Provisional AM for Use in the Comparability Assessment

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1 Introduction

1.1 Purpose

1. This document describes the Aggregation Method (AM) for use in the IAIS' assessment of whether it provides comparable outcomes to the Insurance Capital Standard (ICS). This builds on the Level 1 document that was released in 2020 and the AM Data Collection package which is released annually by the IAIS. This document describes: (i) principles for the AM approach, (ii) a provisional AM which will serve as the basis for comparison to the candidate ICS during the IAIS' comparability assessment and (iii) steps planned for the finalization of the AM, including further analysis on scalars and decision on a final methodology that delivers comparable outcomes to the ICS.

2. Further documentation will be provided as the AM is finalized after the results of the comparability assessment.

1.2 History/Background

3. The AM was introduced as an alternative group capital approach for interested jurisdictions to apply to Internationally Active Insurance Groups (IAIGs).[1] The goal of the AM is to leverage legal entity reported available and required capital to produce a measure of group capital adequacy.

4. At the November 2017 IAIS Meeting, the IAIS agreed to collect data from US-based IAIGs and any other willing jurisdiction/volunteer at the option of the group-wide supervisor to assist the US and other interested jurisdictions in the development of the AM, through an annual AM Data Collection. In so doing, the IAIS aims to be in a position by the end of the monitoring period to assess whether the AM provides comparable, i.e. substantially the same, outcomes to the ICS and if so, it will be considered an outcome-equivalent approach for implementation of the ICS as a PCR[2].

5. At the November 2019 IAIS Meeting, the IAIS agreed on the definition of comparable outcomes and an overarching approach to guide the development of high-level principles (HLPs) and criteria[3]. The IAIS also agreed at this meeting to move forward into a five-year monitoring period from 2020 through 2024, during which optional reporting of the AM would be permitted, at the discretion of group-wide supervisors. As stated in the resulting workplan: "in support of the work on the comparability assessment, there will be an annual AM data collection" with timing that will be "similar to that for the ICS confidential reporting"[4].

6. In March 2023, the IAIS released the final HLPs and criteria for use in the comparability assessment. These were developed through a deliberate process, including two rounds of consultation to ensure that "the AM is neither precluded at the outset as an outcome equivalent approach to the ICS for measuring group capital, nor given a free pass".[5] The 2023 AM Data

[1] During the monitoring period, other interested Volunteer Groups that do not meet the definition of an IAIG may choose to participate in the annual AM Data Collection exercise, at the option of their group-wide supervisor.
[2] Implementation of ICS Version 2.0, IAIS 2 November 2017
[3] Explanatory Note on the ICS and Comparability Assessment, IAIS 14 November 2019
[4] Work Plan and Timeline 2020-24, IAIS 14 November 2019
[5] Public Consultation on the Draft Definition and High Level Principles[…], IAIS 09 November 2020

Collection package included updated schedules for reporting data relevant to the comparability assessment. The results of the comparability assessment will be released in 2024.

1.3 AM Development

7. A useful group capital approach provides supervisors with meaningful and reliable information about the solvency risks presented by and to IAIGs. The AM is adaptable to the diverse business models, product designs, and risk management approaches employed by insurance groups around the world that create resilience within the insurance sector. Because the AM relies on a fully transparent methodology and is built on existing legal entity requirements, it helps contribute to the overall stability of the insurance sector as a ready and sound capital framework for detecting a need for appropriate supervisory intervention.

1.4 AM Data Collection

8. The annual AM Data Collection has a template, specifications and questionnaire that are released annually.[6] The template can calculate the provisional AM as well as other possible versions of the final AM and also includes data to assist with the comparability assessment. If the final version of the AM has different parameters than the provisional AM, the results from prior years can be recalculated retrospectively via data already collected.

9. Since its beginning in 2018, the AM Data Collection has expanded to include 21 groups from 5 countries and includes jurisdictional level data from every major insurance market. This data was used to develop the provisional AM (see Section 3) and to analyze the full range of scaling options that are being considered for use in the final AM (see Section 4).

10. In addition to use in development of the AM, the 2023 AM Data Collection will be used in the comparability assessment. This includes the application of scenarios for the AM and ICS, data on local capital regimes, and ICS results. There is 100% participation from US life IAIGs in the ICS and AM Data Collections. All US non-life IAIG's are participating in the AM Data Collection and an approximation tool was developed and will be used to calculate their ICS results. For US RBC filing legal entities, there is additional data obtained through filings that can be used for an analysis of correlation over the business cycle (see Appendix 1). Lastly, the IAIS is requesting that supervisors provide information about the treatment of risks and capital in their local regime for use in the comparability assessment. See Appendix 3 for examples of completed data collection tables for the US RBC framework.

2 Design Principles

11. The AM is built on proven capital regimes that have been designed to ensure solvency in each legal entity. As such, the AM provides a lens into group capital that allows supervisors to analyze, identify and address capital amounts at the group level as well as where deficiencies may reside at the local legal entity level. Information surrounding capital resources held by each legal entity comes from the legal entity level reporting. Group capital resources and requirements are derived from the aggregation of legal entity-level reporting.

[6] https://www.iaisweb.org/activities-topics/standard-setting/comparability-assessment/aggregation-method-data-collection/

12. Guiding principles of the AM concept:

    - Indifferent to Corporate Structure: Location of an entity within the group and/or intragroup transactions do not impact group-level results.
    - Reflective of Appropriate Capital Regimes: Differentiated treatment for insurance/financial entities under existing capital regimes and application of appropriate alternatives for non-insurance entities. This leverages existing solvency frameworks and jurisdictional-tailored approaches to risk.
    - Transparency: Clear line of sight to where risks reside and capital is held. Provides supervisors with information for assessing risks at the legal entity level within the group.
    - Comparability: Group level results reflect comparable levels of risk through scaling of entity results.

13. The AM calculation has five components. These components are described further in the 'Provisional AM' section of this document. The final version of the AM will include these same components:

    - Inventory & Group Financials
    - Adjustments
    - Capital Requirements
    - Capital Resources
    - Aggregation

14. Using these principles and information from the AM Data Collection, the US and other interested jurisdictions have developed a provisional AM to serve as the basis for comparison to the Candidate ICS in the IAIS comparability assessment. While the final version of the AM will follow the same design as the provisional AM, ultimately some parameters (particularly scalars) may be subject to change based on further analysis on the annual data collection and the results of the comparability assessment. There is an ability to back-test the AM, applying a variety of parameters with the data collected.

15. When introduced in ComFrame, IAIG capital reporting to group-wide supervisors and public disclosure requirements, including their content, granularity, and frequency, will also apply to the final version of the AM. Results of the implemented capital standard – including but not limited to the template, available capital and required capital – would be reported to the group-wide supervisor. Documentation of the capital standard – specifications, template, scalars, etc. – would be publicly disclosed and updated as required under ComFrame.

3 Provisional Aggregation Method

16. The following section describes the five components of the provisional AM.

3.1 Inventory & Group Financials

3.1.1 Scope

17. The starting point for the AM is the Consolidated Holding Company or Controlling Insurer in the case of a mutual insurer structure. All entities within the defined insurance (or financial) group are included. This is consistent with the perimeter of the calculation of the Candidate ICS and consistent with IAIS Insurance Core Principle (ICP) 23, Group-wide Supervision.

18. The AM is based on regulatory reporting at the legal (or local) entity level. This reporting is used to populate a schedule that separately lists the legal entities within the group and includes their available and required capital plus other relevant financial information. All figures are converted to a common reporting currency using exchange rates provided in the technical specifications.

19. Most legal entities are reported separately, however for simplification purposes, certain legal entities can be grouped or 'stacked' together. When the capital ratio is the same, regardless of whether a legal entity is stacked or de-stacked, then only the parent entity may be reported. Examples would include immaterial legal entities and non-insurance/non-financial entities that are not directly subject to a regulatory regime.

