INTERNAL

BERMUDA MONETARY AUTHORITY

GUIDANCE NOTES

FOR COMMERCIAL INSURERS AND INSURANCE GROUPS' STATUTORY REPORTING REGIME

31 MARCH 2024

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INTRODUCTION

1. The Bermuda Monetary Authority (the Authority) continues to review Bermuda's regulatory and supervisory regimes, to ensure that the jurisdiction adheres to international standards and best practices for insurance regulation and supervision. In that regard, the Authority in 2015 instituted a number of changes to its regime for commercial insurers and insurance groups to enhance its statutory and prudential reporting requirements for its commercial insurers. Furthermore, in 2023, the Authority has produced proposals aimed at further enhancing its standards with the intention of implementing these in 2024. References in this document to "insurer" shall also include "reinsurers" and "Bermuda Groups" unless specifically excluded.

2. In 2015, the Authority implemented the Economic Balance Sheet (EBS) framework which is now used as the basis to determine the Insurer's Enhanced Capital Requirement (ECR). The Authority also revised the basis on which Statutory Financial Statements (SFS) for commercial insurers are prepared. Before the changes, commercial insurers were required to prepare SFS under Section 15 of the Insurance Act 1978 (the Act), as prescribed under the Insurance Accounts Regulations 1980 (the Accounts Regulations), as well as "additional GAAP financial statements" under Section 17 of the Act. Under the 2015 changes to the financial statements prepared under Section 17A are the basis on which SFS is now prepared subject to the application of certain prudential filters. These financial statements in turn, form the starting basis for the preparation of the EBS. The SFS has statements both on a consolidated and unconsolidated basis. The unconsolidated information forms the basis for assessing the Insurer's liquidity position, Minimum Solvency Margin, and class of registration while the consolidated information forms the starting point for the EBS. The EBS, is the basis to calculate the Insurer's Enhanced Capital Requirement (ECR). Subsequently, in 2023, the Authority proposed several refinements to its 2015 EBS framework. The most material changes include the revision of the requirements for the use of the Scenario-Based Approach, the revision of the risk margin calculation for insurance groups, and the creation of a new, augmented, standalone schedule for its EBS framework named Schedule of Economic Balance Sheet Valuation Principles (EBS Rules).

3. The EBS framework, introduced in 2015, is already embedded in the Authority's legislative and regulatory regime through the Insurance (Prudential Standards) (Insurance Group Solvency Requirement) Amendment Rules 2015, the Insurance (Prudential Standards) Class 4 and 3B Solvency Requirement) Amendment Rules 2015, the Insurance (Prudential Standards) (Class 3A Solvency Requirement) Amendment Rules 2015, the Insurance (Prudential Standards) (Class C, Class D, Class E Solvency Requirement) Amendment Rules 2015. The 2023 proposed changes to the framework shall be embedded in the Authority's legislative and regulatory regime through the Insurance (Prudential Standards) (Insurance Group Solvency Requirement) Amendment Rules 2024, the Insurance (Prudential Standards) Class 4 and 3B Solvency Requirement) Amendment Rules 2024, the Insurance (Prudential Standards) (Class 3A Solvency Requirement) Amendment Rules 2024, the Insurance (Prudential Standards) (Class C, Class D, Class E Solvency Requirement) Amendment Rules 2024.

4. Section 6A of the Act provides for the Insurance Accounts Rules, which provide prudential rules prescribing the format and rule pertaining to the SFS. The introduction of the Insurance Accounts Rules in 2015 replaced the Accounts Regulations for commercial Insurers. The Accounts Regulations will still be applicable to the limited-purpose insurers.

I. AMENDMENTS TO COMMERCIAL INSURERS' STATUTORY REGULATORY FRAMEWORK

GAAP Financial Statements – Section 17A of the Insurance Act (1978)

5. Section 17A of the Act requires commercial insurers to prepare financial statements according to one of the following standards:

   a. International Financial Reporting Standards (IFRS);

   b. GAAP that apply in Bermuda, Canada, the United Kingdom, the United States of America or;

   c. Such other GAAP as the Authority may recognise.

6. These financial statements are audited by an approved auditor and published by the Authority in accordance with Section 17A(6) of the Act. These financial statements will now form the basis for the preparation of both the EBS and SFS. Except in a few areas specifically in the Insurance Account Rules and discussed below, amounts in the SFS shall be assessed and valued in line with the insurer's general purpose financial statements or where general purpose financial statements are not prepared, in line with the GAAP principles adopted by the insurer, as notified to and agreed by the Authority. Where a commercial insurer is a private company, versus a publicly-traded company, the insurer should be guided by the rules applicable to it.

7. Smaller commercial insurers, specifically Class 3A, Class C and Class D insurers, have the option to produce consolidated GAAP financial statements with abbreviated notes to the financial statements (condensed consolidated GAAP financial statements). While the Authority encourages these insurers to produce the full consolidated GAAP financial statements, the option is intended to mitigate the costs incurred to meet the requirements of Section 17A for insurers who do not currently prepare GAAP financials. The Authority has prescribed the format and rules governing the condensed consolidated GAAP financial statements in Schedule VIII and Schedule IX of the Insurance Account Rules. The Authority under Section 17A of the Act now allows Class 3A, Class C and Class D insurers the option to produce condensed consolidated GAAP financial statements. These statements must be audited by the insurer's approved auditor.

Consolidated and Unconsolidated Statutory Financial Statements

8. Prior to the development of the EBS regime, the SFS was used as the basis to calculate the insurer's ECR. The EBS regime, which will determine the insurer's ECR, uses the consolidated GAAP financial statements subject to certain prudential filters and EBS valuation rules. The SFS now forms the basis to produce the EBS by amending the SFS to reflect the consolidated or condensed consolidated GAAP financial statements values, subject to certain prudential filters (consolidated SFS) that are consistent with the EBS framework.

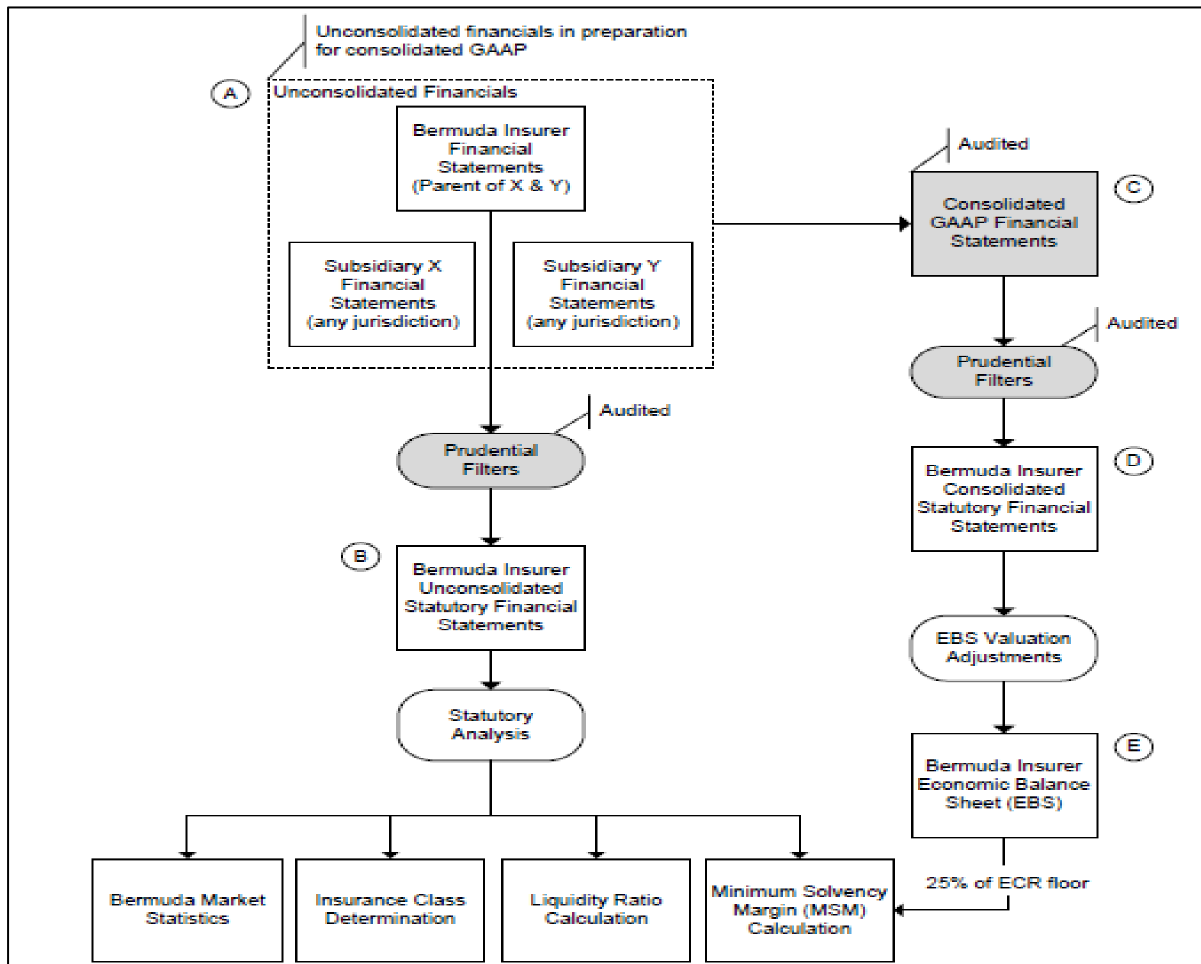
9. For insurers that have subsidiaries which are consolidated in their GAAP financial statements, the Authority still needs information on an unconsolidated basis. This relates to information necessary to assess the insurer's liquidity position, MSM and class of registration to prevent a migration up in MSM and class which could arise from the

consolidation approach, and also to assess liquidity applicable to Bermuda policyholders. The Authority considered requesting this information separately, but after considering the extent of the information required, it was determined that it would be more practical to include unconsolidated statutory financial statements in the SFS. The basis of the unconsolidated balance sheet and income statement is the legal entity's unconsolidated balance sheet and income statements on a GAAP basis adjusted for prudential filters and reserves, as discussed below. The existing unconsolidated statutory accounting valuation standards have been amended to make them consistent with GAAP accounting valuation, e.g., allowance of deferred acquisition costs and deposit accounting. Accordingly, insurers are, therefore, able to base the unconsolidated amounts on legal entity information that is used for GAAP accounting purposes.

10. Commercial insurers are now required to file a statutory balance sheet, statutory income statement and statutory statement of capital and surplus on an unconsolidated basis (unconsolidated SFS) reflecting the legal entity's unconsolidated financial position. The format and the rules governing the unconsolidated SFS are prescribed in the Insurance Account Rules. The information contained in the unconsolidated SFS will be used as one of the basis for the computation of the MSM with the other consideration being 25% of ECR which is computed from the EBS. The information will also be the basis for the computation of the insurer's liquidity ratio, determination of the insurer's class of registration and to generate market statistics that are published on the Authority's website and Annual Report.

11. The Insurance Accounts Rules contain the reporting forms for the balance sheets, income statements, statements of capital and surplus and notes to the financial statements. These reporting forms are similar to those contained in the Accounts Regulations. To avoid duplication, the Insurance Accounts Rules only prescribe additional notes to the financial statements that are not already contained in consolidated GAAP financial statements. The Account Regulations have been amended to remove the requirements pertaining to commercial insurers and transfer these requirements to the Insurance Accounts Rules. Section 53 of the Act has also been amended to provide clarity that anything that is permitted or required to be prescribed under this section may be prescribed in regulations by the Minister, other than those matters prescribed by prudential rules made by the Authority under section 6A.

Reporting Regime Illustrative Work Flow



12. Classes 3A, 3B and 4 insurers General Business Loss and Loss Expenses

i. Insurers are required to set aside an adequate amount of loss and loss expense provisions for the general insurance business to meet estimated unpaid losses in respect of events occurring before the last day of the relevant year and to meet expected loss adjustment expenses. The provisions and reserves will, therefore, include adequate amounts in respect of losses reported and losses incurred but not reported to the insurer before the last day of the relevant year.

ii. The Authority applies a floor whereby the Loss and Loss expense provision should not be less than the net insurance reserves calculated using values in the insurer's audited consolidated GAAP financial statements.

