlying loss distribution used to determine the Gross PML and Net PML (excluding the property catastrophe component).

**Bermuda Monetary Authority (BMA or Authority)** – the BMA is the integrated regulator of the financial services sector in Bermuda. Established under the Bermuda Monetary Authority Act 1969, the Authority supervises, regulates and inspects financial institutions operating in or from within the jurisdiction. It also issues Bermuda’s national currency; manages exchange control transactions; assists other authorities in Bermuda with the detection and prevention of financial crime; and advises the Government and public bodies on banking and other financial and monetary matters. The Authority develops risk-based financial regulation that it applies to the supervision of Bermuda’s banks, trust companies, investment businesses, investment funds, fund administrators, money service businesses, corporate service providers, insurance companies, digital asset business and digital asset issuance. It also regulates the Bermuda Stock Exchange.

**Group Bermuda Solvency Capital Requirement (Group BSCR)** – establishes a measure of solvency capital that is used by the BMA to monitor the capital adequacy of insurance groups domiciled in Bermuda. The Group BSCR is determined by combining the calculated capital for each risk category (excluding operational risk) and applying a covariance adjustment with the square root rule, which is further adjusted to include group-specific operational risk, group-specific catastrophe-related measures, group-related risks and capital add-on.

**Group BSCR Ratio** – the Group BSCR Ratio is the ratio of the Available Statutory Economic Capital and Surplus to the Group BSCR (after covariance adjustment).

**Group Capital and Solvency Return** – means such return relating to the group’s risk management practices and to the information used by the group to calculate its ECR as may be prescribed by or under Rules made under section 6A.

**Cat** – abbreviation of the word catastrophe.

**Catastrophe Risk** – means the risk of a single catastrophic event or series of catastrophic events that lead to a significant deviation in actual claims from the total expected claims;

**Concentration Adjustment Factor** – the concentration adjustment factor is used in relation to the premium risk and the reserve risk. It is based on the ratio of the largest individual line of business amount to total amount. The Factor will decrease as the number of lines of business increases to a minimum value of 60%

**Concentration Risk** – means the risk of exposure to losses associated with inadequate diversification of portfolios of assets or liabilities.

**Credit Risk** – includes the risk of loss arising from an insurance group’s inability to collect funds from debtors.

**Critical Illness Insurance** – means a form of accident and health insurance that pays a benefit if the insured incurs a predefined major illness or injury.

**Deferred Annuity** – means an insurance that provides benefits at a future date which may be fixed deferred annuities where specified amounts are payable or variable annuities where the benefits are dependent on the performance of an investment fund or funds.

**Disability Income Insurance** – means an accident and health insurance that pays a benefit for a fixed period of time during disability.

**Form 1** – Statutory balance sheet as defined by the BMA.

**Form 2** – Statutory statement of income as defined by the BMA.

**Form 8** – Statutory statement of capital and surplus as defined by the BMA.

**Form 1EBS** – Economic balance sheet as defined by the BMA.

**Group Enhanced Capital Requirement (Group ECR)** – establishes a measure of solvency capital that is used by the BMA to monitor the capital adequacy of insurance groups domiciled in Bermuda. It is equal to the higher of an approved group internal capital model/Group BSCR or MSM.

**Group ECR Ratio** – the Group ECR Ratio is the ratio of Available Statutory Economic Capital and Surplus to the Group ECR.

**Group Life, Health and Disability Insurance** – means insurance that is issued to insureds through a group arrangement such as through an employer or association.

**Insurance (Group Supervision) Rules 2011(the Supervision Rules)** – these Rules apply to insurance groups for which the BMA is the group supervisor.

**Insurance (Prudential Standards) (Insurance Group Solvency Requirement) Rules 2011 (the Prudential Standard Rules)** – under section 6A of the Act, the BMA may make Rules prescribing prudential standards in relation to (a) ECR, (b) Capital and solvency returns, (c) Insurance reserves, and (d) Eligible capital that must be complied with by insurance groups for which the BMA is the group supervisor

**Insurance Risk** – means the risk of fluctuations or deterioration in the experience factors affecting the cost of benefits payable to policyholders or impacting upon the amounts held to provide for policyholder obligations, including Long-Term business risks.

**Legal Risk** – means the risk arising from an insurance group's (a) failure to comply with statutory or regulatory obligations; or (b) failure to comply with its bye-laws; or (c) failure to comply with any contractual agreement.

**Life Insurance** – including term insurance, whole-life insurance and universal-life insurance; means insurance of risks on the mortality (risk of death) of the life insured.