20. Legal entities that have material exposure to the total available capital are not grouped with a parent, including specifically legal entities that are subject to consolidated group capital requirements and foreign branches of an IAIG.

21. Each reported entity is mapped by the IAIG to an entity category. Entity categories are used to group entities prior to aggregation. Each entity within an entity category has its AM required capital determined in the same manner. There are entity categories for unregulated and regulated entities ("regulated", in this context, means that an entity is subject to a capital requirement). For regulated entities, the entity category corresponds to a specific capital regime (e.g. RBC Filing US Life Insurer). Unregulated entities are mapped to categories including "Non-Insurer Holding Company," "Asset Management," "Other Non-Insurance/Non-Financial" or "Other Financial" and follow the AM specifications to calculate their required capital.

22. Entities in the provisional AM are mapped to the following categories:

Type	Entity Category	Type	Entity Category
Non-US Ins	**Argentina**	Non-US Ins	**Solvency II (UK) – Life**
Non-US Ins	**Australia - All**	Non-US Ins	**Solvency II (UK) - Non-Life**
Non-US Ins	**Barbados**	Non-US Ins	**South Africa - Composite**
Non-US Ins	**Bermuda – Comm Insurers**	Non-US Ins	**South Africa – Life**
Non-US Ins	**Bermuda - Other**	Non-US Ins	**South Africa - Non-Life**
Non-US Ins	**Brazil**	Non-US Ins	**Switzerland – Life**
Non-US Ins	**Canada - Life**	Non-US Ins	**Switzerland - Non-Life**
Non-US Ins	**Canadian - P&C**	Non-US Ins	**Thailand**
Non-US Ins	**Chile**	US Ins	**RBC Filing U.S. Insurer (Life)**
Non-US Ins	**China**	US Ins	**RBC Filing U.S. Insurer (P&C)**
Non-US Ins	**Chinese Taipei - All**	US Ins	**RBC Filing U.S. Insurer (Health)**
Non-US Ins	**Colombia**	US Ins	**RBC Filing U.S. Insurer (Other)**

Non-US Ins	**Hong Kong - Life**	US Ins	**Non RBC filing U.S. Insurer**
Non-US Ins	**Hong Kong - Non-Life**	Non-US Ins	**Regime A**
Non-US Ins	**India**	Non-US Ins	**Regime B**
Non-US Ins	**Indonesia**	Non-US Ins	**Regime C**
Non-US Ins	**Japan - Life**	Non-US Ins	**Regime D**
Non-US Ins	**Japan - Health**	Non-US Ins	**Regime E**
Non-US Ins	**Japan - Non-Life**	HoldCo	**Non-Insurer Holding Company**
Non-US Ins	**South Korea**	Fin	**Bank (Basel III)**
Non-US Ins	**Malaysia**	Fin	**Bank (Other)**
Non-US Ins	**Mexico**	Fin	**Asset Manager/Registered Inv Advisor**
Non-US Ins	**New Zealand**	Fin	**Other Regulated Financial Entity**
Non-US Ins	**Philippines**	Fin	**Other Unregulated Financial Entity**
Non-US Ins	**Singapore - All**	Other	**Other Non-Ins/Non-Fin with Material Risk**
Non-US Ins	**Solvency II (EU) - Life**	Other	**Other Non-Ins/Non-Fin w/o Material Risk**
Non-US Ins	**Solvency II (EU) - Non-Life**		

3.1.2 Use of Local Valuation, Capital Resources and Capital Requirements

23. Available capital is reported for each entity based on either local GAAP or the local capital regime depending on the type of entity. There is no group or consolidated balance sheet reported under the AM.

24. For unregulated entities, available capital is based on local GAAP reporting.

25. For regulated entities, unadjusted available capital and unadjusted required capital refer to reported amounts based on the relevant local capital regime. The local unadjusted available capital reflects all exclusions and adjustments as required by the local capital regime. The local unadjusted required capital is at the prescribed capital requirement (PCR)[7] intervention level or the closest equivalent.

    a. For Australian subsidiaries, the PCR is the target capital as set by the insurer/group in accordance with APRA requirements. Effectively, this would be "Target capital under ICAAP". PCR is not a set multiple of MCR.

    b. For Bermudian subsidiaries, the Legal Entity PCR in Bermuda for medium and large commercial insurers is called the “Enhanced Capital Requirement” (ECR) and is calibrated to Tail-VaR at 99% confidence level over a one-year time horizon.

    c. For Brazilian subsidiaries, the PCR is reported as the Brazilian MCR (in Portuguese, CMR – Capital Mínimo Requerido).

    d. For Canadian life entities, the baseline PCR is “100% of the LICAT Base Solvency Buffer”. The carrying value should include surplus allowances and eligible deposits on a net of

[7] A PCR is defined in ICP 17.4 as “a solvency control level above which the supervisor does not intervene on capital adequacy grounds”. (https://www.iaisweb.org/icp-online-tool/13528-icp-17-capital-adequacy/)

reinsurance basis. For property/casualty entities, the PCR should be the MCT capital requirement at the target level.

e. For Chilean subsidiaries, the PCR is 100% of the total capital requirement which is the maximum between minimum capital, maximum debt ratios and a solvency margin.

f. For Chinese subsidiaries, the PCR is 100% of the C-ROSS total capital.

g. For Chinese Taipei subsidiaries, the PCR is 200% of the RBC ratio.

h. For European Union member-based subsidiaries, the PCR is the Solvency II Solo SCR (Solvency Capital Requirement).

i. For Hong Kong subsidiaries, under the current rule-based capital regime, if applied similar to the concept of PCR, the regime's PCR would be 150% of MCR for life insurers and 200% of MCR for non-life insurers.

j. For Indian subsidiaries, the PCR is a factor-based solvency approach, based on a Solvency I type model, to maintain an excess of the value of assets over the amount of liabilities of not less than 50% of the amount of minimum capital subject to the control level of a solvency ratio of 150%.

k. For Japanese subsidiaries, the PCR is the solvency margin ratio of 200%.

l. For Korean subsidiaries, the PCR is 100% of risk-based solvency margin ratio.

m. For Malaysian subsidiaries, the PCR is the individual target capital level calculated by individual entities based on policy requirements set by the Bank Negara Malaysia. It reflects the individual insurer's/Takaful Operator's own risk profile and risk management practices and includes additional capacity to absorb unexpected losses beyond those covered in the Risk-Based Capital Frameworks for Insurance and Takaful Operators.

n. For Mexican subsidiaries, the PCR is the solvency capital requirement (SCR) based on a Solvency II type model, using both Value at Risk (VaR) methodologies, considering the time horizon of one year at a confidence level of 99.5%, and Probable Maximum Loss (PML) methodologies for catastrophic risks.

o. For Singaporean subsidiaries, the PCR at the legal entity level under the enhanced valuation and capital framework for insurers (RBC 2) is calibrated at the 99.5% VaR over a one-year period.

p. For South African subsidiaries, the PCR is 100% of the SAM SCR.

q. For Swiss subsidiaries, the legal entity PCR under the “Swiss Solvency Test” (SST) is 100% of the target capital, which is calibrated to Tail-VaR at 99% confidence level over a one-year time horizon.

r. For US subsidiaries, the RBC Company Action Level of each insurer should be re-calibrated to the point at which regulatory action can be taken in any state based on RBC alone, i.e., the point at which the trend test begins, which is one and a half times company action level.

3.2 Adjustments

26. Before entities are aggregated, the reported available and required capital figures are adjusted to remove any double-counting. After adjustment, an entity's available and required capital reflects solely its own capital and risks and not that of its subsidiaries.

27. To ensure that the IAIG has properly eliminated any double-counting, details on each adjustment are provided in the AM template and questionnaire.

3.3 Capital Requirements

28. The AM capital requirement reflects risk aggregated at the group level. The AM also provides the capital requirement contribution from each entity within the scope of the group that provides another level of granularity for jurisdictional analysis. Group-level breakdowns of risk is by type of entity (e.g. entity category, entities by region). Given this approach, reporting at the individual risk level is not necessary nor would it be possible due to differing risk categories and definitions under the local capital regimes.

