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Cover Questions for Exposure

1. Should a guardrail be designed for NAER discounting or Direct Iteration? If yes,
    a. What should be considered in the design of the guardrail?
    b. Should the guardrail be included as a separate sensitivity (requested or optional)?
    c. Should it be tested under asset-based metric, surplus-based metric or both?
2. What scalars and metrics should be reviewed as part of the field test? For example, should CTE90, 25% * CTE98, 25% * CTE95 or others be reviewed? Should the same scalars and metrics apply to both C3 Phase 1 and C3 Phase 2? Scalar is defined as XX and metric is defined as YY in the term *XX% * CTE YY.*
3. Should the treatment of voluntary reserves be reviewed during this field test? Does this apply to both C3 Phase 1 and C3 Phase 2? How should voluntary reserves be defined?
4. At what level of granularity should results be reported? Examples are included in the exposure document.
5. What additional supplemental information should be provided to better understand the drivers of C3 results? For example, duration mismatch, average issue year, convexity, etc. for each major block of company reported results?
6. If VM-22 PBR is applied retroactively, should this change be considered as part of this field test? How would this be evaluated?

American Academy of Actuaries
C3 Field Test Specs Draft

Section I: Field Study Overview

A. Introduction

The Academy's C3 Subcommittee was tasked with considering changes to the C3 framework given the implementation of Principle Based Reserving for VM-22 and the new Generator of Economic Scenarios (GOES) scenarios, as well as reviewing ways to harmonize the methodology with the C3 Phase 2 framework. Details of the framework are included in the [appendix].

The goals of the field test are as follows:

- Assess the impacts of using an Asset-Based metric vs. a Surplus-Based metric
- Add Equity Linked Annuities to C3 Phase 1
- Assess the impact of a prescribed equity modeling approach under C3 Phase 1
- Enable a discussion about the consideration of the appropriate discount rate
- Contemplate the impact of aggregation of products included in C3 Phase 1
- [Supplemental] Evaluate the impact of a new prescribed default assumption, and quantify a possible RBC credit
- [Supplemental] Evaluate the C3 metric under different starting economic conditions

The analysis above will be performed using GOES scenario sets and may be reviewed under different economic conditions, such as different starting yield curves.

Supplemental information may be requested as part of this field test to help understand the field test reserve liability characteristics, aligning with LR027 definitions. A key goal is to confirm that the new methodology results in relatively higher/lower C3 capital requirements for companies with relatively higher/lower interest rate exposure.

B. Communication of Field Test Results

Participants of the field test will schedule confidential, regulator-only meetings where the results of their testing will be shared with regulators. NAIC staff will reach out to companies to schedule these meetings.

NAIC staff will communicate high-level observations and themes raised by participants on drivers of results. Communication will include specific coverage of key observations related to the listed goals of the field test as well as any other items that may be significant. Where applicable, NAIC staff will include comparisons to NAIC's model office testing.

NAIC Staff Contact: [Include name/email on who to contact at NAIC]

C. Timeline

The field test will run from [July to September] 2026. During the field test, regular Q&A sessions will be held with participants to address questions that may arise. Field test participants will present results in confidential regulator-only sessions starting in [October]. A detailed timeline is included in the Appendix II.

The NAIC's model office analysis will be shared in public meetings at Life Risk-Based Capital (E) Working Group by the end of 2026, alongside key observations shared by field test participants.

The proposed framework is intended to be effective for year-end 2027.

Section II: Field Test Scenarios and Assumption Specifications

A. Products Covered

Companies should include all products that are currently subject to C3 Phase 1, which includes single premium life and annuity products. Equity Linked Annuities, such as Fixed Indexed Annuities (FIA), will be added to the scope for testing.

B. Valuation Date

Field test will be based on a valuation date of 12/31/2025.

C. Economic Scenarios

Companies should use the prescribed field test scenario sets that will be provided by Conning. Conning will provide the scenario subsets that will be used for testing.

For companies that use a proprietary generator, results are requested under the prescribed generator instead for comparability. If fewer scenarios are used, please specify.

D. Metric definitions

For Surplus-based metrics, utilize the C3 Phase 1 prevailing proposed method as of the start of the Field Study. At the writing of this document, that would be the proposed C3 Phase 1 instructions as of [02/12/2026]. This would include applying updated weights to specific scenario results.