**Liquidity Risk** – means (a) the risk arising from an insurance group's inability to meet its obligations as they fall due or (b) an insurance group's inability to meet such obligations except at excessive costs.

**Longevity Risk** – means the risk of fluctuations or improvements in mortality that causes benefits or payout annuities to be paid for longer than expected.

**Market Risk** – means the risk arising from fluctuations in values of, or income from, assets or in interest rates or exchange rates.

**Morbidity Risk** – means the risk of fluctuations or deteriorations of morbidity experience causing increased claims on accident and health insurance coverage.

**Mortality Risk** – means the risk of fluctuations or deteriorations of mortality experience causing increased claims on life insurance coverage.

**Non-Proportional Insurance** – means coverage of risk that is not shared at a given layer or that attach above an insured layer.

**Non-Rated Bonds** – Bonds that have not been rated by AM Best, Standard & Poor's, Moody's, Fitch or equivalent agencies.

**Operational Risk** – means the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events including legal risk.

**Quoted** – assets that are carried at fair value quoted on an exchange or a determinable market.

**PML** – see Probable Maximum Loss definition.

**Premium Risk** – means the risk that premium is insufficient to meet future obligations.



**Probable Maximum Loss (PML)** – based on insurance group’s Cat models; probable maximum loss is the anticipated maximum loss that can occur with a certain level of probability. The BSCR utilises a probable maximum natural catastrophe loss at a 99.0% TVaR level for annual aggregate exposure to all related risks and all perils, including reinstatement premiums.

**Rated Bonds** – bonds rated with respect to the latest available AM Best, Standard & Poor's, Moody's, Fitch or equivalent agencies.

**Regulatory Action Level** – defined by BMA's regulatory action guidelines.

**Relevant Year** – in relation to an insurance group, this means its financial year.

**Reputational Risk** – includes risk of adverse publicity regarding an insurance group’s business practices and associations.

**Required Capital and Surplus** – see Enhanced Capital Requirement.

**Retrocessional Contracts** – Reinsurance contract whereby one reinsurer transfers all or part of the reinsurance risk that it has assumed or will assume to another reinsurer.

**Schedule II** – Schedule of Fixed Income and Equity Investments By BSCR Rating as defined by the BMA.

**Schedule IIA** – Schedule of Funds Held by Ceding Reinsurers In Segregated Accounts/Trusts by BSCR Rating as defined by the BMA.

**Schedule III** – Schedule of Loss and Loss Expense Provisions by line of business as defined by the BMA.

**Schedule IV** – Schedule of Premium Written by Line of Business as defined by the BMA.

**Schedule IV(B)** – Schedule of Long-Term Business Premiums as defined by the BMA.

**Schedule V** – Schedule of Risk Management as defined by the BMA.

**Schedule VI** – Schedule of Fixed Income Securities as defined by the BMA.

**Schedule VII** – Schedule of Long-Term Insurance Data as defined by the BMA.

**Schedule VIII** – Schedule of Long-Term Variable Annuity as defined by the BMA.

**Schedule VIIIA** – Schedule of Long-Term Variable Annuity – Internal Capital Model as defined by the BMA.

**Schedule IX** – Schedule of Group’s Solvency Self-Assessment as defined by the BMA.

**Schedule X** – Catastrophe Risk Return as defined by the BMA.

**Schedule XIA** – Schedule of Regulated Non-insurance Financial Operating Entities as defined by the BMA.

**Schedule XIB** – Schedule of Unregulated Entities Where the Parent Exercises Control as defined by the BMA.

**Schedule XIC** – Schedule of unregulated entities where the parent exercises significant influence as defined by the BMA.

**Schedule XID** – Schedule of entities' capital deducted from the available statutory capital and surplus as defined by the BMA.

**Schedule XII** – Schedule of group minimum margin of solvency as defined by the BMA.

**Schedule XIII** – Schedule of group eligible capital as defined by the BMA.

**Square Root Rule** – the square root rule is an approximation of the covariance effect of the risk categories.

**Strategic Risk** – means the risk of an insurance group's inability to implement appropriate business plans and strategies, make decisions, allocate resources, or adapt to changes in the business environment.

**Stop Loss Insurance Risk** – is a form of non-proportional risk that provides benefits if total claims experience exceed a predefined level.

**Supervision Rules** – see Insurance (Group Supervision) Rules 2011.

**Tail Value-at-Risk (TVaR)** – means the conditional average potential given that the loss outcome exceeds a given threshold.