3.3.1 Exposures

29. The contribution of each legal entity to the total capital requirement is equal to a factor multiplied by a specified exposure measure. An exposure measure is specified for each entity category. All entities within their respective categories use the same factor and exposure measure. For regulated financial entities (including banking and insurance), the exposure measure is the local required capital (after adjustments for double-counting and at a specified PCR-equivalent intervention level). For these regulated entities, the factor will be referred to as a "scalar".

30. The exposure measures used in the provisional AM are provided in the table below. In the event an exposure is negative, the required capital is floored at zero.

Reg/Non-Reg	Category	Exposure Measure
Entities with Regulatory Capital Requirements	Insurance Entities	Adjusted Required Capital
	Banking Entities	Adjusted Required Capital
	Asset Mgmt	Adjusted Required Capital
Entities without Regulatory Capital Requirements	Non-Insurer Holding Company	Adjusted Available Capital
	Asset Mgmt / Other Financial	Average 3-year Gross Revenue
	Non-Insurance / Non-Financial	Adjusted Available Capital

3.3.2 Diversification/Fungibility

31. The AM reflects the diversification that is already included in local capital requirements. The AM does not allow for further diversification between different legal entities and thereby recognizes the limitations on capital fungibility within a group.

3.3.3 Scalar Methodology

32. The provisional AM uses an unscaled methodology: local capital requirements at a PCR (or equivalent) level without any further adjustment other than for double-counting (i.e. all scalars are 100%).

33. Different scalar methodologies can produce similar indications. For example, results from the AM Data Collection for the provisional AM are similar to those from the '99.5% Value at Risk' scalar methodology. A number of additional scalar methodology options are being analyzed (see Section 4, 'Scalars', for more information.) The scalar methodology to be implemented in the finalized AM will either be one of the tested methodologies or some combination/variation that falls within the range of options under consideration.

3.4 Capital Resources

3.4.1 General Considerations

34. Capital resources have one tier with two components: adjusted available capital and financial instruments. Available capital is determined at the legal entity level and becomes an input to the aggregated amount. Qualifying financial instruments are determined using a common set of criteria at the group-level. These instruments are issued at the holding company level and treated as liabilities in the holding company's balance sheet. They are classified as 'Senior Debt', 'Hybrid', 'Surplus Notes (or Similar)' and 'Other'. Available capital is determined at the legal entity level and becomes an input to the aggregated amount. Financial instruments issued at the legal entity level are recognized as capital resources in the AM to the extent they are recognized as available capital in the local statutory regime. Any capital element (other than a financial instrument) that is not recognized as available capital in the local statutory regime will also be excluded from capital resources in the AM.

3.4.2 Recognition of Financial Instruments

35. The AM recognition of a financial instrument as a qualifying capital resource is based on consideration of criteria developed based on five key principles:

    - loss absorbing capacity (on a going concern basis and/or in winding-up);
    - subordination;
    - availability to absorb losses;
    - permanence; and
    - absence of both encumbrances and mandatory servicing costs.

36. Based on these principles, the following criteria are applied to financial instruments. These criteria are consistent with those used to determine financial instruments that qualify as capital resources in the ICS while also reflecting the economic circumstances and existing legal protections under a structural subordination environment. Analysis as part of the AM Data

Collection has shown there are no material differences in the amount of these financial instruments recognized in the AM and the ICS.

- The instrument must have a maturity date and initial maturity must be at least five years;
- Instruments must be subordinated to policyholders. For structurally subordinated instruments, supervisory approval of ordinary dividends can be met if the supervisor has in place supervisory controls over distributions, including the ability for the supervisor to limit, defer and/or disallow the payment of any distributions should it find that the insurer is presently, or may potentially become, financially distressed;
- Distributions cannot be linked to the credit standing or financial condition of the insurance group;
- The issuer has full discretion at all times to cancel distribution or payments;
- The instrument is not secured or covered by a guarantee given by the issuer or a related entity of the issuer;
- The debt instrument has been issued by a clean holding company, which is defined as a holding company that does not have policyholder liabilities on its stand-alone balance sheet;
- Amounts from the instrument issuance have been down-streamed into an insurance subsidiary of the holding company and the insurance subsidiary is located in a jurisdiction whose regulatory regime proactive enforces structural subordination;
- The IAIG and its group-wide supervisor have determined that the proceeds of the instruments, which have been down-streamed into insurance subsidiaries, are being tracked and reported appropriately; and
- The instrument must be fully paid up.

3.4.3 Application of Limits to Recognition of Debt

37. The amount of qualifying financial instruments recognized is subject to a limit of 75% of the aggregated available capital (before the addition of instruments). This is equivalent to a limit of 43% of group capital resources including financial instruments. This was reviewed as part of the AM Data Collection to ensure there was no material difference between the impact of this limit and the impact of limits on the same financial instruments in the ICS. The AM template has the functionality to test a range of approaches to applying limits.

3.5 Aggregation

38. After application of adjustments and scaling, the IAIG's available and required capital are aggregated by entity category.

39. Group capital resources are the sum of the adjusted available capital for the underlying entities plus any qualifying financial instruments subject to limits described above.

40. Group required capital is the sum of the scaled adjusted required capital for the underlying entities.

4 Scalars

41. The AM Data Collection includes analysis to identify, estimate and assess reasonable scaling methodologies. This analysis has been informed by a 2021 paper by American Academy of Actuaries on scalars: "Aggregating Regulatory Capital Requirements Across Jurisdictions: Theoretical and Practical Considerations" (Academy paper). The purpose of the Academy paper is to assist group-wide supervisors that are creating an aggregation-based group capital approach. The Academy paper does not make a recommendation as to which scalar(s) should be used nor does it discuss comparability of the AM and ICS. Rather it provides a framework for classifying and evaluating different methodologies.
42. The goal is to select a scaling methodology for the final AM that is meaningful from a prudential point of view, relevant for the monitoring of financial soundness and that provides for comparable outcomes to the ICS.

4.1 Purpose of Scalars

43. Scalars adjust local capital requirements to comparable levels. The AM will have one scalar for each entity category. The AM currently has 45 insurance entity categories and 3 non-insurance entity categories. This includes 5 placeholders (Regime A, Regime B, Regime C, Regime D and Regime E) to be used if/when further categories are needed. Given that these categories encompass the largest insurance markets, it is expected this list will be generally stable over time.

44. The provisional AM's scalar methodology is unscaled (i.e. each scalar is 100%) for every regulated entity category. For alternative scalar methodologies, a scalar would be assigned to each of these entity categories; the assigned scalars may be different than 100% but would not necessarily be. Different methodologies may produce similar results. Scalars are jurisdiction-specific and not IAIG specific. For a given type of entity, every IAIG will use the exact same scalar.

45. A 'scalar methodology' is a means of using data, statistical analysis and/or judgment to calculate a set of scalars. Once selected, a methodology does not change.

46. A scalar can adjust for differences in the level of calibration between different types of capital requirements and also potentially differences in valuation.

47. Scalars can be "pure" or "excess". Pure scalars are only applied to the underlying capital requirement. Excess scalars also make an adjustment to available capital to preserve the amount of excess assets (the amount by which the available capital exceeds the required capital). For a pure scalar, the calibration level depends on the intervention level of the underlying capital requirement and the scalar itself. For example, applying a scalar of 1.5 to US RBC at 200% of the Authorized Control Level is equivalent to applying a scalar of 1.0 to US RBC at 300% of the Authorized Control Level. For excess scalars, the calibration level only depends on the choice of intervention level. Further information on these types of scalar methodologies can be found in section 4.3 below.