13. Classes C, D and E Insurers Long Term Insurance Reserves

i. Reserves for reported claims: insurers are required to carry in their SFS an adequate amount to meet claims unpaid at the end of the relevant year and made under contracts of insurance and reinsurance in respect of incidents occurring and reported to the insurer before the end of that year.

ii. Reserves for unreported claims: insurers are required to carry an amount set aside by the insurer to meet claims under contracts of insurance and reinsurance in respect of incidents occurring, but not reported to the insurer before the end of the relevant year.

iii. Policy reserves life: The Authority proposes that this be an amount, actuarially computed, which is considered adequate to provide future guaranteed benefits as they become payable under the provisions of life insurance policies in force. Amounts applicable to other life contract benefits (such as disability waiver of premium, disability income benefits and additional accidental death benefits) and to annuities and supple- mental contracts with life contingencies, may also be included. The said amount shall not include reserves in respect of accident and health policies.

iv. Policy reserves accident & health: These reserves are an amount, actuarially computed, which are considered adequate, and consist of an active life reserve, that is to say, that portion of due and collected premiums which has been set aside to be recognised as earned in the future consisting of:

- The unearned portion of the current premium;
- Additional reserves, that is to say, the reserves applicable to policies that provide for the payment of uniform rate premiums in respect of a risk, the cost of which increases with the age of the insured;
- Reserves for rate credits;
- A claims reserve, that is to say, the present value of amounts not yet due on claims provision for future contingent benefits being included in both cases.

iv. Policyholders' funds on deposit: These funds consist of premiums paid in advance of the due date, whether or not interest is paid for early payment. These liabilities shall be valued at the amounts received by the insurer, plus any interest credited.

v. Liability for future policy-holders' dividends: These are the amount of dividends payable, as declared by the directors, on participating life policies which qualify for such dividends, and shall be recorded at the amount declared.

vi. Other insurance reserves —Long-term business: These consist of any other reserves required by the terms of life or accident and health contracts or as a result of special riders or options attaching to any such contracts, not being reserves provided for in the items above. These must be actuarially determined and be considered adequate.

vii. Similar to the general insurance business, a floor is applied whereby the insurer's net Long-Term insurance reserves will not be less than the net Long-Term insurance reserves calculated using values in the insurer's audited consolidated GAAP financial statements.

ix. The SFS includes a note to Line 27 of the statutory balance sheet for Class

C, Class D and Class E insurers disclosing the movements in the Long- Term business insurance reserves. The reserves are to be split between reserves relating to insurance contracts and reserves relating to investment contracts as per Schedule II of the Insurance Account Rules.

Prudential Filters

14. The Insurance Accounts Rules contain the prudential filters, in preparation for EBS, and valuation rules that insurers need to apply to the GAAP financial statements in order to derive the SFS. Prudential filters refer to:

    a. adjustments to eliminate non-admitted assets, including goodwill and other similar intangible assets, not considered admissible for solvency purposes; and

    b. adjustments to include certain assets and liabilities that are generally off-balance sheet under general purpose reporting. These include items such as guarantees and other instruments that do not relate to the insurer's own insurance contracts.

15. The following prudential filters will be applied to GAAP values for both consolidated and unconsolidated SFS. These filters are consistent with the filters applied to GAAP values for the EBS.

    i. Goodwill and intangibles: Goodwill is to be valued at nil in the consolidated SFS. Other intangible assets can be recognised and measured at a value other than zero only if they can be sold separately and the expected future economic benefits will flow to the insurer and the value of the assets can be reliably measured. These assets must be separable and there should be evidence of exchange transactions for the same or similar assets indicating that they are saleable in the market place. If the value assessment of an intangible asset cannot be reliably measured, then such asset an should be valued at nil.

    ii. Prepaids and deferred expenses: There is no existing market value option for prepaid assets and deferred expenses. In this regard and since prepaids cannot generally be utilised to pay policyholders, they should be valued at nil in the consolidated SFS.

    iii. Deferred Acquisition Costs (DAC): Insurers will be allowed to carry DAC on the statutory balance sheet. The amount of DAC carried shall be valued consistently with the generally accepted accounted standards adopted by the insurer.

    iv. Contingent Liabilities: Contingent liabilities other than the insurer's own insurance contracts related guarantees are to be recognised as liabilities in the consolidated SFS and valued based on the expected present value of future cash-flows required to settle the contingent liability over the lifetime of that contingent liability, using the basic risk-free interest rate. Where the present value of the contingent liability cannot be determined because the timing of likely scenarios cannot be reliably estimated, the amount of the liability should be recorded at its undiscounted value. In coming up with the expected values, insurers should take into account both a profit element

and the risk premium required by market participants. For cases in which the contingent liability has asymmetrical outcomes, the valuation of the contingent liability should take account of a range of possible outcomes. This may be accomplished through option pricing models or models that consider multiple outcomes.

iv. Taxes: Current tax liabilities or assets are to be measured at the amount expected to be paid to or recovered from the taxation authorities, using the tax rates that have been enacted or substantively enacted by the end of the reporting period. Insurers shall recognise and value deferred tax assets and liabilities in relation to all assets and liabilities in conformity with the GAAP principles adopted by the insurer. Notwithstanding the above, insurers shall value deferred taxes, other than deferred tax assets arising from the carry-forward of unused tax credits and the carry-forward of unused tax losses, on the basis of the difference between the values ascribed to assets and liabilities recognised and valued in accordance with SFS prudential rules, and the values ascribed to assets and liabilities as recognised and valued for tax purposes.

v. Insurers should only ascribe a positive value to deferred tax assets where it is probable that future taxable profit will be available against which the deferred tax asset can be utilised, taking into account any legal or regulatory requirements on the time limits relating to the carry-forward of unused tax losses or the carry-forward of unused tax credits.

Treatment of Investments in Affiliates for Consolidated SFS

16. Where they have control, commercial insurers shall consolidate their investments in affiliates in the consolidated SFS. An insurer will apply the adopted GAAP principles to value and determine whether it controls or has significant influence over an affiliate. The insurer will also apply the aforementioned prudential filters, where relevant, as it consolidates these investments in the financial statements.

17. Where the insurer has significant influence but no control over the subsidiary, the value of these investments (with the applied prudential filters) will be included in Line 4 of the SFS balance sheet.

18. When an amalgamation occurs during the year between two insurers, the combined entity should report the results of the acquired entities from the date of the amalgamation. The insurer will not be required to restate comparatives of the combined entity in the amalgamation.

Insurance Risk Transfer and Schedule of Deposit Accounting

19. In situations where the GAAP principles adopted by the insurer require insurance contracts that do not transfer significant insurance risk, to apply deposit accounting in deriving the GAAP financial statements, insurers will be required to apply the same approach for the consolidated and unconsolidated SFS. The deposit assets and liabilities shall be included in Lines 13 (e) and 36 (c) respectively of the balance sheet.

Segregated Accounts Companies

20. Commercial insurers which are SACs shall have consolidated and unconsolidated SFS reflect the following:

- The information in the segregated accounts and the General Account can be viewed as one, therefore; the insurer should prepare the SFS aggregating the segregated accounts and General Account balances.

- The insurer’s license class will be determined based on the aggregated General Account and segregated accounts' net premiums or total assets.

- The insurer’s MSM will be calculated using the aggregated General Account and segregated accounts’ assets.

21. Insurers will have to apply for an exemption from aggregating the segregated accounts and the general account balances in cases where the Insurers deem there to be appropriate ring fencing of the cells.

Revisions to the Statutory Financial Return

22. Section 18 of the Act requires all insurers to file a Statutory Financial Return (SFR) with the Authority. For commercial insurers, the Authority has amended the Insurance Account Regulations and Insurance Return and Solvency Regulations to remove any references to commercial insurers, and place these requirements in the Insurance Accounts Rules, subject to modifications as noted below.

23. The SFR for commercial insurers will not include the solvency certificate as each commercial insurer will be required to prepare a Declaration of Compliance certificate, which will be published in accordance with Section 17A(6) of the Act. The Cover Sheet has been renamed the Insurer Information Sheet (IIS) and will include the calculations for the MSM and liquidity ratios (refer to paragraphs 11 to 13 of the Insurance Accounts Rules.)

24. The liquidity ratio computation now includes line 36 of the unconsolidated SFS pertaining to “Sundry Liabilities” as a relevant liability for the purposes of the calculation.

25. The Authority proposes that the SFR be signed by the insurer‘s principal representative and two directors attesting that it was prepared in accordance with the Insurance Accounts Rules.

Approved Auditors

26. Section 16 of the Act requires every insurer to appoint an auditor approved by the Authority and that the approved auditor is required to audit the SFS. The Approved Auditor will be required to:

    a. Audit the consolidated GAAP or consolidated condensed GAAP financial statements as will be required under Section 17A of the Act.

b. Audit the consolidated and unconsolidated SFS as required in Section 15 of the Act read together with paragraph 7 of the Insurance Accounts Rules.

27. Section 16A of the Act has been amended by revoking subsection 16A(1)(A), which allows the Minister to make regulations prescribing facts or matters which are likely to be of material significance for the discharge of the Authority's functions, and replace it with a new subsection that expressly states those conditions or situations which are of material significance. The conditions or situations are consistent with the principles currently found in the guidance note "Role of the Approved Auditor"". These include:

    a. Identification of a material misstatement in the insurer's statutory financial statements or group financial statements resulting from fraud, error or illegal acts or the consequences of them;

    b. Conclusion that there is substantial doubt as to the ability of the insurer or group to continue as a going concern for a period of one year from the balance sheet date;

    c. Identification of adjustments to the group financial statements, which individually or in aggregate, indicates to him/her that the previous year's audited annual financial statements, prepared according to GAAP, were materially misstated;

    d. Identification of adjustments to the insurer's financial statements, which individually or in aggregate, indicates to him/her that the previous year's audited annual financial statements, were materially misstated;

    e. Identification of a material weakness in internal control during the conduct of normal audit procedures;

    f. Identification of a material conflict of interest during the conduct of normal audit procedures; or

    g. Unresolved disagreements with management pertaining to the application of GAAP or statutory reporting.

II. ECONOMIC BALANCE SHEET (EBS) VALUATION PRINCIPLES GUIDANCE

28. The fundamental approach is that the EBS should use the insurer's existing GAAP balance sheet as a starting point. The EBS should be produced on a consolidated basis for both commercial insurers and insurance groups following the consolidation model in line with the GAAP principles adopted by the insurer as notified to and agreed by the Authority (GAAP).

29. Except where mentioned below, assets and liabilities (other than technical provisions) should be assessed and included on the EBS at fair value in line with the GAAP principles adopted by the insurer as notified to and agreed by the Authority (GAAP). Investments in affiliates shall be consolidated using the GAAP consolidation model. In situations where the GAAP principles permit both a fair value and a non-economic valuation model for valuing an asset or liability, the insurer should apply the fair value model.

30. For cases where the GAAP principles do not require an economic valuation, the insurer should value the asset or liability using the following hierarchy of the high-level principles governing the valuation of assets and liabilities (EBS valuation hierarchy):

    a. insurers should use quoted market prices in active markets for the same or similar assets or liabilities;

    b. where the use of quoted market prices for the same assets or liabilities is not possible, quoted market prices in active markets for similar assets and liabilities with adjustments to reflect differences should be used;

    c. if there are no quoted market prices in active markets available, insurers should use mark-to-model techniques, which are alternative valuation techniques that have to be benchmarked, extrapolated or otherwise calculated as far as possible from a market input;

    d. insurers should make maximum use of relevant observable inputs and market inputs and rely as little as possible on undertaking-specific inputs, minimising the use of unobservable inputs;

    e. When valuing liabilities, no adjustments should be made to take account of the own credit standing of the Insurer.

31. Insurance technical provisions would be valued based on best estimate cash flows, adjusted to reflect the time value of money using a risk-free discount rate term structure with an appropriate illiquidity adjustment. In addition, there would be a risk margin to reflect the uncertainty contained inherent in the underlying cash flows. Certain intangible assets would be disallowed as they are considered too uncertain to form part of a solvency assessment.

32. Subject to prior approval of the Authority, insurers may elect to produce some or all of their EBS using principles of other EBS regulatory frameworks (like Solvency II or such other economic valuation principles that the Authority has approved in advance for this purpose).

33. We have provided below specific recognition and valuation requirements for selected balance sheet areas that require more clarity.

Overarching Principles

Substance over form

34. When applying the EBS framework, the principle of substance over form should be followed wherever applicable. In other words, the application of the EBS framework should reflect the nature of the risks underlying the contract (substance), rather than the legal form of the contract (form).