For Asset-based metrics, utilize the prevailing C3 Phase 2 proposed method as of the start of the Field Study. This would include flooring the scenario result at the Cash Surrender Value and utilizing 25% of CTE (98).

Reserves underlying the metrics will reflect reserve methodologies as of year-end 2025, not the newly approved VM-22 in the 2026 Valuation Manual.

E. Discounting

Companies should continue to use the current approach that is consistent with their reported capital metrics or use the prevailing metric proposed at the time of the Field Study. This could include discounting at 105% of the after-tax 1-year U.S. treasury rates for C3 Phase 1, or discounting at the net asset earned rate (NAER) on additional assets or using the Direct Iteration method for C3 Phase 2.

If any approach used for field test scenarios differs from what is reflected in the Baseline calculations, companies should disclose this and the corresponding impact of the change in approach.

F. Other Assumptions

For other assumptions (e.g., reinvestment yields, liability assumptions, projection period), use the same assumptions as in the models currently used for CFT or PBR for the applicable assets and liabilities.

G. Granularity

If available and practical, companies should provide results at the product and/or LOB level, in addition to aggregate level.

Companies are not expected to submit results in greater granularity than what is already part of normal procedures. This request envisions that many companies aggregate multiple models representing different products or blocks. As a result, we expect that many companies can provide field test results at a less-aggregated step of the process, in addition to the fully aggregated step.

H. Field Test Scenarios

The field test will be quantifying the following:

- Use of an asset-based metric on C3 Phase 1, which would be consistent with C3 Phase 2
- The addition of Equity-Linked Annuities, such as FIA, to the scope of C3 Phase 1
- Use of prescribed asset default costs on C3 Phase 1, consistent with VM-20 Section 9.F
- Use of a prescribed equity modeling approach for C3 Phase 1
- Impact of discounting at NAER or direct iteration

The following results are requested:

Provide the statutory reserve, capital, and the sum of reserve and capital for each sensitivity. The Baseline run results will be compared to the Reported C3 Phase 1 results provided in the Supplemental Information. Sensitivities 0 to 2 will build upon each other. Sensitivities 3 to 6 will be compared to Sensitivity 1.

- *Baseline: Reported C3 Phase 1 Results as of Year End 2025*
    - Based on GOES interest rate scenarios, with Surplus-Based metric discounted at 105% of the after-tax 1-year U.S. treasury rates.

- Company default cost assumptions from current C3 Phase 1 methodology
- Does not include Equity-Linked Annuities, such as FIA.
- If company uses proprietary generator, provide a baseline that is restated under GOES.

- *Sensitivity 0 (Optional): Impact of Adding Equity-Linked Annuities to Current C3 Phase 1*
  - Based on GOES interest rate scenarios, with Surplus-Based metric.
  - **Including Equity-Linked Annuities, such as FIA,** utilizing the spirit of the current C3P1 instructions as much as possible.
  - *Compare to Baseline.*

- *Sensitivity 1: Impact of Asset-Based Metric with Prescribed Default Cost Assumptions*
  - Based on GOES interest rate scenarios, including Equity-Linked Annuities, such as FIA.
  - **Asset-Based Metric**, **Prescribed Defaults** as specified under VM-20 Section 9.F.
  - *Compare to Baseline (or Sensitivity 0 if available)*

- *Sensitivity 2: Impact of Prescribed Equity Modeling Approach*
  - Based on GOES interest rate scenarios, including Equity-Linked Annuities, such as FIA.
  - Asset-Based Metric, Prescribed Defaults as specified under VM-20 Section 9.F.
  - Use **prescribed equity modeling approach** as described in Appendix I.
  - *Compare to Sensitivity 1*

- *Sensitivity 3: Impact of Discounting*
  - Based on GOES interest rate scenarios, including Equity-Linked Annuities, such as FIA.
  - Asset-Based Metric, Prescribed Defaults, **discounted at NAER or using direct iteration.**
  - Use prescribed equity modeling approach as described in Appendix I.
  - *Compare to Sensitivity 2*

- *Sensitivity 4 (Optional): Impact of Prescribed Default Costs*
  - GOES Interest Rates, Asset-Based Metric, including FIA if provided in Sensitivity 0.
  - **Company Defaults from current C3P1 methodology.**
  - *Compare to Sensitivity 1*