4.1.1 Identifying a Point of Comparison

48. The Academy paper recommends using a practical approach to scaling by identifying some characteristic of the entities within each jurisdiction as a point of comparison – a common

"yardstick". This contrasts with the more abstract "ideal" of scalars that produce the same capital ratio for the foreign entity as that entity would have exhibited had it operated in exactly the same way in the home jurisdiction. This ideal is unachievable and undesirable. Differences between entities (risks, products, regulatory practices, etc.) limit the effectiveness of a capital framework outside the business model to which it was designed to apply. As the Academy paper notes, for a bank to recalculate its available and required capital using rules governing insurance entities "may not only not be ideal, it may not be useful at all". Even within the insurance industry, using the "ideal" scalar would remove the adjustments that have been contemplated by the local supervisor to address these differences. The Academy paper recommends selecting a "yardstick" that can be measured for the full range of business models and industries in which an insurance group may operate. The Academy paper considers many variations, but the two basic examples of this are probability of default and average level of capital adequacy.

4.1.2 Total Balance Sheet Perspective on Calibration

49. Scalars can adjust for differences in: (1) the overall level of conservatism of different capital frameworks (i.e. their calibration); and/or (2) the extent to which that conservatism is reflected in the valuation of liabilities versus the capital requirement itself.

50. Adjustments for differences in calibration are made by adjusting the amount of required capital. Analysis on individual regimes would determine the individual level of solvency protection. Examples of such analysis include empirical study of probability of default, comparison to known benchmarks that are calibrated to known levels, or reference to existing equivalence agreements between regimes. Required capital can be scaled up (or down) to any level to achieve the target calibration of the aggregation method as a whole. Note that, mathematically, this is equivalent to using a higher (or lower) intervention level as the starting point of the AM calculation.

51. Adjustments for differing levels can be made by adjusting available capital in a way that preserves the amount by which it exceeds the required capital. An example of a method that does this is the Excess Relative Ratio approach. From a total balance sheet perspective, this does not change the level of calibration (i.e. it does not change point of intervention), but it would change the capital ratios.

4.2 Criteria for Evaluating Scalar Methodologies

52. The Academy paper presents four general criteria for assessment of scalar methodologies: validity, reliability, ease of implementation and stability of parameters. The Academy paper's description of these criteria is paraphrased below. After each description, there is a discussion of related AM Data Collection analysis including the role of the data being collected.

53. Validity means that the selected methodology generates values for available and required capital for an entity in a foreign jurisdiction that can appropriately be added to the values of available and required capital for entities in the home jurisdiction. There are two common ways in which validity of the scalar measures are evaluated: (1) the reasonableness of assumptions; and (2) the correlation of the measure with other known measures of similar quantities. The Academy paper relies on reasonableness of assumptions. The AM Data Collection analysis also

looks at how various benchmarks of capital adequacy compare to AM results and to each other. These benchmarks include financial strength ratings, distance to default, and the ICS.

54. Reliability means that any entity or group calculating a scalar will know with confidence they are using the same information which any other entity or group would use. This implies that the scaling methodology must be transparent, unambiguous, and based on broadly available and understood data. The scalars used in the AM Data Collection are publicly available (as will any scalars used in the final AM).

55. Ease of implementation is based on availability of data and compatibility with existing procedures. This includes consideration of the degree to which these data sources are available, understood, and compatible with existing procedures for analysis.

56. Stability of parameters is important if the parameters are to be useful. Depending on the purposes for which the scalars are to be used, more or less sensitivity to changing conditions might be appropriate. The Academy paper discusses sensitivity analysis in two different dimensions: (1) sensitivity of results to changes of parameters within a model; and (2) sensitivity of results to differences in methods of calculating scalars. Sensitivity analysis is performed on the AM Data Collection by reweighting entities, changing the size of different scalar options, and looking at the impact of individual categories of entities on individual and total results.

4.3 Methodologies Under Consideration

4.3.1 Provisional AM

57. This method serves as the default calculation while the AM is under development. It is 'unscaled' (i.e. scalars are 100%). The underlying assumption is that each regime uses the approach to valuation, capital resources and capital requirements that is best suited to the products within that jurisdiction and so the adjustments needed to best bring each regime to a comparable level are already made in the underlying regimes.

4.3.2 Pure Relative Ratio Approach (Pure RRA)

58. This method adjusts only the capital requirement of regulated entities for each local regulatory regime within the IAIG. Scalars are calculated through a comparison of the industry average capital ratio within each entity category. For example, if the average capital ratio within one jurisdiction is twice as large as another, then the scalar for that jurisdiction will be half as large. The US RBC category scalar is being tested at different intervention levels equivalent to 200% and 300% of the Authorized Control Level under NAIC Risk Based Capital. A decision on which level would be used will depend on which level (for the US and any equivalent jurisdictions) is considered most comparable to the ICS.

4.3.3 Excess Relative Ratio Approach

59. This method adjusts both available capital and required capital. It adds a step to the Pure RRA by looking at the excess capital (also referred to as free surplus) ratio above the first intervention level requirement. To calculate a jurisdiction's excess capital ratio, one would first calculate the amount of the capital ratio in excess of the capital ratio required at the selected intervention level. This amount would then be divided by the capital ratio required at the selected intervention level; for an example of this calculation, see Appendix 2. This method is also being

tested at different intervention levels equivalent to 200% and 300% of the Authorized Control Level under NAIC Risk Based Capital. A decision on which level would be used will depend on which level (for the US and any equivalent jurisdictions) is considered most comparable to the ICS.

4.3.4 99.5% Value at Risk

60. These are pure scalars that are calibrated to a level equivalent to a 99.5% Value at Risk over a one-year time horizon. For a jurisdiction that is calibrated to this (or an equivalent[8]) level, this method would be unscaled. Examples of equivalent levels are a 99% Tail Value at Risk over a one-year time horizon and a 0.5% probability of default over a one-year time horizon. The latter is sometimes referred to as a "minimum investment grade level".

4.3.5 Supervisory Assessment Approach

61. This method uses the local PCR (or equivalent) as the required capital for regimes that produce comparable outcomes to the ICS including having an equivalent level of solvency protection. This would be similar, in practice, to the 99.5% Value at Risk methodology but would have additional qualitative consideration of other comparability criteria. In practice, the 99.5% VaR method is similar to the provisional AM and so this method also produces similar results to an unscaled approach.

4.4 Methodologies No Longer Under Consideration

62. Over the course of the monitoring period, analysis on scalars has narrowed the range of reasonable methodologies that have the potential to produce comparable outcomes to the ICS. While the following methodologies are no longer under consideration, these summaries are provided to help give an understanding of how the thought process around the use of scalars has evolved.

63. Reverse Engineered ICS: This method uses scalars that are calibrated to a level equivalent to the average level of ratios under the reference ICS (ICS Version 2.0 for the monitoring period). Initial indications showed that the method was highly sensitive to changes in weighting. Use of the reference ICS was problematic due to the valuation and the one-size-fits-all nature of the standard method for calculating the capital requirement. While it is possible that design changes to valuation in the candidate ICS may reduce these problems, reflecting the use of internal models in a scalar based method would remain.

64. Internal Model: This method includes scalars that a group's internal models have determined are equivalent to a specified target calibration (e.g. a 99.5% Value at Risk over a one-year time horizon). While this method is not under consideration for the AM itself, it may be of use to groups that use aggregation in their internal models that are used to calculate the ICS. Note that for this method to be considered appropriate for use as an other method of calculating the ICS

[8] From ICP 17.8.3: "With regards to the choice of the risk measure and confidence level to which regulatory capital requirements are calibrated, the IAIS notes that some supervisors have set a confidence level for regulatory purposes which is comparable with a minimum investment grade level. Some examples have included a 99.5% VaR calibrated confidence level over a one year timeframe, 99% TVaR over one year and 95% TVaR over the term of the policy obligations." (https://www.iaisweb.org/icp-online-tool/13528-icp-17-capital-adequacy/)

capital requirement, a group would need to demonstrate to their supervisor that it meets the requirements for use as an internal model.