35. Specific examples where this may be relevant are as follows:

    - The choice between P&C and Long-term life actuarial methodologies should be based on substance over form.

    - The segmentation of contracts between lines of business should be based on substance over form.

Proportionality

36. When applying the EBS framework, insurers should use methods and approaches which are proportionate to the nature, scale and complexity of the risks underlying their insurance and reinsurance obligations. The Authority may consider simplifications that use GAAP or Statutory approaches and figures as a starting point which are then adjusted to provide figures that are similar to the figures that would have been directly derived under a pure "EBS" valuation basis to be acceptable, especially for items that are likely to be immaterial from a balance sheet and solvency position. Hard and fast rules cannot be set in such matters – consideration needs to be on a case-by-case basis and upon analysis of the justification provided by the insurer and taking into account the nature, scale and complexity of the issues under analysis. The Authority does not generally consider it acceptable to use GAAP or Statutory valuation approaches and values that are not in line with the EBS valuation approach and that are not further adjusted on the basis of materiality/proportionality.

37. An evaluation, in either qualitative or quantitative terms, should be undertaken to assess the error introduced into the results as a result of using a particular approximate method or approach. An approximate method or approach is considered to be disproportionate to the nature, scale and complexity of the risks if the error leads to a misstatement that could influence the decision-making or judgment of the intended user of the information.

38. Such a method or approach may still be acceptable, however, if no other method or approach with a smaller error is available and the method or approach selected is pessimistic.

Intangible Assets

39. Goodwill is to be valued at nil. Other intangible assets can be recognised and measured at a value other than zero only if they can be sold separately and the expected future economic benefits will flow to the insurer and the value of the assets can be reliably measured. These assets must be separable and there should be evidence of exchange transactions for the same or similar assets indicating that they are saleable in the market place. If the value assessment of an intangible asset cannot be reliably measured, then such an asset should be valued at nil.

Contingent Liabilities

40. Contingent liabilities shall be recognised as liabilities in the EBS and valued based on the expected present value of future cash-flows required to settle the contingent liability over the lifetime of that contingent liability, using the basic risk-free interest rate.

41. Where the present value of the contingent liability cannot be determined because the timing of likely scenarios cannot be reliably estimated, the amount of the liability should be recorded at its undiscounted value. In coming up with the expected values insurers should take into account both a profit element and the risk premium required by market participants. For cases where the contingent liability has asymmetrical outcomes, the valuation of the contingent liability should take account of a range of possible outcomes. This may be accomplished through option pricing models or models that consider multiple outcomes.

Income Taxes

42. Current tax liabilities or assets shall be measured at the amount expected to be paid to or recovered from the taxation authorities, using the tax rates that have been enacted or substantively enacted by the end of the reporting period.

43. Insurers shall recognise and value deferred tax assets and liabilities in relation to all assets and liabilities that are recognised for solvency or tax purposes in conformity with the GAAP principles adopted by the insurer.

44. Notwithstanding the above, insurers shall value deferred taxes, other than deferred tax assets arising from the carry-forward of unused tax credits and the carry-forward of unused tax losses, on the basis of the difference between the values ascribed to assets and liabilities recognised and valued in accordance with the requirements of the Economic Balance Sheet and the values ascribed to assets and liabilities as recognised and valued for tax purposes.

45. Insurers shall only ascribe a positive value to deferred tax assets where it is probable that future taxable profit will be available against which the deferred tax asset can be utilised, taking into account any legal or regulatory requirements on the time limits relating to the carry-forward of unused tax losses or the carry-forward of unused tax credits.

Investments in Affiliates

46. Insurers shall consolidate holdings in affiliates where they have control. Insurers shall utilise its adopted GAAP principles to assess and determine whether it controls an affiliate. The Insurer shall apply uniform GAAP and Economic Balance Sheet valuation principles to consolidated affiliates.

47. Holdings in related affiliates where the Insurer does not hold a majority equity interest but has the ability to exercise significant influence over operating and financial matters shall be valued with the equity method. Economic balance sheet valuation principles shall be applied to the affiliates before deriving the values.

48. Holdings where the Insurer has neither control nor significant influence shall be valued at the quoted market price or if this valuation is not available the Insurer shall follow the EBS valuation hierarchy.

Insurance Risk Transfer

49. In situations where GAAP principles adopted by the Insurer require insurance contracts that do not transfer significant insurance risk to be deposit accounted, Insurers will be allowed to apply deposit accounting for the Economic Balance Sheet. The deposit assets and liabilities should be fair valued using the EBS valuation hierarchy and included in Lines 13 (e) and 36 (f).

Modified Coinsurance (Mod-co) Arrangements

50. The treatment of mod-co business under EBS is to be treated in a similar manner to its treatment under GAAP, provided that a fair value approach to valuation is adopted.

Deferred Acquisition Costs

51. Deferred acquisition costs (DAC) shall be implicitly included in the premium provisions valuation and not reflected as an asset.

Contractual Liabilities Other Than Technical Provisions

52. All contractual liabilities shall be recognised on the EBS. Contractual liabilities should be valued consistent with GAAP. In cases where the GAAP principles do not require fair value, the insurer should value the contractual liabilities using the EBS valuation hierarchy.

53. Where the Authority has issued a direction under sections 6C or 56 of the Insurance Act to effectively allow an Insurer to treat a contractual liability as capital in its Statutory Financial Returns, rather than as a liability as GAAP would dictate, then a similar treatment may be adopted for the EBS.

III. GUIDANCE FOR THE STATUTORY ECONOMIC BALANCE SHEET BY LINE OTHER THAN TECHNICAL PROVISIONS

Cash and Cash Equivalents (Line 1)

54. Cash equivalents shall include money-market funds and fixed-interest deposits placed with a maturity of under 90 days when purchased. This will also include restricted cash. Cash and cash equivalents shall be included in the EBS at fair value in line with the GAAP with both changes in fair value and realised gains/losses netted off Statutory Economic Capital and Surplus.

Quoted Investments (Line 2)

55. Quoted investments shall be recorded at fair value in line with GAAP with both changes in fair value and realised gains/losses netted off Statutory Economic Capital and Surplus. In cases where the GAAP principles do not require fair value, the insurer should value the quoted investment using the EBS Valuation hierarchy.

56. Residential Mortgage Backed Securities, Commercial Mortgage Backed Securities, Asset Backed Securities and Bond Mutual Funds shall be included under bonds and debentures and separately shown on Schedule II.

Unquoted Investments (Line 3)

57. Unquoted investments shall be recorded at fair value in line with GAAP with both changes in fair value and realised gains/losses netted off Statutory Economic Capital and Surplus. In cases where the GAAP principles do not require fair value, the insurer should value the unquoted investment using the EBS valuation hierarchy.

Investments in and Advances to Affiliates (Line 4)

58. Insurers shall consolidate holdings in affiliates where they are deemed to have control under the Insurer's GAAP principles.

59. Investments in related affiliates where the Insurer does not hold a majority equity interest but has the ability to exercise significant influence over operating and financial matters shall be valued with the equity method. Economic balance sheet valuation principles shall be applied to the affiliates before deriving the values to be included for equity method accounted entities, including the deduction of goodwill and other intangible assets.

60. Investments in affiliates where the Insurer has neither control nor significant influence shall be valued at the quoted market price or if this valuation is not available the Insurer shall follow the hierarchy of high level principles governing the valuation of assets and liabilities outlined above.

61. Advances to affiliates shall be recorded at fair value in line with GAAP. In cases where the GAAP principles do not require fair value, the insurer shall value the balances using the EBS valuation hierarchy. Amounts receivable or payable on account of policies of insurance or reinsurance with affiliates shall not be included in this line. Such amounts shall be included in the accounts and premiums receivables line (Line

10) and reinsurance payable (Line 28), respectively. Funds held by ceding reinsurers which are affiliates (line 12) and funds held under reinsurance contracts with affiliates (line 34) shall also not be included.

Investment in Mortgage Loans on Real Estate (Line 5)

62. Investment in mortgage loans on real estate shall be recorded at fair value in line with GAAP. In cases where the GAAP principles do not require fair value, the insurer shall value the balances using the EBS valuation hierarchy.

Policy Loans (Line 6)

63. Policy loans shall be recorded at fair value in line with GAAP. In cases where the GAAP principles do not require fair value, the insurer shall value the balances using the EBS valuation.

Real Estate (Line 7)

64. Commercial investments occupied by the Insurer shall be included here.

65. Real estate including properties owned and occupied by the Insurer shall be recorded at fair value in line with GAAP. In cases where the GAAP principles do not require fair value, the insurer shall value the balances using the EBS valuation hierarchy.

66. Insurers shall apply fair value and revaluation models when valuing real estate even in situations where the cost model is permitted under the GAAP principles.

Collateral Loans (Line 8)

67. Collateral loans shall be recorded at fair value in line with GAAP. In cases where the GAAP principles do not require fair value, the insurer shall value the balances using the EBS valuation hierarchy.

Investment Income Due and Accrued (Line 9)

68. Investment income due and accrued shall be recorded at fair value in line with GAAP. In cases where the GAAP principles do not require fair value, the insurer shall value the balances using the EBS valuation hierarchy.

69. Balances due in more than one year shall be discounted at the relevant risk free rate.

Accounts and Premium Receivable (Line 10)

70. Accounts and premium receivable shall be recorded at fair value in line with GAAP. In cases where the GAAP principles do not require fair value, the insurer shall value the balances using the EBS valuation hierarchy.

71. Premiums due but not yet received shall be included on this line while premiums not yet due shall be included as part of premium provisions.

72. Balances due in more than one year shall be discounted at the relevant risk free rate.

Reinsurance Balances Receivable (Line 11)

73. Reinsurance balances receivable shall be recorded at fair value in line with GAAP. In cases where the GAAP principles do not require fair value, the insurer shall value the balances using the EBS valuation hierarchy.

74. Losses and loss expenses recoverable shall be included on line 16.

75. Balances due in more than one year shall be discounted at the relevant risk-free rate.

Funds Held by Ceding Reinsurance (Line 12)

76. Funds held by ceding reinsurers (whether affiliate or not) shall be included here.

77. Funds held by ceding reinsurers receivable shall be recorded at fair value in line with GAAP. In cases where the GAAP principles do not require fair value, the insurer shall value the balances using the EBS valuation hierarchy.

Sundry Assets (Line 13)

78. Any asset not accounted for in lines 1 to 12 and 14 shall be included here if it has a readily realizable value. Any other assets, prepaid and deferred expenses, goodwill and similar intangible assets shall be non-admitted assets.

79. Derivative instruments - shall be recorded at fair value in line with GAAP with both changes in fair value and realised gains/losses netted off Statutory Economic Capital and Surplus.

80. See above for Deferred Tax Assets (paragraphs 42-45) and Intangible Assets (paragraph 39).

81. All other assets categorised under sundry assets shall be recorded at fair value in line with GAAP. In cases where the GAAP principles do not require fair value, the insurer shall value the balances using the EBS valuation hierarchy.

Letters of Credit Guarantee and Other Instruments (Line 14)

82. Where additional fixed capital has been secured to the insurer by means of an irrevocable letter of credit, a guarantee or any other instrument, an asset may, with the approval of the Authority obtained on an application made for that purpose, be recorded and the capital increased by a corresponding amount. Where such an asset is recorded, it must be shown net of any allowance for its collectability.

83. Letters of credit, guarantees and other instruments in favour of the insurer which relate to insurance or reinsurance contracts shall not be recorded here. While these are not included in the EBS, they have an impact in potentially reducing counterparty default risk for capital assessment.

84. Other than with approval from the Authority contractual rights arising from off-balance sheet arrangements and other contingent assets shall not be recognised in the EBS.

Insurance and Reinsurance Balances Payable (Line 28)

85. Amounts, including premiums and other balances, payable to insured persons and reinsurers (whether affiliates or not) under insurance and reinsurance contracts shall be included. Funds held by the insurer under reinsurance contracts (shown on line 34) shall not be included.

86. Insurance and reinsurance balances payable shall be recorded at fair value in line with GAAP. In cases where the GAAP principles do not require fair value, the insurer shall value the balances using the EBS valuation hierarchy.

87. Amounts payable in more than one year shall be discounted at the relevant risk free rate.

Commissions, Expenses, Fees, and Taxes Payable (Line 29)

88. All liabilities in respect of commissions (including profit commissions) underwriting expenses, fees and taxes (other than income taxes) shall be included. All unearned commissions shall be included here.