65. Banking Equivalent: This method is scaled to a level that local supervisors consider equivalent to Basel banking requirements. For most jurisdictions this would be equivalent to an unscaled approach. The ICS does not scale Basel banking requirements and so is intended to be scaled to the same level. For the US, analysis by the Federal Reserve indicates that Basel is equivalent to an RBC intervention level of 250%. While it produces similar indications as some other methods under consideration, this banking equivalent approach is not under consideration as it is not as directly focused on insurance risk.

5 Finalizing the AM

5.1 Selecting Final Methodology

66. This document describes the AM as envisaged for implementation subject to further changes which may be decided based on the outcome of the IAIS comparability assessment and analysis of the results of the annual AM Data Collection.

67. The AM template has the functionality to test (and back-test) any potential revisions, including those to scalars. The AM Data Collection includes a variety of scaling methodologies that represent a full range of reasonable methods of scaling local capital. These methods were selected based on analysis of data from the AM Data Collection and consideration of the comparability criteria, which were developed so as to not give the AM a free pass nor preclude comparability at the outset. While it is not yet known which method(s) will produce comparable results, the goal is to select a scalar methodology for the final AM that is meaningful from a prudential point of view, relevant for the monitoring of financial soundness and provides comparable outcomes to the ICS.

5.2 AM Implementation

68. Similar to the ICS, once finalized, jurisdictions using the AM will implement it into their group capital regime. For example, as a jurisdiction that has noted its intent to implement the AM, the US will implement the AM for US IAIGs via the Group Capital Calculation (GCC). The GCC is a similar calculation to the AM but with additional reporting and more specific guidance. The GCC provides analytical information to the group-wide supervisor for use in assessing group risks and capital adequacy. The GCC helps US state insurance supervisors perform an assessment of capital when combined with other information obtained by US state insurance supervisors. This includes group organizational information provided on Schedule Y, enterprise risk information on Form F, and internal risk self-assessment information in Own Risk and Solvency Assessment (ORSA) filings (where applicable).

5.3 Ongoing evolution of the AM

69. The AM will evolve with the local solvency regimes that it uses as building blocks. As these regimes adapt to changes in the legal entities owned by IAIGs, the AM will too. Any updates to parameters will be done in a manner consistent with the current specifications for the AM. Local prescribed capital requirements (or equivalent) will be maintained through communication with

local supervisors. Further maintenance of scalars will be a technical exercise done in accordance with principles underlying the selected methodology. Similar updates will be needed for parameters used in the ICS and any process for doing so will be considered for use in the AM as well. The components of the AM are inherent to any aggregation-based method and so will not change.

6 Appendix 1: Correlation Analysis on US Entities

1. The US RBC capital regime has been relatively stable for many decades and allows a more direct consideration of correlation than is possible with the AM Data Collection. Without precluding whatever decision is made for the aggregation of all entities, the following correlation analysis can be performed specifically for US legal entities:
    - Similarity of Life RBC and P&C RBC
    - Correlation between P&C RBC and the ICS
    - Correlation between Life RBC and the ICS
2. Note that scaling changes the quantum of change but multiplying by a constant does not impact correlation. This means that all potential scaling options are correlated with the provisional AM and a change to the scaling methodology will not impact analysis on the correlation between the AM and the ICS.

6.1 Life RBC vs P&C RBC

3. While developing its own aggregation-based approach to group capital, the Federal Reserve analyzed historical results of life and property/casualty (P&C) entities. For this analysis, the Federal Reserve used logistic regressions to model the relation between solvency ratios and default rates. When analyzed separately, the regression produces very similar parameter estimates for life and P&C (see table below). The differences are not statistically significant. A test of differences yields two-sided p values above 50% for tests of both the slope and intercepts. The lack of a statistically significant difference of slopes indicates capital requirements are comparably conservative in the two frameworks. If one framework had less stringent requirements, then companies operating at a given multiple of the capital requirement would be more likely to default, which was not observed. The lack of a statistically significant difference of intercepts indicates capital resources are comparably conservative in the two frameworks. If one framework had significantly more conservatism embedded into its valuation or capital instrument qualification criteria, a company with a low stated capital ratio would be less likely to default because of the loss absorbing potential of the balance sheet.

	P&C Insurance	**Life Insurance**
Slope (b)	-0.714	-0.662
Robust Std. Err.	(0.052)	(0.102)
Intercept (a)	-0.402	-0.602
Robust Std. Err.	(0.178)	(0.440)
Observations	21,031	6,862
R^2	23.3%	20.3%

4. The results above show that Life RBC and P&C RBC provide statistically similar measures of solvency.

6.2 Correlation of P&C RBC with ICS

5. As part of work on the AM Data Collection, Team USA has developed models that can approximate ICS results for any US P&C entity or group. This allows calculation of ICS results going back several decades, long enough to make direct calculations of correlation. The results show that the US RBC and the ICS are significantly correlated across a broad range of P&C business models and product mixes. As an example, the following chart shows year-over-year changes in the modeled ICS ratio versus actual changes in the RBC ratio from 2001 to 2020 for a large P&C entity. While the quantum of change differs, the chart shows a similar directional reaction to conditions over this period of time. Applying a Pearson test of correlation, these results have a p-value well below 1%. One can conclude that, for this entity, the results are not due to chance and are statistically significant. Similar results have been found for other entities that report NAIC P&C RBC.

Chart: Year-over-year change in ICS Ratio vs RBC ratio

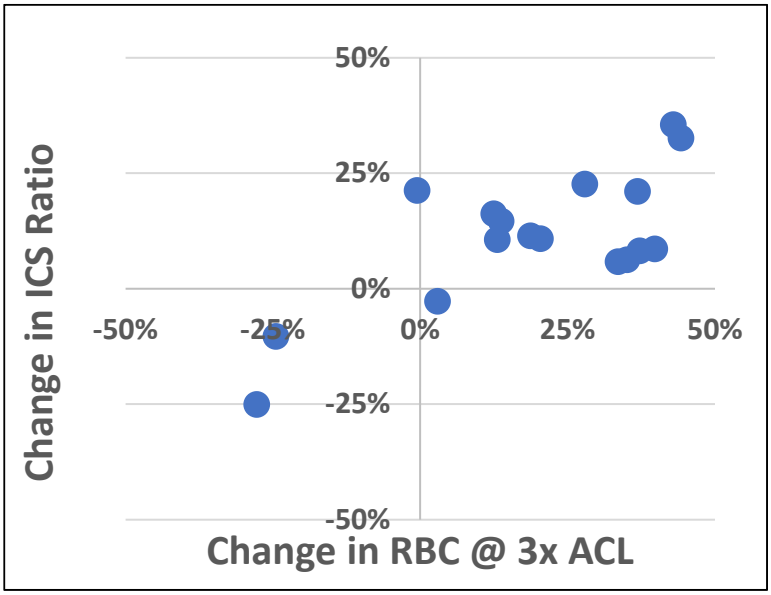

Table: Correlation test with null hypothesis that correlation is not zero

6.3 Correlation of Life RBC with ICS

6. During the development of the ICS, a US group developed an internal model to evaluate the ICS framework applied to a hypothetical individual participating life insurance company over a historical period spanning several decades. The historical modeling provides the benefit of reflecting a wide range of economic conditions in addition to and not captured in the recent environment alone, along with the ability to compare the performance of ICS (version 2.0) and Life NAIC RBC. The results for this "model company" indicate highly correlated ICS and RBC ratios and that both frameworks are responsive to changing economic conditions, although the ICS introduces significantly greater volatility. The results demonstrate directional correlation over the business cycle but occasionally different responses in magnitude and timing to short-term economic fluctuations.

7 Appendix 2: Calculation of Excess Relative Ratio Approach

1. The following has been adapted from the 2022 instructions for the NAIC Group Capital Calculation. Included below are various steps to be taken in calculating the excess relative ratio approach to developing jurisdiction-specific scalars. In order to numerically demonstrate how this approach could work for a particular regime, hypothetical capital requirements and financial amounts have been developed for Country A. Based on preliminary research that has been performed by NAIC staff, it appears that the level of conservatism built into accounting and capital requirements within a jurisdiction may differ significantly for life insurers and non-life insurers. Therefore, ideally each jurisdiction would have two different scalars based on the type of business. The example below includes information related to life insurers in the US and Country A.

Step 1: Understand the Jurisdiction's Capital Requirements and Identify the First Intervention Level

a. The first step in the process is to gain an understanding of the jurisdiction's capital requirements. This can be done in a variety of ways including reviewing publicly available information on the regulator's website, reviewing the jurisdiction's Financial Sector Assessment Program (FSAP) reports and discussions with the regulator.

In Country A, it assumes that the capital requirements for life insurers are based on acapital ratio, which is calculated as follows:

$$\text{Capital ratio} = \frac{\text{Total available capital}}{\text{Base required capital (BRC)}}$$

In the US, capital requirements are related to the insurer's RBC ratio. For purposesof the Relative Ratio Approach, an Anchor RBC ratio is used and calculated as follows:

$$\text{Anchor RBC ratio} = \frac{\text{Total adjusted capital}}{\text{100\% Company Action Level RBC*}}$$

* 100% Company Action Level RBC is equal to the Total RBC After Covariance including operational risk, without adjustment or 200% Authorized Control Level RBC.

b. Similar to legal entity RBC requirements in the US, Country A utilizes an early intervention approach by establishing target capital levels above the prescribed minimums that provide an early signal so that intervention will be timely and for there to be a reasonable expectation that actions can successfully address difficulties. Presume that this target capital level is similar to the US Company Action Level (CAL) event, both of which can be considered the first intervention level in which some sort of action—either on the part of the insurer or the regulator—is mandated. A separate sensitivity calculation will be applied in the GCC template using trend test level RBC.

c. For Country A, the target capital level is presumed to be a capital ratio of 150%. That is, the insurer's ratio of total available capital to its BRC should be above 150% to avoid the first level of regulatory intervention. Again, this is similar to the US CAL event, which is usually represented as an RBC ratio of 200% of Authorized Control Level (ACL) RBC (ignoring the RBC trend test). In the Relative Ratio approach, the Anchor RBC ratio represents the Company Action Level event (or first level of regulatory intervention) as 100% CAL RBC (instead of 200% ACL RBC), because CAL RBC is the reference point that is used to calibrate against other regimes. The Anchor RBC Ratio (Total Adjusted Capital ÷ 100% CAL RBC) tells how many "multiples of trigger level capital" that the company holds. Conceptualizing the CAL event as 100% CAL RBC allows the consistent definitionof local capital ratios that are calibrated against a "multiples of the trigger level" approach, to ensure an "apples-to-apples" comparison.[9]

Step 2: Obtain Aggregate Industry Financial Data

2. The next step is to obtain aggregate industry financial data, and many jurisdictions include current aggregate industry data on their websites. Included below are the financial amounts foruse in this exercise.

U.S. Life Insurers – Aggregate Data
Total Adjusted Capital = $495B
Authorized Control Level RBC = $51B
Company Action Level RBC = $102B
Country A Life Insurers – Aggregate Data
Total Available Capital = $83B
BRC = $36B

Step 3: Calculate a Jurisdiction's Industry Average Capital Ratio

3. To calculate a jurisdiction's average capital ratio, the aggregate total available capital for the industry would be divided by the minimum or base capital requirement for the industry in computing the applicable capital ratio. In Country A, this would be the BRC. In the US, this base or minimum capital requirement is usually seen as the ACL RBC, but because the Relative Ratio Approach is using 100% CAL RBC as a reference point to calibrate other regimes to, the Relative Ratio formula uses 100% CAL RBC as the baseline and the first-intervention level tocalculate the Average Capital Ratio and Excess Capital Ratio. As a result, the scaled ratio of a non-US company should inform regulators how many multiples of first-intervention level capital the non-US company holds. Included below is the formula to calculate a jurisdiction'sindustry average capital ratio:

[9] While it is mathematically equivalent to use 200% ACL RBC as the denominator, the Approach is designed to use the representation of first-intervention level capital levels as the conceptual underpinning of the Relative Ratio Approach, where100% CAL RBC is the reference point to calibrate against other regimes.

Calculation of U.S. Industry Average Capital Ratio – Life Insurers

$$\frac{\$495B \text{ (Total Adjusted Capital)}}{\$102B \text{ (CAL RBC)}} = \mathbf{485\%}$$

Calculation of Country A Industry Average Capital Ratio – Life Insurers

$$\frac{\$83B \text{ (Total Available Capital)}}{\$36B \text{ (BRC)}} = \mathbf{231\%}$$

Step 4: Calculate a Jurisdiction's Excess Capital Ratio

4. The next step is to understand the level of capital the industry is holding above the first intervention level. Therefore, to calculate a jurisdiction's excess capital ratio, one would first need to calculate the amount of the capital ratio carried in excess of the capital ratio required atthe first intervention level. This amount would then need to be divided by the capital ratio required at the first intervention level.

General Excess Capital Ratio Formula

$$\frac{\text{Average Capital Ratio} - \text{Capital Ratio at the First Intervention Level}}{\text{Capital Ratio at the First Intervention Level}}$$

5. Based on the formula above and information provided in Step 2 and Step 3, included below arehow to calculate each jurisdiction's excess capital ratio.

NOTE: The first intervention level in the US is defined in the Relative Ratio Approach as100% CAL RBC, while the first intervention level in Country A is a capital ratio of 150%.[10]

Calculation of U.S. Excess Capital Ratio – Life Insurers

$$\frac{485\% \text{ (Average Capital Ratio)} - 100\% \text{ (Capital Ratio at the First Intervention Level)}}{100\% \text{ (Capital Ratio at the First Intervention Level)}} = \mathbf{385\%}$$

Calculation of Country A Excess Capital Ratio – Life insurers

$$\frac{231\% \text{ (Average Capital Ratio)} - 150\% \text{ (Capital Ratio at the First Intervention Level)}}{150\% \text{ (Capital Ratio at the First Intervention Level)}} = \mathbf{54\%}$$

[10] 100% CAL RBC translates to an ACL RBC level of 200%, but for conceptual purposes, the Relative Ratio Approach refersto the U.S. first intervention level as 100% CAL RBC, as 100% CAL RBC is the reference point to which the Relative RatioApproach calibrates other regimes. In other words, 100% CAL RBC ensures that the scaled ratio of Country A results in a ratio that determines how many multiples of first-intervention level capital that the company in Country A is holding.

Step 5: Compare a Jurisdiction's Excess Capital Ratio to the US Excess Capital Ratio to Develop the Scalar

6. Based on the information above, the US excess capital is 385%. In other words, life insurers in the US carry approximately 385% more capital than what is needed over the first intervention level. Country A's excess capital ratio is 54%. That is, life insurers in Country A carry approximately 54% more capital than what is needed over the first intervention level.

7. To calculate the scalar, one would divide a jurisdiction's excess capital ratio by the US excesscapital ratio. Therefore, the calculation of Country A's scalar for life insurers would be 54% ÷ 385% = 14%. Therefore, Country A's scalar for life insurers would be 14%.

Step 6: Apply to the Scalar to the Non-US Insurer's Amounts in the GCC

8. To demonstrate how the calculation of the scalar works, it would be best to provide a numerical example. For the purposes of this illustration, it assumes that a life insurer in Country A reports required capital of $341,866 and total available capital of $1,367,463. As noted previously, the above information and calculation suggests that US life insurers carry capital far above the minimum levels, while life insurers in Country A carry capital far closer to the minimum. Therefore, to equatethe company's $341,866 of required capital, one must first calibrate the BRC to the first regulatory intervention level by multiplying it by 150%, or Country A's capital ratio at the first intervention level. The resulting amount of $512,799 is then multiplied by the scalar of 14% toget a scaled minimum required capital of $71,792.