89. Commissions, expenses, fees and taxes payable shall be recorded at fair value in line with GAAP. In cases where the GAAP principles do not require fair value, the insurer shall value the balances using the EBS valuation hierarchy.

90. Amounts payable in more than one year shall be discounted at the relevant risk free rate.

Loans and Notes Payable (Line 30)

91. Loans and notes payable to any person other than an affiliate shall be included here.

92. Loans and notes payable shall be recorded at fair value in line with GAAP. In cases where the GAAP principles do not require fair value, the insurer shall value the balances using the EBS valuation hierarchy.

Tax Liabilities (Line 31)

93. See Income Taxes section above (paragraphs 42-45)

Amounts Due to Affiliates (Line 32)

94. All balances due to affiliates, not being amounts payable under reinsurance contracts (shown on line 28 or line 34), shall be included here.

95. Amounts due to affiliates shall be recorded at fair value in line with GAAP. In cases where the GAAP principles do not require fair value, the insurer shall value the balances using the EBS valuation hierarchy.

96. Amounts payable in more than one year shall be discounted at the relevant risk free rate.

Accounts Payable and Accrued Liabilities (Line 33)

97. Any other (non-insurance) accounts payable and accrued liabilities shall be included here.

98. Accounts payable and accrued liabilities shall be recorded at fair value in line with GAAP. In cases where the GAAP principles do not require fair value, the insurer shall value the balances using the EBS valuation hierarchy.

Funds Held Under Reinsurance (Line 34)

99. Funds held under reinsurance contracts shall be recorded at fair value in line with GAAP. In cases where the GAAP principles do not require fair value, the insurer shall value the balances using the EBS valuation hierarchy.

Dividends Payable (Line 35)

100. The amount of dividends payable to shareholders in the insurer declared prior to the last day of the relevant year and remaining unpaid on that day shall be included here.

101. Dividends payable shall be recorded at fair value in line with GAAP. In cases where the GAAP principles do not require fair value, the insurer shall value the balances using the EBS valuation hierarchy.

102. Amounts payable in more than one year shall be discounted at the relevant risk free rate.

Sundry Liabilities (Line 36)

103. Any liabilities (including prospective and contingent liabilities) not assigned to another line of the balance sheet shall be included here.

104. Sundry liabilities shall be recorded at fair value in line with GAAP. In cases where the GAAP principles do not require fair value, the insurer shall value the balances using the EBS valuation hierarchy.

105. See discussion on contingent liabilities above (paragraph 40).

Letters of Credit, Guarantees and Other Instruments (Line 37)

106. Where letters of credit and guarantees are given by the insurer in favour of another person, being letters of credit, a guarantee or any other instrument not relating to the insurer‘s
insurance operations and in effect encumbering the insurer’s assets, a liability shall be recorded and the statutory economic capital and surplus decreased by a corresponding amount, whether the insurer has pledged specific assets or not under the letters of credit, a guarantee or any other instrument. Letters of credit, guarantees and other instruments relating to insurance operations shall not be recorded.

107. The value of the contingent liability in the letters of credit, guarantees and other instruments shall be obtained based on the expected present value of future cash-flows

required to settle the contingent liability over the lifetime of that contingent liability using the risk free interest rate. Where the present value of contingent obligations cannot be determined because the timing of likely scenarios cannot be reliably estimated, the liability should be valued at its undiscounted value.

108. See Contingent Liabilities discussion above (paragraph 40).

Notes to the EBS

109. Line 10 – Collateral balances: The Insurers shall disclose the amounts of any collateral issued in favour of the Insurer related to accounts and premiums receivable.

110. Line 11 (e) – The Insurer shall disclose the nature, terms and amounts of any collateral issued in favour of the Insurer relating to reinsurance balances receivable.

111. Line 13 (k) – The Insurer shall provide a detailed breakdown of what makes up other sundry assets.

112. Line 15 – Encumbered Assets for Policyholder Obligations - Details of the total encumbered assets securing policyholder obligations shall be provided including asset type and the amount.

113. Line 15 – Encumbered Assets not Securing Policyholder Obligations - The details of the total encumbered assets not securing policyholder obligations, including asset type, purpose of the encumbrance, and the amount shall be included.

114. Line 17 (c) – Total reinsurance recoverable balance - The Insurer shall disclose the nature, terms and amounts of any collateral issued in favour of the Insurer relating to reinsurance balances receivable.

115. Line 37 – Letter of Credit, Guarantees and Other Instruments - The Insurer shall disclose the nature and terms and amounts of the letters of credit, guarantees and other contingent liability instruments. The Insurer shall also disclose the valuation basis and the key assumptions made in coming up with the expected net present value.

116. Line 40 – Reconciliation between Line 40 of 1EBS and Line 40 of Form 1A - The insurer shall provide details of the differences between the Total Statutory Economic Capital and Surplus under Form 1EBS and the Total Capital and Surplus under form 1A. For the purposes of the trial run the Insurer should prepare the reconciliation between the Capital and Surplus as per the GAAP financial statements and the Total Statutory Economic Capital and Surplus using schedule V(e). This is in line with the Authority‘s aim of replacing current Statutory financial statements with consolidated GAAP financial statements. Items listed under “Others’’ in schedule V(e) should be specified and broken down by Statutory Economic Balance Sheet Line.

IV. GUIDANCE ON TECHNICAL PROVISION FOR EBS

117. This section of the Guidance Note serves to supplement the technical provisions section of the EBS Rules applicable to commercial insurers and insurance groups. While each set of Insurance Prudential Standards has its own Schedule of Economic Balance Sheet Valuation Principles (EBS Rules), with the exception of the calculation of the group risk margin, the EBS Rules set out the same requirements and follow the same structure across all insurance classes in scope (i.e. Groups, Class 4/3B, Class 3A, Class D/E and Class C). Noting that paragraph numbers may change across the EBS Rules for certain classes, for simplicity purposes this Guidance Note follows the paragraph numbering convention set on the EBS Rules for Groups.

118. This section of the Guidance Note follows the thematic order of the corresponding (technical provisions) section of the EBS Rules. This replication of structure should allow readers to more easily locate any guidance applicable to a specific aspect of the Rules on technical provisions. It is, however, noted that many concepts in the EBS framework are interrelated and therefore Guidance or Rules under one sub-section may also be relevant to aspects covered in other sub-sections. Readers should therefore ensure they are adequately familiar with the complete technical provisions framework even when they are making decisions on specific aspects of it.

119. Consistent with the Bermuda Solvency Regime, the EBS is a principles-based framework and should be read on this basis.

Technical Provisions – Application Principles

[EBS Rules p8] - Proportionality, Nature, Scale, Complexity and Simplifications

120. The principles of proportionality (referenced in paragraph 8 of the EBS Rules) and substance over form (referenced in paragraph 34 of the Guidance Note) apply to all aspects of the calculation of the technical provisions. These principles, by extension allow insurers to make suitable simplifications.

121. The application of the principles of proportionality and substance over form can have a very significant impact on the calculation of the technical provisions. Insurers should therefore ensure that their application is considered carefully and applied in a consistent manner throughout all aspects of the calculation of the technical provisions.

122. Insurers, in evaluating the error (of their selected methodology) under subparagraph 8(2) of the EBS Rules, are not necessarily required to specify the precise amount of the error. Insurers, therefore, are not necessarily required to re-calculate the value of their technical provisions using a more complex method in order to demonstrate that the difference between the result of the chosen method and the result of a more complex method is immaterial. However, in some circumstances it could be appropriate to carry out such a calculation.

Technical Provisions – General Calculation Principles

[EBS Rules p11] - Segmentation

123. The segmentation of insurance obligations into homogeneous risk groups, referenced in paragraph 11 of the EBS Rules, is a matter for individual insurers to determine, but insurers should be aware of the need to provide information on their best estimate technical provisions by statutory line of business for Bermuda Solvency Capital Requirement (BSCR) reporting and calculation purposes.

[EBS Rules p12] - Insurance Obligation Recognition and Contract Boundaries

124. EBS Rules subparagraph 12(1) requires insurers to recognise an insurance obligation at the date an insurer becomes a party to the contract that gives rise to the obligation or the date the insurance cover begins, whichever date occurs earlier. As the text suggests, it is possible for insurers to be party to a contract of insurance even when the inception date of the contract is after the valuation date of the technical provisions.

125. Subparagraph 12(2) of the EBS Rules sets out the criteria for insurers to assess whether they are party to an insurance contract,i.e. consider:

(i) whether or not the contracts are legally enforceable or
(ii) on what terms the insurer could avoid the liability associated with the exposure, or
(iii) whether or not the insurer is able to materially change the terms or premium associated with the contract of insurance, where an insurer is legally required under law to provide the insurance cover.

[EBS Rules p14] - Comparison Against Experience

126. In comparing against experience, insurers should ensure they understand the main sources of observed deviation and the reasons behind these deviations.

Technical Provisions – Best Estimate

[EBS Rules p15] - Overview

127. In determining the best estimate under paragraph 4 of the EBS Rules, insurers should not make any allowance for their own credit standing.

128. Subparagraph 15(1)(c) of the EBS Rules requires that the best estimate allow for uncertainty in future cash flows, and reflect the full potential range of possible outcomes, each weighted to reflect their respective probability of occurrence. This, however, does not mean that additional margins should be held within the best estimate to reflect this uncertainty unless provided for in the EBS Rules.

Probability Weighted Average - Practical Considerations

129. Ensuring that the best estimate meets the definition set out in subparagraph 15(1)(a) of the EBS Rules (…probability-weighted average of future cash flows discounted, using the relevant interest rate term structure….) can be more challenging to meet in practice than a number of historical definitions of best estimate.

130. Historically, many actuaries set best estimate assumptions with a desire that actual experience exceeds the best estimate as often as it is lower than the best estimate. This is known as a "median" approach.

131. In principle, the BMA definition is more of a "mean" approach, requiring consideration of the full distribution of the risk.

132. In practice, for symmetric risks, a median and mean definition should lead to the same best estimate. For asymmetric risks with emphasis on the adverse tail of the distribution, as is often the case with distributions for insurance risks, the mean is typically greater than the median – in some cases, materially so. In addition, many non-economic risks can also be asymmetric in nature, although not always materially so.

133. In principle, best estimate assumptions should be set based on what is observable about any particular experience item or can be reasonably inferred from observable information.

134. This position leads to best estimate assumptions that are, for a significant part, based on an insurer's past experience where that past experience is credible, as this past experience is an observable item. While this is the case, an insurer's own past experience is only one of a range of observable areas. In setting best estimate assumptions there are many other factors to take into consideration as set out below:

a. Consideration of product features, target market, distribution channel and competitor dynamics.

b. Where there is credible internal data, perform a robust experience analysis. This should analyse the data at least by duration year and calendar year of inception.

c. Any recent trends should be considered as part of ensuring compliance with the requirement under subparagraph 21(1) of the EBS Rules to take into account future developments, including trends. The analysis must also consider how recent experience compares to the best estimate assumption in line with the requirement set out in EBS Rules paragraph 14 (1) (insurers shall implement processes and procedures to ensure that the best estimate calculation, and the assumptions underlying such calculation, are regularly compared against experience).

d. As part of ensuring compliance with the requirement under paragraph 13 of the EBS Rules, for the data used in the calculation of technical provisions to be appropriate, complete and accurate, the credibility of data should be considered, when determining how much weight to put on company-specific experience and how much to put on external sources.

e. Consider external data sources such as industry analyses, reinsurers' experience, and

guidance from local actuarial associations or experts with knowledge of the insurance industry in the country in question.

f. Consider other issues of relevance, for example, recent or expected future changes in fiscal and regulatory frameworks.

g. Focus efforts more on the material product lines and material assumptions.

h. Bear in mind the potential for asymmetries, particularly where there are discrete truncations in the possible experience. An example is the lapse rate for low lapse savings products, where there is a natural limit of 0% in considering how far lapse rates can fall, but less of a limit when considering possible increases in lapse rates.

i. Consider lapse and similar decrement assumptions bearing in mind other assumptions made on that basis.

j. For new product launches where data is limited and volumes are rapidly increasing, the assumptions for other similar products may be used, where suitable, as a starting point but should be critically reviewed in terms of the relevance to the new product. This review should consider a comparison of product features and pricing. For example, a more costly product may have higher lapses than a lower cost equivalent if policyholders later believe the product is poorer value for money.

k. Consider the extent to which non-economic experience, e.g., lapses, switching and other policyholder options, may vary with market movements.