9. Further, the above rationale suggests that the available capital might also be overstated (becauseit does not use the same level of conservatism in the reserves) by the difference between the calibrated required capital of $512,799 and the required capital after scaling of $71,792, or $441,007. Therefore, one should now deduct the $441,007 from the total available capital of $1,367,463 for a new total available capital of $926,456. These two recalculated figures of required capital of $71,792 and total available capital of $926,456 is what would be included in the group's capital calculation for this insurer. These figures are further demonstrated below.

Calculation of Scaled Amounts for GCC

Amounts as Reported by the Insurer in Country A

Total available capital = 1,367,463

Minimum required capital (BRC) = 341,866

Calibration of BRC to 1st Regulatory Intervention Level

341,866 (BRC) * 150% = 512,799

Scaling of Calibrated Minimum Required Capital

512,799 (Calibrated BRC) * 14% (Scalar) = 71,792 (Difference of 441,007)

Scaled Total Available Capital

1,367,463 (Total Available Capital) – 441,007 (Difference in scaled required capital) = 926,456

10. Given these scaled amounts, one can calculate the numerical effect on the company's relative capital ratio by using the unscaled and scaled amounts included below.

	Unscaled Amounts from Table Above	*Scaled Amounts from Table Above*
Total Available Capital (TAC)	1,367,463	926,456
Base Required Capital (BRC)	341,866	71,792
Capital Ratio (= TAC ÷ BRC)	400%	1290%

11. Because life insurers in Country A hold much lower levels of capital over the first intervention level as compared to US life insurers, the change in the capital ratio from 400% (unscaled) to 1290% (scaled) appears reasonable and consistent with the level of conservatism that is built into the US life RBC formula driven primarily fromthe conservative reserve valuation.

Note: In the above example, the company has an unscaled ratio (400%) that is above the industry average in Country A (231%) and a scaled ratio (1290%) that is higher than the US life industry average (485%). If the company had an unscaled ratio that was lower than the industry average in Country A, its scaled ratio would be lower than the US life industry average. company with an unscaled ratio equal to its own country's industry average will have a scaled ratio equal to the anchor RBC ratio."

Data for industrywide US RBC ratios is sourced from the aggregate RBC Statistics maintained by the NAIC. Data for industrywide capital ratios for foreign insurance jurisdictions was derived from publicly available aggregate industry data. If this scalar methodology is retained, then the data will require periodic updating.

8 Appendix 3: Comparability Data for US Entities

8.1 Comparison of Life Risks

ICS Risk	Captured in the local capital req?	If no, is the risk reflected in local valuation and/or capital resources?	Describe the calculation of local capital requirement by risk category including its components and interaction, if any, with valuation and capital resources
Life insurance	Y	NA	Covered within the C2 component of Life Risk Based Capital (LRBC). The factors developed represent surplus needed to provide for life insurance mortality risk, which is defined as adverse variance in life insurance deaths (i.e., insureds dying sooner than expected) over the remaining lifetime of a block of business while appropriately reflecting the pricing flexibility to adjust current mortality rates for emerging experience. The factors developed are then applied to net amount at risk (NAR). NAR is used in lieu of expected claims because the latter are difficult to calculate on a constant basis from company to company.
Catastrophe	Y	NA	Included as part of the Life insurance requirement (C-2) -- doesn't have standalone requirement and not explicitly captured but it is part of the NAR
Interest Rate	Y	NA	This is covered within the C3(a) component of LRBC - The interest rate risk is the risk of losses due to changes in interest rate levels. The factors chosen represents the surplus necessary to provide for a lack of synchronization of asset and liability cash flows. Different RBC factors are applied on reserves of different products categorized into Low Risk, Medium Risk and High Risk Categories, depending on the withdrawal characteristics of the products. Certain annuities and single premium life that are cash flow tested for asset adequacy may be required to do additional RBC scenario testing, using interest-rate scenario generator. C-3 Phase 2 testing may also be needed for variable annuities and certain other variable products with guarantees.
Non-default Spread Risk	N	Y	Not an explicit component of LRBC. However, the degree of mismatch risk between a company's assets and liabilities is influenced by spread risk. If a company needs to sell assets to generate cash flow, the spread will influence the cash proceeds generated from the asset sale. As such, reserves are set to ensure high likelihood of adequacy through full range of economic scenarios. (i.e. spread risk is captured in CFT reserve).
Equity	Y	NA	This is covered as part of C1-cs component of LRBC. Equity risk is the risk of asset default or the risk of loss in the market value for equity assets. The RBC formula multiplies the reported value of the assets in each category by a risk factor that reflects that asset category's relative risk. Two adjustments are made to the base factors. First, the factor for publicly traded unaffiliated common stock is adjusted up or down by the weighted average beta of the insurer's portfolio. Second, a common stock concentration component is calculated, see below.

ICS Risk	Captured in the local capital req?	If no, is the risk reflected in local valuation and/or capital resources?	Describe the calculation of local capital requirement by risk category including its components and interaction, if any, with valuation and capital resources
Real Estate	Y	NA	This is covered as part of C-1o ('Asset Risk - All Other') component of LRBC. The real estate section includes both directly owned real estate, that reported on Schedule A, and joint venture real estate that that is reported in Schedule BA. The calculation begins with the book/adjusted carrying value of the property. Since the total value of the property is subject to loss, encumbrances are included as well (i.e. Gross basis)
Currency	N	Y	Currency risk is the risk that a non-dollar denominated asset (i.e., a bond whose payments occur in a foreign currency) has uncertain U.S. dollar cash flows. Currency risk is not explicity covered under C1 Asset Risk component. C3 Phase 1 requirements do not address currecny risk. However, the risk is not expected to be material due to limitation of foreign-currency-denominated assets imposed by statutes as well as economic hedging strategies implemented by the insurers. The risk of currency fluctuations are reflected in valuation of investments, as prescribed by the statutory accounting framework in SSAP No. 23.
Asset Conc	Y	NA	This is covered as part of C-1cs & C-1o Asset Risk component of LRBC - The purpose of the asset concentration factor is to reflect the additional risk that insurers face if they have high concentrations invested in a single exposure. The Asset concentration factor applies an additional RBC charge to the ten largest asset exposures excluding various low-risk categories with a pre-tax factor of less than 1%. (C-1o) For common stock, factors increases by 50% the RBC factor for the five largest common stock exposure (C1-cs)
Credit	Y	NA	This is covered as part of C1 ('Asset Risk') component for fixed income investments. Credits are given to hedging strategies currently empolyed by insurers that mitigate credit default risk.
Operational	Y	NA	There is an explicit operational risk component in LRBC formula, being a risk factor of 3% of the amount "Total RBC after Covariance Before Operational Risk" reported on page LR031. The result represent an initial value of operational risk. Also covered in part of C-4a '(general business risk) component of LRBC, see below.
Other material risks not captured by ICS			
Business Risk	Y	NA	This is covered in C-4 Business Risk component of LRBC. C-4 Business Risk component is further divided into two sub-components (i) C-4a Premium and Liability Components and (ii) C-4b Health Administrative Expense Component. Business Risk in C-4 component is incremental to Operational Risk discussed above. Incremental risks includes exposure to guaranty fund assessments, litigation and separate account reserves etc.
Affiliate risk	Y	NA	This is covered as part of C-0 component of LRBC, which addresses the default risk for certain affiliated investments. RBC is largely structure neutral (i.e. look-through approach).
Tax Offset	Y	NA	LRBC formula has explicit tax adjustment