135. Indeed, for the estimation of many non-life and long-term business best estimate liabilities, deterministic and analytical techniques may be as appropriate as simulation techniques. Given that the best estimate of simulation and deterministic methods may well be the same, not least because deterministic results are often used to calibrate simulation methods, this means that the best estimate may be the same in practice for either method.

136. It may be possible to implicitly allow for all possible scenarios through the chain- ladder technique in non-life insurance – providing that the estimate is based on a sufficient volume and history of data. This is further in the 'Events Not In Data Set (ENIDS)' section.

137. It is noted that subparagraph 15(1)(a) of the EBS Rules requires the best estimate to equal the average of the discounted cashflows and not the discounted average of the cashflows, where this is different.

[EBS Rules p16] - Cashflows and Uncertainty in Future Cashflows

138. It is noted that the requirement under subparagraph 16(3) of the EBS Rules does not necessarily imply best estimates have to be calculated using a stochastic methodology; the only requirement is correspondence to the probability-weighted average.

139. The following tax payments should be included in the best estimate under subparagraph 16(2)(h) of the EBS Rules: transaction-based taxes (such as premium taxes, stamp duties, value added taxes and goods and services taxes) and levies (such as fire service levies and guarantee fund assessments) that arise directly from recognised insurance contracts. Assessments which are already included in other expense assumptions (such as levies to industry protection schemes) should not be included. All other tax payments should be taken into account under other balance sheet items.

[EBS Rules p17] - Expenses

140. Insurers should undertake an expense analysis to allocate all expenses recently incurred by the insurer to one of acquisition, administrative, claims management, investment or overhead.

141. Overhead expenses shall be allocated in a realistic and objective manner and on a consistent basis over time to the parts of the best estimate to which they relate.

[EBS Rules p18] - Different Currencies Application - Best Estimate Calculation

142. The uncertainty around future exchange rates should not be considered in the calculation of the best estimate when using the Standard Approach. The risk of fluctuations in exchange rates should be covered in the currency risk section of the BSCR calculation. Where the scenario-based approach is used, the treatment should be according to the EBS Rules.

[EBS Rules p19] - Allowance for Recoveries From Outwards (Re)insurance Contracts

Allowance for Reinstatement Premiums in Reinsurance Recoverable Balances

143. In line with the principle of proportionality, set out in paragraph 8 of the EBS Rules, insurers may elect not to include in the calculation of technical provisions reinstatement premiums deemed to be immaterial.

Possible Simplification for Reinsurance Recoverables

144. With respect to the principle of proportionality, in some circumstances it may be reasonable for insurers to use methods to derive the net best estimate (before making adjustments for losses due to expected counterparty default) from the gross best estimate without an explicit projection of the cash-flows underlying the amounts recoverable from reinsurance contracts.

145. In particular, gross-to-net techniques may be used providing that the particular methodology selected is proportionate to the underlying risk. This approach also presupposes that an estimate of the technical provisions gross of reinsurance (compatible with the EBS framework) is already available, with a "gross-to-net factor" being applied to these gross technical provisions. The value of reinsurance recoverable is then derived as the excess of the gross over the net estimate and would be subject to adjustment for expected losses due to counterparty default.

146. Insurers are expected to make use of gross-to-net methods in a flexible and proportionate way, by applying them to either premium provisions or provisions for claims outstanding or to a subset of lines of business or accident years, having regard to, for example, the complexity of their reinsurance programmes, the availability of relevant data, the importance (and significance) of the sub-portfolios in question or by using other relevant criteria.

147. An insurer would typically use a simplified gross-to-net technique, for example, when the insurer cannot ensure the appropriateness, completeness and accuracy of the data or the underlying reinsurance programme has changed.

148. It seems unlikely that a gross-to-net simplified technique being applied to the overall portfolio of a non-life insurance insurer would provide reliable and reasonably accurate approximations of the best estimate of technical provisions net of reinsurance. Accordingly, if such techniques are to be adopted, non-life insurance insurers should, in general, carry out the gross-to-net calculations at a sufficiently granular level. In order to achieve this level of granularity a suitable starting point would be:

a. To distinguish between homogeneous risk groups or, as a minimum, classes of business;

b. To distinguish between “large claims” and “small claims”;

c. To distinguish between the premium provisions and provisions for claims outstanding (for a given homogeneous risk group or class of business); and

d. With respect to the provisions for claims outstanding, to distinguish between the accident years not fully developed and – if the necessary data is available and of sufficient quality – to distinguish further between provisions for outstanding claims and IBNR claims, respectively.

149. A further refinement that may need to be applied when stipulating the gross-to-net factors would be to take into account the type of reinsurance cover and especially the relevant (i.e. most important) characteristics of this cover.

150. When applying such refinements, including when considering the appropriate level of granularity for the calculation, the principle of proportionality, as set out in paragraph 8 of the EBS Rules applies. When considering the nature, scale and complexity of the risks, insurers should also consider the reinsurance programme in scope.

151. For certain kinds of reinsurance covers (e.g. in cases where the cover extends across several lines of business so that it is difficult to allocate the effect of the reinsurance risk mitigation to individual lines of business or even homogeneous groups of risk, or where the cover is only with respect to certain perils of a class of business), increasing the granularity of gross-to-net techniques as described above will not suffice to derive an adequate determination of provisions net of reinsurance. In such cases, individual approaches tailored to the specific reinsurance cover in question would need to be used.

152. As an alternative to gross-to-net calculations, it may be contemplated to use a direct calculation of net provisions based on triangular claims data on a net basis. However, it should be noted that such a technique would generally require adjustments

of the underlying data triangle in order to take into account changes in the reinsurance programme over time and therefore, would generally be rather resource-intensive. Also, an application of such "direct" techniques may not yield a better quality valuation than an application of more granular gross-to-net techniques as discussed above.

[EBS Rules p20] - Allowance for Counterparty Default

153. The adjustment for counterparty default, as set out in subparagraph 20(2) of the EBS Rules, should be shown separately as part of supplementary notes to the EBS. It should be based on an assessment of the probability of default by the counterparty (whether this arises from insolvency, a dispute or for any other reason) and the average expected loss should the default occur (i.e. loss-given-default). Where the insurer is holding collateral against potential recoveries, then this can be taken into account to reduce the adjustment that would otherwise be needed.

154. Details of any collateral or letters of credit providing security for reinsurance recoveries should be shown as part of supplementary notes to the EBS.

155. The amount of expected losses due to counterparty default will also need to be commented on as part of EBS Actuarial Opinion.

Counterparty Default Calculation Example

156. For example, let the recoverables from counterparty correspond to deterministic payments of C_1, C_2, C_3 in one, two and three years, respectively, and let PD_t be the probability that the counterparty defaults during year t. Furthermore, assume that the counterparty will only be able to make 40% of the payments in case of default - i.e. the loss-given-default is 60%. For the sake of simplicity, this example does not consider the time value of money. The losses-given-default amounts are, therefore, as follows:

Default during year	Loss-given-default
1	$60\% * (C_1+C_2+C_3)$
2	$60\% * (C_2+C_3)$
3	$60\% * C_3$

157. The adjustment for counterparty default in this example is therefore the following: $\text{Adjustment} = 60\% * (PD_1*(C_1+C_2+C_3) + PD_2*(C_2+C_3) + PD_3*C_3)$

158. This calculation should, in principle, be carried out separately for each counterparty and each line of business and in non-life insurance separately for premium provisions and provisions for claims outstanding. This is likely to require the allocation of reinsurance premiums and claims provisions to the line of business. As usual, the

proportionality principles set out in paragraph 8 of the EBS Rules apply when deciding whether simplifications or approximations are appropriate in determining the adjustment.

Probability of default

159. Paragraph 20(2) of the EBS Rules requires that the determination of the adjustment for counterparty default takes into account possible default events over the lifetime of the rights arising from the corresponding outwards reinsurance contract. By extension, allowance needs to be made for the possibility that the counterparty may – after surviving the first year – default at a later stage during the period of the run-off of the recoveries.

160. Among the possible sources of up-to-date, reliable and credible information needed to assess the probability of default of the counterparty are: credit spreads, information from credit rating agencies, information relating to the supervisory solvency assessment and financial reporting information of the counterparty. In line with subparagraph 15(1)(d) of the EBS Rules, the insurer is required to ensure that any information, including third party information, is up-to-date, reliable and credible.

161. The insurer may consider for this purpose methods generally accepted and applied in financial markets (such as based on CDS markets), provided the financial information used in the calculations is sufficiently reliable and relevant for the purposes of the adjustment of the recoveries from reinsurance.

162. In the case of reinsurance recoveries from a special purpose vehicle (SPV), the probability of default should be calculated according to the average credit rating of the assets held by the SPV unless there is a reliable basis for an alternative calculation. When the insurer has no reliable source to estimate its probability of default, the SPV should be considered as unrated.

163. Where possible in a reliable, objective and prudent manner, point-in-time estimates of the probability of default should be used for the calculation of the adjustment – i.e. estimates that reflect the current state of the insurance cycle rather than through-the-cycle estimates which try to determine a long-time average of the default probability. Where point-in-time estimates are used, the assessment should take the possible time-dependence of the probability of default into account. If point-in-time estimates are not possible to calculate in a reliable, objective and prudent manner or their application would not be proportionate, through-the-cycle estimates of the probability of default can be used.

164. In many cases only through-the-cycle estimates may be available. For example, the credit ratings provided by rating agencies are usually based on through-the-cycle assessments. Moreover, the sophisticated analysis of the time dependence of the probability of default may be disproportionate in many cases. Hence, through-the-cycle estimates might be used if point-in-time estimates cannot be derived in a reliable, objective and prudent manner or their application would not be in line with the proportionality principle. If through-the-cycle estimates are applied, it can usually be assumed that the probability of default does not change during the run-off of the recoverables.

165. Often, only the probability of default during the following year is known. The assessment of the probability of default should take into account the fact that the

cumulative probability increases with the time horizon of the assessment – i.e., the probability that the counterparty defaults during the next two years is higher than the probability of default during the next year.

Loss-given-default

166. The loss-given-default is the proportion of the debts that the counterparty will not be able to honour in case of default.

167. Owing to a low number of defaults little empirical data about the loss-given-default figure in relation to reinsurers is available, and hence estimations of loss-given-default are likely to be unreliable and a large degree of judgement is likely to be required. If no reliable estimate of the loss-given-default of a counterparty is available, then a rate no lower than 50% should be used.

168. In line with subparagraph 20(3) of the EBS Rules, the average loss resulting from the default of a counterparty must include an estimation of the credit risk of any risk-mitigating instruments that the counterparty provided to the insurer ceding risks to the counterparty. However, insurers must consider the adjustment for the expected default losses of these mitigating instruments, i.e. the credit risk of the instruments as well as any other risk connected to them should also be allowed for. This allowance may be omitted where the impact is not material. To assess this materiality, it is necessary to take into account the relevant features, such as the period of effect of the risk-mitigating instrument.

Application to outstanding claims and premium provisions and long-term technical provisions

169. For outstanding claims provisions, details of the counterparties underlying notified outstanding reinsurance recoveries may well be available. Assumptions will, however, need to be applied for the counterparties involved with recoveries on IBNR/IBNER. Assumptions here may use the same proportions of reinsurance by credit rating as for reinsurance on outstanding claims, paid reinsurance recoveries or reinsurance premiums for recent years.

170. Assumptions regarding reinsurance recoveries for premium provisions or long-term technical provisions may need to take into account similar historical proportions but will also include assumptions underlying business plans.

171. Any selected assumptions should reflect the nature of the reinsurance programme and any changes in the programme over time – particularly any change in the distribution of reinsurers by rating.

Default due to dispute

172. Subparagraph 20 (1) of the EBS Rules requires the adjustment to take account of expected losses due to counterparty default for whatever reason, including (re)insurer insolvency and contractual dispute.

173. Therefore, the probability of default selected for the adjustment must reflect both expected defaults from insolvency and expected defaults from any other reason –

particularly disputes. When calculating the adjustment, different probabilities of default may, therefore, be selected for reinsurers with the same credit rating based on up-to-date, reliable and credible information as to the additional likelihood of the counterparty defaulting due to disputes. This information is likely to include the recent historical experience of the level of disputes with that counterparty.

174. Where the probability of default is adjusted in this way, the loss-given-default assumption is also likely to vary to reflect the perhaps more likely loss-given-default of 100% arising from disputes.