8.2 Comparison of Property/Casualty

ICS Risk	Is the risk captured in the local capital requirement?	If no, is the risk reflected in local valuation and/or capital resources?	Describe the calculation of local capital requirement by risk category including its components and interaction, if any, with valuation and capital resources
Non-life	Y	NA	P&C RBC has a premium risk component (R5) and a reserve risk component (R4). Each uses the same line of business breakdown as the ICS. Factors are adjusted to avoid doublecounting with catastrophe risk. Due to higher factors, less diversification and a longer time horizon, these charges tend to be higher than the ICS.
Catastrophe	Y	NA	P&C RBC has a catastrophe risk component (R_Cat) that covers risks that are material to solvency risk for US P&C entities: earthquake and hurricane. Other catastrophe risks are implicitly included in the premium risk factors.
Interest Rate	N	Y	An interest rate risk charge was investigated for the P&C RBC charge but analysis based on statutory financial for US legal entities indicated that it is not material for US legal entities. Future payment obligations are not sensitive to changes in interest rates. Loss reserves are reported on undiscounted basis. This both mutes changes in available capital due to interest rate movements and adds a level of conservatism that exceeds what an interest rate risk charge would be.
Non-default Spread Risk	N	Y	P&C cashflows are not sensitive to changes in spreads. RBC covers risk over the lifetime of the liabilities to policyholders : insofar as this risk impacts insurer solvency, it is covered under the credit risk module. that said, this risk is not material to P&C insurers due to short duration nature of the business and buy-and-hold approach to investing. Unless NAIC 3.A to NAIC 6 designation, bond investments are reported at amortized cost and hence under statutory accounting, spread risk is only reported if the bonds are sold before stated maturity. In addition, about half of P&C insurers' bond portfolio is allocated to government bonds (including municipals) and agency-backed ABS. (Data as of YE 2022). This further supports our assessment that this risk is not material to P&C insurers.
Equity	Y	NA	P&C RBC has a risk component for equity risk (R2). Equity risk is the risk of asset default or the risk of loss in the market value for equity assets. The RBC formula multiplies the reported value of the assets in each category by a risk factor that reflects that asset category's relative risk. An adjustment is made to reflect the additional risk of high concentrations of assets in a single exposure, which is referred to as an "issuer". Refer to Asset Concentration section below.

ICS Risk	Is the risk captured in the local capital requirement?	If no, is the risk reflected in local valuation and/or capital resources?	Describe the calculation of local capital requirement by risk category including its components and interaction, if any, with valuation and capital resources
Real Estate	Y	NA	There is real estate risk charge within the equity risk component (R2).
Currency	N	Y	Currency risk is the risk that a non-dollar denominated asset (i.e., a bond whose payments occur in a foreign currency) has uncertain U.S. dollar cash flows. Currency risk is not explicity covered under R1 Asset Risk component. However, the risk is not expected to be material due to limitation of foreign-currency-denominated assets imposed by statutes as well as economic hedging strategies implemented by the insurers. The risk of currency fluctuations are reflected in valuation of investments, as prescribed by the statutory accounting framework in SSAP No. 23.
Asset Conc	Y	NA	Both fixed income risk (R1) and equity risk (R2) have charges for asset concentration. The purpose of the concentration factor is to reflect the additional risk of high concentrations in single exposures (represented by an issuer of a security or a mortgage borrower, etc.). The concentration factor basically doubles the risk-based capital factor (up to a maximum of 30 percent) of the 10 largest asset exposures excluding various low-risk categories or categories which already have a 30 percent factor. This risk is not material for an insurer with large diversified portfolio.
Credit	Y	NA	Fixed income investments credit risk is in the R1 component and reinsurance counterparty risk is in the R3 component.
Operational	Y	NA	P&C RBC has a component for operational risk, being a risk factor of 3% of the amount "Total RBC after Covariance Before Operational Risk" reported on page PR032.
Other material risks not captured by ICS			
Affiliate Risk	Y	NA	P&C has R0 component for risks from insurance affiliates owned by the legal entity. RBC is largely structure neutral (i.e. look-through basis).
Experience Adj	Y	NA	For lines with at least 10 years of experience, RBC factors for premium and reserve risk are adjusted using a prescribed formula. This results in capital charge for lines that are underpriced and/or underreserved. Historically, underpricing and underreserved are major causes of P&C insurance insolvency. Insurers do not hold capital for these risks under the ICS.
Tax offset	Y	NA	There is no tax adjustment to reduce P&C RBC - taxes were considered in the derivation of factors (implicit tax considerations)

8.3 Comparison of Capital Resources

ICS Resources (Other than Financial Instruments)	Approach used in the ICS (Table 3)	Approach in local capital regime?	If recognition of the item is deducted above specified limit or other, please describe the local capital regime treatment.
Additions to capital resources			
Retained earnings	Recognised	Recognised	
Accumulated Other Comprehensive Income (AOCI)	Recognised	Recognised	
Share premium	Recognised	Recognised	
Contributed surplus (equity-settled stock options)	Recognised	Recognised	
Recognised reserves (e.g. AVR, IMR)	Recognised	Recognised	
Other material additions to capital resources			
Dividend liability		Other	The annual statement provision for future dividends can provide a general cushion against potentially adverse future experience. As a reflection of this possible cushion, 50 percent of the annual statement dividend liability is included in capital.
Deductions from capital resources			
Goodwill, net of associated DTLs	Deducted	Deducted above specified limit	STAT goodwill can theoretically be admitted up to a limit of 10% of the reporting entity's capital and surplus. Any amount in excess of the 10% threshold would be non-admitted. However,in practice, the adjustments for doublecounting in the AM would eliminate goodwill for investments in subsidiaries and, due to recognition of future profits in the ICS (particularly of premium reserves and future business), much of what would be considered goodwill in statutory accounting would be recognized as equity in the ICS.
Intangible Assets, net of associated DTLs	Deducted	Deducted	E.g. Trade Names and other intangible assets such as defensible intangible assets (SSAP 20) are all non-admitted assets.
Computer Software Intangibles, net of associated DTLs	Deducted above specified limit	Deducted above specified limit	According to SSAP 16R, electronic data processing (EDP) equipment and operating system software (net of accumulated depreciation) are admissible up to a limit of 3% of the reporting entity's capital and surplus. Nonoperating system software are nonadmitted assets

ICS Resources (Other than Financial Instruments)	Approach used in the ICS (Table 3)	Approach in local capital regime?	If recognition of the item is deducted above specified limit or other, please describe the local capital regime treatment.
DTA from the balance sheet	Deducted above specified limit	Deducted above specified limit	DTA that is not expected to be realized pursuant to SSAP 101 paragraph 11(b)(i) and/or in excess of applicable % of adjusted capital & surplus pursuant to SSAP 101 11(b)(ii) is not admitted as an asset.
Defined benefit pension fund assets	Deducted above specified limit	Deducted	Pursuant to SSAP No. 102, if the fair value of plan assets exceeds the projected benefit obligation, the employer shall recognize in its statement of financial position an asset that equals the overfunded projected benefit obligation. This prepaid asset resulting from the excess of the fair value of plan assets over the projected benefit obligation shall be nonadmitted.
Direct and indirect investments in own financial instruments, not otherwise eliminated (e.g. treasury stock)	Deducted	Deducted	Treasury stock reduces statutory surplus.
Reinsurance assets arising from non-qualifying reinsurance	Deducted	Deducted	Collateral is required for reinsurance with “non-qualifying” reinsurers, including unauthorized reinsurers and certified reinsurers. The specific requirement for the collateral is included in the Credit for Reinsurance Model Law (#785) and the Credit for Reinsurance Model Regulation (#786).
Value of encumbered assets in excess of the value of relevant liabilities and capital requirements	Deducted	Deducted	
Other material deductions from capital resources			
Non-admitted assets	Deducted	Deducted	U.S. statutory accounting has the concept of nonadmitted assets. These assets, which are characterized as assets having economic value other than those which can be used to fulfill policyholder obligations, or those assets which are unavailable due to encumbrances or other third-party interests. Assets that are nonadmitted have a zero value on the balance sheet. When assets are nonadmitted its a direct charge against surplus.