175. Known disputes with reinsurers must also be reflected in the calculated best estimate reinsurance recoveries, with an attaching probability where the default is not certain.

Simplifications for the counterparty default adjustment

176. Where a separate calculation of default by the counterparty is onerous, especially if the expected loss is small and the probability of default and recovery rate of several counterparties coincides, then the adjustment for these counterparties could be calculated together. In particular, it may be appropriate to calculate the adjustment by grouping together all reinsurers with the same rating.

177. In addition, where appropriate, and in accordance with the principle of proportionality, insurers may calculate the adjustment for expected losses due to default of the counterparty, for a specific counterparty and homogeneous risk group, to be equal as follows:

$$AdjCD = \max (0.5 * PD / (1 - PD) * Dur_{mod} * BE_{rec}; 0)$$

Where:

a. PD denotes the probability of default of that counterparty during the following 12 months;

b. Dur_{mod} denotes the modified duration of the amounts recoverable from reinsurance contracts with that counterparty in relation to that homogeneous risk group; and

c. BE_{rec} denotes the nominal/contractual amounts recoverable from reinsurance contracts with that counterparty in relation to that homogeneous risk group.

[EBS Rules p22 & p23] - Allowance for Management Actions and Policyholder Behaviour

178. Paragraphs 22 and 23 of the EBS Rules set out how management actions and policyholder behaviour (respectively) are to be reflected in the best estimate as the size of the best estimate could be influenced by the policyholder's decision to exercise options open to them as well as management's ability to exercise its discretion.

179. The requirement to assess the policyholder behaviour (which includes the possibility of recaptures for reinsurance transactions) on a prospective basis under

subparagraph 23(1) of the EBS Rules is expected to require some degree of expert judgment.

180. Where assumptions on management actions and policyholder behaviour already exist, these should be used as a starting point but should be reviewed given that the purpose of this valuation may differ from those that already exist.

181. The disclosure requirement, set out in paragraph 23(5) of the EBS Rules, of the allowance for both items could be achieved, for example, by providing the results with and without management actions / with and without dynamic policyholder behaviour assumptions.

182. When considering the impact of economic sensitivities on building stochastic simulation models, assumed management actions may be a key determinant. Examples of possible management actions include:

- Setting future dividends (bonus rates in the UK and/or Europe), including reducing future dividends or smoothing
- Changing the split of bonus rates across policies, e.g. to enable better matching of assets and liabilities
- Changing the asset allocation weight in equities or moving to a dynamic asset allocation
- Changing premium rates, fees and/or credited rates
- The purchase of future reinsurance to cover existing business
- Purchasing hedging options (may be difficult to model)
- Closing to new business

183. Dynamic policyholder behaviour can be extremely difficult to predict and can vary significantly between different blocks of business.

[EBS Rules p25] - Valuation of Material Guarantees and Contractual Options

184. Subparagraph 25(1) of the EBS Rules requires insurers to identify and take into account all material financial guarantees, non-financial guarantees and contractual options included in insurance contracts. When doing so, insurers should also consider the following.

a. The value of options and guarantees would be influenced by the prevailing economic conditions and the likelihood of the policyholder exercising the option.

b. In order to properly value financial options, the insurer would typically need to examine a number of different scenarios.

c. For the simpler and less material options, the analysis may be based on simplified methods, such as closed form solutions or the analysis of selected scenarios. However, for more complex and material options, a range of stochastic scenarios may be required.

d. For valuation purposes, the stochastic scenarios used are typically calibrated to market prices.

185. Financial options and guarantees are features of assets and liabilities whose value changes asymmetrically, given symmetric movements in financial markets.

186. Within insurance contracts, such features typically allow the policyholder the more valuable of two (or more) benefits, with at least one being linked to the level of financial markets.

187. A "guarantee" is deemed to be included within this definition if the policyholder receives the higher of a guaranteed amount and the benefit had the guarantee not been in place.

188. Non-financial options and guarantees typically relate to insurance risk, such as guaranteed mortality charges or guaranteed renewal rates.

189. As part of the requirement set out under paragraph 25 of the EBS Rules, to ensure that all material options and guarantees are identified and taken into account, insurers should analyse all the insurance liabilities and backing assets for material options and guarantees, both financial and non-financial.

190. In principle, for material options and guarantees, stochastic modelling may be required to measure the cost of the options and guarantees.

191. For non-financial options and guarantees, in practice, a range of scenarios can be used to help estimate the potential cost, with weights placed on outcomes based on the likelihood of the scenario arising.

Variable Annuity Guarantees

192. The calculation of the best estimate for business with guarantees (such as variable annuities) can be complex and the purpose of this section is to provide additional guidance.

Variable Annuity Guarantees - Scope of Application

193. The scope of these guidelines applies to insured or reinsured businesses containing guarantees linked to fund performance (including businesses commonly referred to as "variable annuities" (VA)). This includes displaying some or all of the following characteristics: Business with guarantees which are:

a. Usually linked to performance of a fund

b. External to the fund (i.e. not Constant Portfolio Protection Insurance "CPPI")

c. Individual (each guarantee relates to a single client); or

d. Explicitly and separately charged for.

194. Typical contracts include:

- Guaranteed minimum accumulation benefit (return of premium or with some rate of return) (GMAB)
- Guaranteed minimum death benefits (GMDB)
- Guaranteed minimum withdrawal benefits (fixed term or for life) (GMWB/GLWB)
- Guaranteed minimum income benefit (GMIB)
- Guaranteed are explicitly and separately charged

195. The Authority will take the approach of "substance over form". In general, the Authority would have a view that business with fund performance linked guarantees, which is valued using stochastic techniques (or approximations of stochastic techniques), would fall under the scope of this guidance.

196. From the point of view of the reinsurer, if only the guaranteed portion of a contract has been reinsured, the company need only consider the reinsured amount in scope. However, where there is an interaction with parts of the contract that are not reinsured (e.g. the underlying funds) which impact the reinsured contract (e.g. policyholder behaviour in exercising guarantees), the whole contract needs to be taken into consideration.

197. The following contracts are not covered by these guidelines:

a. Fund performance-linked contracts without guarantees (e.g. non-guaranteed unit linked or variable annuity contracts);

b. Some structured contracts (e.g. guaranteed equity contracts where the benefit is directly linked to the payment from the structured asset); or

c. Participating contracts.

Variable Annuity Guarantees - Technical Provisions – General Principles

198. In line with subparagraph 10(4) of the EBS Rules, the value of technical provisions shall correspond to the current amount insurance groups would have to pay if they were to transfer their insurance obligations immediately to another insurer in an arm's length transaction. In line with subparagraph 10(2) of the EBS Rules, this equals the sum of a best estimate and a risk margin where the two components shall be calculated separately unless the technical provisions as a whole approach is used.

199. However, as per subparagraph 37(1) of the EBS Rules, where future cash flows associated with insurance obligations can be replicated reliably using financial

instruments for which a reliable market value is observable, the value of technical provisions associated with those future cash flows shall be determined on the basis of the market value of those financial instruments. In this case, separate calculations of the best estimate and the risk margin should not be required.

200. For variable annuity business, the best estimate calculation will normally be calculated based on stochastic techniques using a model calibrated to the relevant market. Under the principle of proportionality, companies may choose other techniques or approximations for less material business.

201. In line with subparagraph 15(2) of the EBS Rules, the best estimate gross of any recoverable amounts, from outwards reinsurance contracts, and the corresponding best estimate of the recoverable amounts shall be calculated, and be able to be shown, separately.

Variable Annuity Guarantees - Calculation Methodology

202. Where the insurer uses a model to produce future projections of market parameters the model requirements under subparagraph 9(4) apply: such model shall comply with the following requirements -
a. It shall be risk neutral;
b. It generates prices that are consistent with deep, liquid, and transparent financial markets;
c. It assumes no arbitrage opportunity;
d. The calibration of the parameters and scenarios used is consistent with the relevant risk-free interest rate term structure used to calculate the best estimate.

203. The following principles should be taken into account in determining the appropriate calibration of a market consistent asset model:

a. The asset model should be calibrated to reflect the nature and term of the liabilities, in particular of those liabilities giving rise to significant guarantee and option costs.

b. The asset model should be calibrated to the current risk-free term structure used to discount the cash flows; and

c. The asset model should be calibrated to a properly calibrated volatility measure.

204. The calibration process shall use market prices only from financial markets that are deep, liquid and transparent, in line with the requirements of the Rules referred to in paragraph 202 above.

205. The calibration of the above-mentioned assets models may also be based on an adequate actuarial and statistical analysis of economic variables provided they produce market-consistent results, for example:

- To inform the appropriate correlations between different asset returns.

- To determine probabilities of transitions between credit quality steps and default of corporate bonds.

206. The model and modelling process must be sufficiently accurate in that:

a. If model points are used, the company must be satisfied that the model points are appropriate to the business being valued and sufficiently represent duration, moneyness, and fund choice;

b. The model must have sufficient iterations to ensure that a reliable result is being produced. Generally more iterations are required for more complex products and for options which are "out of the money";

c. The model should be able to reproduce values of relevant market instruments and the assets of the company (particularly any hedging assets); and

d. The time steps used must be sufficiently small to capture the essential features of the product and the hedging strategy.

207. For less material business (and potentially business that is heavily out of the money) alternative techniques may be used to determine the best estimate. This could include:

- Closed-form solutions
- Stress and scenario testing
- Systematic as well as other random features being captured through sensitivity testing, diagnostics or other techniques (this could be stochastic)
- The use of relevant assumptions or other external/portfolio specific data as an input to the calculation when there is a lack of data or as a benchmark for comparison

Hedging

208. The costs and inefficiencies involved in any hedging process should be included in the best estimate, including:

a. Basis risks

b. Market risks

c. Liquidity risks

d. Counterparty risks

e. Operational risks (e.g. delay risk, model risk, errors in hedging, legal risks)

209. The allowance for hedging costs and charges in determining the best estimate should be consistent with the hedging programme.

Variable Annuity Guarantees - Cash Flow Characteristics

210. In line with subparagraph 16(3) of the EBS Rules, insurers must take into consideration the cashflow characteristics relating to variable annuities including:

a. (EBS Rules, subparagraph 16(3)(e)) uncertainty in policyholder behaviour - It is necessary to make assumptions regarding choice of whether to continue paying premiums, choice of whether to switch funds, choice of whether to surrender or not, choice of whether to exercise formal options available (e.g. GMWB). Allowance for this behaviour should not just be based on past experience but also anticipated experience based on economic circumstances, and the "moneyness" of guarantees. For reinsured business, it should also take into account the actions of the cedant as well as the underlying policyholders.

b. (EBS Rules, subparagraph 16(3)(g)) dependency of cash flows on circumstances prior to the date of the cash flow - Path dependency, where the cash-flows depend not only on circumstances such as economic conditions on the cash-flow date, but also on those circumstances at previous dates. A cash-flow with path-dependency would need additional assumptions as to how the level of the equity market evolved (the equity market's path) over time in order to be valued;

c. (EBS Rules subparagraph 16(3)(c)) uncertainty in the amount of expenses or fees - for example a common form of VA involves a guarantee given and charged for by deduction of a regular fee, either as a percentage of assets or a fixed monetary amount;

d. (EBS Rules, subparagraph 16(3)(f)) the dependency between two or more causes of uncertainty.

211. Additionally, in line with subparagraph 22(1) of the EBS Rules, insurers must ensure that the best estimate calculation for variable annuities reflects potential management actions of the insurer, such as changes in asset allocation; management of liquidity according to the asset mix and duration strategy; actions for the dynamic rebalancing of the assets portfolio according to movements in liabilities and changes in market conditions. Insurers must ensure compliance with the balance of the requirements as set out in paragraph 22 of the EBS Rules when allowing for management actions.

Variable Annuity Guarantees - Time Horizon

212. In line with subparagraph 16(1) of the EBS Rules, the cash flows applied in the calculation of the best estimate shall include all future cash in- and out-flows required to settle insurance obligations relating to this product.

213. In line with subparagraph 15(1)(d) of the EBS Rules, the determination of the lifetime of insurance and reinsurance obligations should be based on up-to-date, reliable, and credible information and realistic current assumptions about when the existing insurance and reinsurance obligations will be discharged or cancelled or expired.

Variable Annuity Guarantees - Risk Margin

214. For variable annuity business, it is recognised that the calculation of the risk margin may be onerous. In addition, some simplifications that work for non-variable annuity contracts may not be appropriate for variable annuity products as the run off of capital requirements may not be linear. Companies can use additional approximations such as combinations of the simplifications set out above or other simplifications such as:

a. Calculation of the SCR at various intervals with interpolation between.

b. Calculation of the SCR at inflexion points (i.e. where the SCR starts or stops growing/falling)

c. Other methods appropriate to the business provided that they meet the principles set out in this guidance. Details of the proposal must be provided in the response.

Variable Annuity Guarantees - Use of reinsurance or structured financial products

215. For variable annuity business some additional, product-specific considerations are required when allowing for counterparty risk:

a. The same models should be used to calculate the asset as that used to model the underlying VA business.

b. The model should take into consideration the extent to which the credit risk is correlated with the investment market risks (wrong way risk).

c. Allowance should be made for any basis risk or mismatch between the benefits promised to policyholders and those reinsured or provided by the structured asset.

216. If a company can demonstrate that it has transferred risks to another entity then it may wish to consider applying a simplified approach to valuing the best estimate of those risks provided the resulting net assets in the economic balance sheet are not overstated.

[EBS Rules p27] - Discounting - 'Standard Approach'

Overview

217. In recognition of the fact that most insurers have significant liabilities that are typically not fully liquid, all insurers will be permitted to include an adjustment to the risk-free rate to partially reflect the illiquidity premium implicit in the underlying assets held and avoid artificial volatility on their balance sheets. This also has the aim of preventing pro-cyclical investment behaviour by mitigating the effect of exaggerations of bond spreads.

218. Discount rates for this approach will be provided by the Authority for the same currencies as the risk-free rate. They will be determined as follows:

a. The starting point is the risk-free yield curve.

b. A liquidity adjustment is added to these rates. This liquidity adjustment is based on current yields for a representative asset portfolio and is reduced to reflect the cost of defaults and ratings class transitions and multiplied by an uncertainty margin.

c. For simplicity, the representative asset portfolio is based solely on corporate bonds of various ratings classes and durations. Published bond data is used where it is readily available; for currencies where liabilities are much smaller or the available assets more limited, approximations may be used. The Authority currently uses Bloomberg as the source of data, although other sources may be used in future. The yield curve is built using the same Nelson-Siegel-Svensson method used to develop the yield curve for sovereign bonds. The gross spread over the risk-free curve is then smoothed to mitigate against noise in the results.

d. The adjustment for the cost of defaults and transitions is also market-based where feasible. Currently, this data is taken from EIOPA for different combinations of maturities ratings classes and financial vs. non-financial companies, although other sources (such as Standard & Poor‘s (S&P)) may be used in future.

e. The uncertainty margin is currently 35%.

f. The spread net of default costs and transitions is calculated as above for durations 1-15 and remains level thereafter.

Risk Free Discount Rates and Adjustments

219. The risk-free yield curve is based on swap rates that are adjusted down by 10bp to reflect credit risk and that are extrapolated to an ultimate forward rate (UFR) at a duration 60 and then extended to a duration of 100 years. This curve will be provided quarterly by the BMA for six major currencies (USD, CAD, GBP, CHF, JPY, AUD, and NZD). For the EUR and HKD the rates published by the European Insurance and Occupational Pensions Authority and Hong Kong Insurance Authority should be used, respectively[1].

220. The UFR will be set at a single rate across all currencies in recognition of the difficulty of projecting national differences over such a long time span.

a. The UFR will initially be set at 4.2%

221. It is anticipated that the UFR may be recalibrated from time to time if there is a material change in long term expectations (such as occurred between the 1970’s and the present date).

222. Interest rate swaps that cover a period no longer than a specified duration (the “Last Liquid Point”, or LLP) are used to develop the yield curve; however, in recognition of the fact that the swap market is thin in certain jurisdictions, sovereign bonds are first used to establish the smooth shape of the curve before it is adjusted using the swap spreads.

[1]The subsequent four paragraphs of this Guidance Note are not applicable for these two currencies.

223. The LLP will be set equal to 30 years for all currencies.

224. The steps for producing each yield curve are as follows:

a. Sovereign bond prices as of the specified date (31 December) are input to a Nelson-Siegel-Svensson process with a pre-specified beta parameter (the UFR). This results in a preliminary yield curve of spot rates extending to 100 years where the corresponding year 100 forward rate is equal to beta.

b. Spot rates corresponding to the selected swaps are estimated; if swaps are not available at the LLP, then that value is estimated using differences from the sovereign bond curve from the previous step.

c. Spreads of the selected swaps over the preliminary yield curve are calculated and any missing values are estimated using linear interpolation (selected for simplicity).

d. The resulting spreads from duration 1 to the LLP are combined with a zero spread at year 60 and then smoothed and interpolated using cubic splines.

- This method has been found to provide reasonable results while matching first and second derivatives at the LLP.

e. The smoothed and interpolated spreads are adjusted down to reflect a 10bp credit spread (as referred to in paragraph 219) and added to the yield curve from the first step.

f. A final linear adjustment is applied to the spot rates between the LLP and year 60 to ensure that the final UFR is equal to the pre-specified value.

[EBS Rules p34] - Calculation Principles Specific to General Business

225. In addition to the requirement, under subparagraph 34(2) of the EBS Rules, for the best estimate to be shown separately for outstanding claims provisions and premium provisions, the best estimate of reinsurance recoveries shall also be shown separately for outstanding claims and premium provisions.

Outstanding Claims Provisions

226. The outstanding claims provisions, as defined under paragraph 34 of the EBS Rules, and in conjunction with the cash flows to be included in the calculation of technical provisions under subparagraph 16(1) of the EBS Rules, must also include allocated and unallocated loss adjustment expenses, any relevant administrative expenses, investment expenses, and overhead expenses.

227. The Authority recognises that certain GAAPs already have a requirement that technical provisions be stated at (undiscounted) best estimate levels. Although the definition of 'best estimate' may not be precisely the same as the definition stated in the Authority's EBS framework, it may still be acceptable to set the EBS best estimate by discounting the existing GAAP technical provisions, providing that there are no margins for prudence included, and additional appropriate allowance is made for other

expenses that are included in EBS technical provisions, but typically not included in the GAAP reserves – in particular investment-related expenses.

228. The insurer should disclose the amount of the discount adjustment applied to the outstanding claims best estimate in a supplementary note to the EBS.

Premium Provisions

229. In line with the definition of the premium provisions provided under subparagraph 34(3) of the EBS Rules and the cash flows to be included in the calculation of technical provisions under subparagraph 16(1) of the EBS Rules, the premium provisions calculation must include the following cash flows:

a. Cash flows from future premiums falling within the contract boundary;

b. Cash flows resulting from future claims events (taking into account the potential for claims that have very high severity but with a low probability of occurrence);

c. Cash flows arising from allocated and unallocated loss adjustment expenses; and

d. Cash flows arising from ongoing administration of the in-force policies, including any commission payments, any premium collection costs and investment related expenses.

230. It is noted that the present value of cash in-flows may exceed the expected present value of cash outflows for premium provisions, particularly of a policy with premiums payable in instalments that is expected to be profitable. This could result in a negative amount for premium provisions – there is no need to eliminate such negative amounts.

231. It may be appropriate for the premium provision to be derived using approximations based on the existing GAAP Unearned Premium Reserve (UPR), allowing for a premium deficiency reserve where appropriate:

a. One approximation might be to take the existing UPR (together with any premium deficiency reserve) and deduct the existing GAAP Deferred Acquisition Costs (DAC). The value of expected future premiums would also be deducted. There would be no further discounting of claims payments, or addition of investment expenses, as these are implicitly included in the UPR amount. It should be noted that this approximation does not recognise any implicit profit in the UPR may well result in an over-estimation of the true premium provision, which could be material for some lines of business.

b. An alternative simplification might be to apply expected future loss and expense ratios to the UPR to derive expected future claims and expense payouts and then apply appropriate claims pay-out patterns to derive cash flows for discounting. Care would be needed over the choice of relevant future loss and claims ratios. Relevant ratios forming part of next year's business plan may well also cover future business written after the valuation date on different premium rating strengths and terms and conditions, and so may need further adjustment for use for premium provision calculations.

232. Where approximations have been used for outstanding claims or premium provisions, there should be an appropriate supplementary note disclosure. In addition, the EBS Actuarial Opinion would need to explain why the approach adopted is considered reasonable/appropriate.

Possible Simplifications for General Business Premium Provisions

233. The premium provision is the expected present value of future cash flows relating to future claim events on existing policies. One approach to calculating this element of the best estimate is using a loss ratio approach – whereby a "loss ratio" is applied to the unearned premium to come up with an estimation of the total undiscounted claims and expenses. A payment pattern can then be applied to generate future cash flows that can be discounted and summed to generate a present value.

234. The selected "loss ratio" should represent the expected ultimate experience of the unearned premium. When selecting a suitable "loss ratio" the following points should therefore be considered:

a. The "loss ratio" should allow for claims and any claims-related expenses that have not been separately allowed for.

b. The "loss ratio" will also need to reflect any additional expenses that will be incurred in respect of this business, including any remaining acquisition-related expenses, investment related expenses and administrative expenses.

c. The selected "loss ratio" needs to be consistent with the written and unearned business, bearing in mind the underlying assumptions around premium rating strength and terms and conditions.

d. The "loss ratio" should give appropriate consideration to the expected incidence and cost of future claims, including consideration of the likelihood of infrequent, high-severity claims and latent claims.

e. The "loss ratio" should be determined at a suitable level of granularity.

f. Inflation associated with claims and claims-related expenses should be allowed. It is usually implicitly allowed for in data, with the assumption that future inflation will continue in the same way as historical inflation. Any deviation from this assumption should be considered and documented carefully, particularly given the recent very low levels of inflation currently being experienced in many countries.

g. Where historical experience is used to assess the appropriate "loss ratio", adjustments may be required to adjust the historical experience to the future exposure period covered by the unearned premium. Such adjustments may take account of, for example, changes in:

- Exposure
- The rating or legal environment
- Policyholder behaviour

- Business mix
- Seasonality (such as the hurricane season).

h. The selected "loss ratio" should not include margins for optimism or conservatism.

Bound but not incepted (BBNI)

235. An example of policies falling under the definition of BBNI, as defined under subparagraph 34(8) of the EBS Rules, for a 31 December valuation date might be policies due to start on or after 1 January the following year.

236. The insurer should disclose the amount of the premium included as BBNI business, along with the technical provisions determined for this business, in a supplementary note to the EBS.

237. Typically, 1 January renewal business would be expected to be included in the technical provisions, as BBNI, for a valuation as of 31 December.

238. In line with the definition of premium provisions under subparagraph 34(3) of the EBS Rules and the cashflows to be considered in the calculation of the technical provisions under subparagraph 16(2) of the EBS Rules, BBNI premium provisions must take account of expected profits and of the time value of money over the period until settlement of the relevant cash out-flows. In such circumstances, the best estimate may well be negative – in other words the BBNI business is being treated as an asset of the company. Insurers are not required to set the value of the best estimate to a minimum of zero.

239. The allowance of profit for BBNI premium provisions requires an allowance for associated cancellations or lapses, for example, in calculating an estimate of what proportion of any "tacit" renewals will be accepted by the customer(s).

240. The cash inflows and outflows in respect of BBNI premium provisions need not necessarily be calculated separately. In line with subparagraph 19(1) of the EBS Rules, the Authority expects outwards reinsurance treaties to have a treatment consistent with the one followed for the underlying contracts whose risks these treaties are covering but also reflective of the underlying legal and economic substance of these treaties. The Authority may consider on a case-by-case basis different treatment for multi-year contracts where there may be potential mismatches between underlying insurance contracts (e.g. written on a multi-year basis) and associated outwards reinsurance treaties (e.g. written on a one-year basis and renewed annually).

241. The estimated claims on BBNI business may in principle be estimated in a similar way to that set out for premium provisions and can make use of the simplifications set out in paragraphs 233 - 234 above. However the exposure period of BBNI business is after the valuation date and this distinguishes it from the remainder of the premium provisions. This specific aspect needs to be allowed for when making assumptions for BBNI business, for example, around appropriate "loss ratios", claims inflation and underlying terms and conditions.

Events Not In Data Set (ENIDS)

242. It is recognised that a probability-weighted average of future cash flows is an aim, not a requirement, and that it may not be necessary to explicitly identify all such scenarios in the valuation, or apply stochastic valuation techniques. Traditional valuation methodologies common in Long-term insurance and general insurance may be capable of adequately allowing for all possible scenarios. However, due regard would need to be paid to events that may not be adequately reflected in the data used for such traditional approaches (these events have been referred to in the recent past as 'Binary Events', but the scope is wider than remote but potentially severe events, and they are now often referred to as ENIDS – i.e., Events Not In Data Set.

243. Although these events are sometimes referred to as 'binary events' or 'extreme events', such terms suggest that events not found in the data are necessarily extreme or rare. This is not necessarily the case, and so they are now often referred to as " ENIDS" – i.e. Events Not In Data Set.

244. The approach to ENIDs should be governed by a judgmental (but well-informed) assessment of the tail risks that apply to the portfolio being reviewed. The aim is to reflect the full range of outcomes in the best estimate. The intention is not to create a margin in the best estimate, and the best estimate assumptions should not include any explicit margin for uncertainty for ENIDS.

245. In some situations, an insurer may conclude that the available historical claims data set is sufficiently extensive and credible that it covers the full distribution of outcomes, and therefore no additional allowance for ENIDS is needed.

246. In other situations, however, insurers may conclude that the available historical claims data set is not representative of the full distribution of outcomes and in these circumstances, they may decide to adjust the projection of future claims that underlies the best estimate to allow for the "missing tail" of experience.

247. Any such adjustment for ENIDS should not be carried out arbitrarily. Applying a simple percentage uplift to technical provisions without justification is not an appropriate approach.

248. A possible approach to calculating an allowance for ENIDS is to calculate the best estimate reserve separately under the assumption that an ENIDS does or does not occur. The two projections could then be combined using probability weighting.

249. An alternative approach would be to add an explicit amount or loading to the best estimate reserve, providing that any such loading is based on a robust and justifiable analysis.

250. Where outliers are removed from the data as part of the reserving process, this removes events from the data. Insurers should make an allowance for this in the technical provisions calculation unless they have shown that it would not be possible for these or similar events to occur again in the future.

251. It is a helpful exercise to formally document the elements that are considered in the best estimate assumption setting process. This would help to avoid, within the ENIDS

assessment process, the possibility of risks either being ignored or their costs being double counted.

[EBS Rules p35] - Calculation Principles Specific to Long-Term Business

252. In certain circumstances, the best estimate element of technical provisions may be negative (e.g. for some individual contracts). Insurers should not set the value of the best estimate with respect to those contracts to zero.

253. In relation to subparagraph 35(4) of the EBS Rules, it is further clarified that if the best estimate of a contract is lower than the surrender value of that contract, there is no need to increase the best estimate to the surrender value of the contract.

Technical Provisions – Risk Margin and Technical Provisions as a Whole

[EBS Rules p36] - Risk Margin

254. Technical provisions include a risk margin, in addition to the best estimate, to reflect the uncertainty associated with the probability-weighted cash flows. Whilst, in principle, the best estimate reflects the amount required on average to meet policyholder obligations and associated insurer expenses, the insurer will also need to hold additional funds to meet those situations where cash flows exceed those expected. The risk margin is intended to reflect the compensation that the insurer needs to bear this risk.

255. The risk margin should meet the following characteristics:

a. The greater the uncertainty associated with the cash flows, the larger the risk margin;

b. Risks which are more material, all else being equal, will result in a larger risk margin;

c. Risks which persist for longer, all else being equal, will result in a larger risk margin; and

d. Similar risks should give rise to similar risk margins.

Determination of the Risk Margin

256. The Cost-of-Capital rate (CoC) to be used for the calculation of the risk margin under paragraph 36 of the EBS Rules is 6%.

257. Further clarifications relating to the $ModECR_t$ component of the risk margin under paragraph 36 of the EBS Rules -

a. Market risk does not need to be included within the $ModECR_t$, except where non hedgeable market risk is material (for example for variable annuity products), as it is assumed that the asset portfolio would be adjusted to be consistent with assets held

to justify a risk free portfolio.

b. For the avoidance of doubt, when calculating the $ModECR_t$, the insurer may take credit for diversification between lines of business and risk types consistent with the assumptions underlying the BSCR model (or their approved internal model) when calculating the risk margin.

258. The Authority supplied a template for general business and for long-term business to assist insurers in better understanding how the risk margin might be calculated. Both templates make use of several simplifications, which might or might not be appropriate for individual insurers. Insurers are invited to adopt more appropriate calculations wherever possible.

Use of approximations for the best estimate and the risk margin

259. The choice of the method to calculate the risk margin should be proportionate to the nature, scale and complexity of the risks undertaken by the insurer.

260. Examples of simplification methods in the guidance should not be viewed as a closed list. Insurers are in the best position to determine the best approach for them according to their circumstances.

261. Insurance groups, for the 2024YE and 2025YE submissions, may elect to make increased use of simplifications in determining their group risk margin. In such cases, the simplifications used should be within the criteria set out in this Guidance Note. Additionally -

a. Insurance groups should demonstrate that the simplifications used are suitable by including the following information in their regulatory actuarial Opinions submitted to the Authority:

i. Summary of the main simplification methodologies used and key underlying assumptions (including materiality thresholds/standards where applicable);

ii. In case of immaterial legal entities being aggregated, a table with the best estimate liabilities should be provided showing how these have been aggregated up from the legal entity level;

iii. Loss Reserve Specialist and/or Approved Actuary attestation that the simplifications do not materially understate the Group Risk Margin, along with an explanation or rationale as to how this conclusion has been reached and confirmation that supporting evidence is readily available upon the Authority's request.

b. Groups should maintain detailed internal documentation of the simplifications used along with numerical and technical support of their suitability that should be readily available for the Authority's review upon request.

Further clarity on risk margin (Long Term excluding Variable Annuities)

262. Insurers should assess whether a full projection of all future BSCR is necessary in order to reflect the nature, scale and complexity of the risks underlying the reference insurer's insurance and reinsurance obligations in a proportionate manner. In such cases, insurers should carry out these calculations. Otherwise, alternative methods may be used to calculate the risk margin, provided that the method chosen is adequate to capture the risk profile of the insurer.

263. Where simplified methodologies are used to calculate the best estimate, the insurers should assess the consequential impact that the use of such methodologies may have on the methods available to calculate the risk margin, including the use of any simplified methods for projecting the future BSCRs.

Approaches for the calculation of the risk margin:

264. When deciding whether an approach is appropriate, insurers should ensure that the complexity of the calculations does not go beyond what is necessary in order to reflect the nature, scale and complexity of the risks underlying the reference insurer's insurance and reinsurance obligations in a proportionate manner.

265. Insurers should use approaches consistently which recognise the proportionality principle and the necessity of assessing risks properly.

266. Some examples of possible approaches are presented in the next six paragraphs.

267. Example 1 – To approximate the individual risk capital charges or sub-components within some or all risk capital charges to be used for the calculation of future BSCR. This approach is used in the sample Risk Margin Calculators available on the BMA website.

268. Example 2 – To approximate the BSCR for each projection year by using the ratio of the best estimate in the future to the best estimate at the valuation date.

a. This method may not be appropriate when negative best estimate values exist at the valuation date or subsequent dates.

b. Other risk drivers may also be used as alternatives to the best estimate, such as amount at risk or annualized premium.

c. This method takes into account the maturity and the run-off pattern of the obligations net of reinsurance. Consequently, some considerations should be given regarding the manner in which the best estimate net of reinsurance has been calculated. Further consideration should be given as well as to whether the assumptions regarding the risk profile of the insurer can be considered unchanged over time. This includes:

i. For all underwriting risks, to consider if the composition of the sub-risks in underwriting risk is the same;

ii. For counterparty default risk, to consider if the average credit standing of

reinsurers and special purpose vehicles is the same;

iii. For operational risk, to consider if the proportion of reinsurers' and special purpose vehicles share of the obligations is the same;

iv. For adjustment, to consider if the loss absorbing capacity of the technical provisions in relation to the net best estimate is the same.

d. If some or all of these assumptions do not hold, the insurer should carry out at least a qualitative assessment of how material the deviation from the assumptions is. If the impact of the deviation is not material compared to the risk margin as a whole, then this method can be used. Otherwise, the insurer should either adjust the formula appropriately or be encouraged to use a more sophisticated method.

269. Example 3 – To approximate the discounted sum of all future BSCRs in a single step without approximating the BSCR for each future year separately, inter alia, by using the modified duration of the insurance liabilities as a simplifying assumption.

a. When deciding on the application of a method based on the modified duration of the insurance liabilities, attention should be paid to the value of the modified duration to avoid meaningless results for the risk margin.

b. This method takes into account the maturity and the run-off pattern of the obligations net of reinsurance. Consequently, some considerations should be given regarding the manner in which the best estimate of technical provisions net of reinsurance has been calculated. Further consideration should be given as to whether the assumptions regarding the risk profile of the insurer can be considered unchanged over time. This includes:

i. For basic BSCR, to consider if the composition and the proportions of the risks and sub-risks do not change materially over the years;

ii. For counterparty default risk, to consider if the average credit standing of reinsurers and SPVs remains broadly the same over the years;

iii. For operational risk and counterparty default risk, to consider if the modified duration is the same for obligations net and gross of reinsurance.

c. An insurer that intends to use this method should consider to what extent these assumptions are fulfilled. If some or all of these assumptions do not hold, the insurer should carry out at least a qualitative assessment of how material the deviation from the assumptions is. If the impact of the deviation is not material compared to the risk margin as a whole, then the simplification can be used.

d. Otherwise, the insurer should either adjust the formula appropriately or be encouraged to use a more sophisticated method.

270. Example 4 – To approximate the risk margin by calculating it as a percentage of the best estimate.

a. According to this method, the risk margin should be calculated as a percentage of the

best estimate net of reinsurance at the valuation date. When deciding on the percentage to be used for a given line of business, the insurer should take into account that this percentage is likely to increase if the modified duration of the insurance liabilities – or some other measure of the run-off pattern of these liabilities - increases.

b. Insurers should give due consideration to the very simplistic nature of this approach; it should be used only where it has been demonstrated that none of the more sophisticated risk margin approaches in the above hierarchy can be applied.

c. When insurers rely on this method for the calculation of the risk margin, they will need to justify and document the rationale for the percentages used by line of business. This justification and rationale should consider any specific characteristics of the portfolios being assessed. Insurers should not use this method when negative best estimate values exist.

271. Example 5 – To approximate the group risk margin by estimating an aggregate legal entity risk margin for an immaterial group of legal entities.

a. According to this method, when an insurance group has several small insurance entities, it may elect to group them and produce a single aggregate legal entity risk margin for that group.

b. Insurance groups must ensure that any simplifications comply with the requirements of paragraph 8 of the EBS Rules; this would include assessment of:

i. Whether the legal entities in scope have comparable (i.e. operational, reporting, risk…) characteristics that would support their aggregation.

ii. Whether the group risk margin with and without the simplification is materially different.

272. Example 6 – To approximate the group risk margin where some of the legal entity risk margins are calculated using assumptions not directly parameterised from the exposures of that legal entity.

a. According to this method, the insurance group may elect to calculate the risk margin for some of its legal entities based on assumptions that are not directly parameterised from the exposures of these same legal entities but instead are parametrised to similar exposures, such as the exposures of other subsidiaries, or the whole insurance group, that have a similar risk profile.

b. Insurance groups must ensure that any simplifications comply with the requirements of paragraph 8 of the EBS Rules.

[EBS Rules p37] - Technical Provisions as a Whole

273. In addition to the requirement set out under subparagraph 37(5) of the EBS Rules, to be used in the replications, the financial instruments should be traded in markets that satisfy the following criteria:

a. A large number of assets can be transacted without significantly affecting the price of the financial instruments used in the replications;

b. Assets can be easily bought and sold without causing a significant movement in the price; and

c. Current trade and price information are readily available to the public and in particular, to the insurer.

Technical Provisions – Miscellaneous and Supplemental

[Instructions affecting EBS Rules] - Sixteen (16 Year Transitional Arrangements for Long-Term Business

274. The transition adjustment described under Instructions affecting the EBS Rules requires both reserve calculations to be performed each year. Thus, as business terminates, it will disappear from both the EBS and current reserve component in the formula.

275. The transition adjustment related to the Technical Provisions should be incorporated into lines 20 – 27 of the EBS balance sheet. The transitional adjustment related to the Risk Margin should be incorporated into line 27A.