- *Sensitivity 5 (Optional): Impact of Different Economic Conditions*
  - **GOES Interest Rates Shock Up**.
  - Asset-Based Metric, Prescribed Defaults, including FIA if provided in Sensitivity 0.
  - *Compare to Sensitivity 1*

- *Sensitivity 6 (Optional): Impact of Different Economic Conditions*
    - **GOES Interest Rates Shock Down**.
    - Asset-Based Metric, Prescribed Defaults, including FIA if provided in Sensitivity 0.
    - *Compare to Sensitivity 1*

- *Sensitivity 7 (Optional): Impact of Stochastic Equity for All Liability Types*
    - GOES Interest Rates + **GOES STOCHASTIC EQUITY (Initial Regulator Proposal)**.
    - Asset-Based Metric, Prescribed Defaults, including FIA if provided in Sensitivity 0.
    - *Compare to Sensitivity 2*

In tabular form, please see the below requested or optional runs. Highlighted shows the change in each sensitivity.

	Requested or Optional	Surplus or Asset Based	FIA	Interest Rates	Equity	Defaults	Discounting
Baseline	Requested	Surplus	No	GOES	Company	Company	105% * 1-yr UST
Sens 0	Optional	Surplus	**Yes**	GOES	Company	Company	105% * 1-yr UST
Sens 1	Requested	**Asset**	If in Sens 0	GOES	Company	**VM-20**	105% * 1-yr UST
Sens 2	Requested	Asset	If in Sens 0	GOES	**GOES**	VM-20	105% * 1-yr UST
Sens 3	Requested	Asset	If in Sens 0	GOES	GOES	VM-20	**NAER or Direct Iteration**
Sens 4	Optional	Asset	If in Sens 0	GOES	Company	**Company**	105% * 1-yr UST
Sens 5	Optional	Asset	If in Sens 0	GOES + **shock up**	Company	VM-20	105% * 1-yr UST
Sens 6	Optional	Asset	If in Sens 0	GOES + **shock down**	Company	VM-20	105% * 1-yr UST
Sens 7	Optional	Asset & Surplus	If in Sens 0	GOES	**Academy**	VM-20	105% * 1-yr UST

Section III: Supplemental Information

Additional analytics are requested to help explain the field test results to ensure the methodology reasonably measures C3 risks. These analytics will be compared along with the field test results. The analytics requested include:

A. Current Capital Results

Please provide your reported C3 Phase 1 result amount as of the valuation date as well as the modeled reserves by High/Medium/Low Risk categories, and the factor-based result. If your current C3 Phase 1 result is floored, please calculate the unfloored amount. These results will be used to compare against the new framework results to help the NAIC and Domestic Regulators to understand the impact of the new framework.

B. Liability Analytics

Average Issue Year and Statutory Reserves net of reinsurance.

VERSION 1

Low Risk Category

- Annuity Reserve with Fair Value Adjustment (excluding unitized separate accounts)
- Annuity Reserve not Withdrawable (excluding structured settlements)
- Guaranteed Investment Contract (GIC) Reserve within 1 Year of Maturity
- Single Premium Life Insurance Reserves

Medium Risk Category

- Annuity Reserve at Book Value Less Surrender Charge of 5 Percent or More
- Exhibit 7 Reserve not Included Elsewhere
- Structured Settlements
- Additional Actuarial Reserves for Annuities and Single Premium Life—Asset/Liability Analysis

High Risk Category

- Annuity Reserve at Book Value Without Adjustment (minimal or no charge or adjustment)
- Debt with GIC-like Characteristics (see Appendix 1 & 1b Instructions)

Synthetic GICs

VERSION 2

- Retail Life
- BOLI/COLI
- Variable Annuities
- Indexed Linked Variable Annuities (ILVA, RILA)

- Deferred Annuities (SPDA, FPDA), Multi-Year Guarantee Annuities (MYGA)
    - With and without Guaranteed Life Benefits (GLB)
    - With and without Market Value Adjustments (MVA)
- Income Annuities—Single Premium Immediate Annuities (SPIA), Deferred Income Annuities (DIA)
- Fixed Indexed Annuities (FIA)
    - With and without GLB
    - With and without MVA
- Structured Settlements Contracts (SSC)
- Pension Risk Transfer (PRT)
- Guaranteed Investment Contracts (GICs)/Synthetic GICs
- Stable Value Contracts
- Funding Agreements
- Other (please specify)

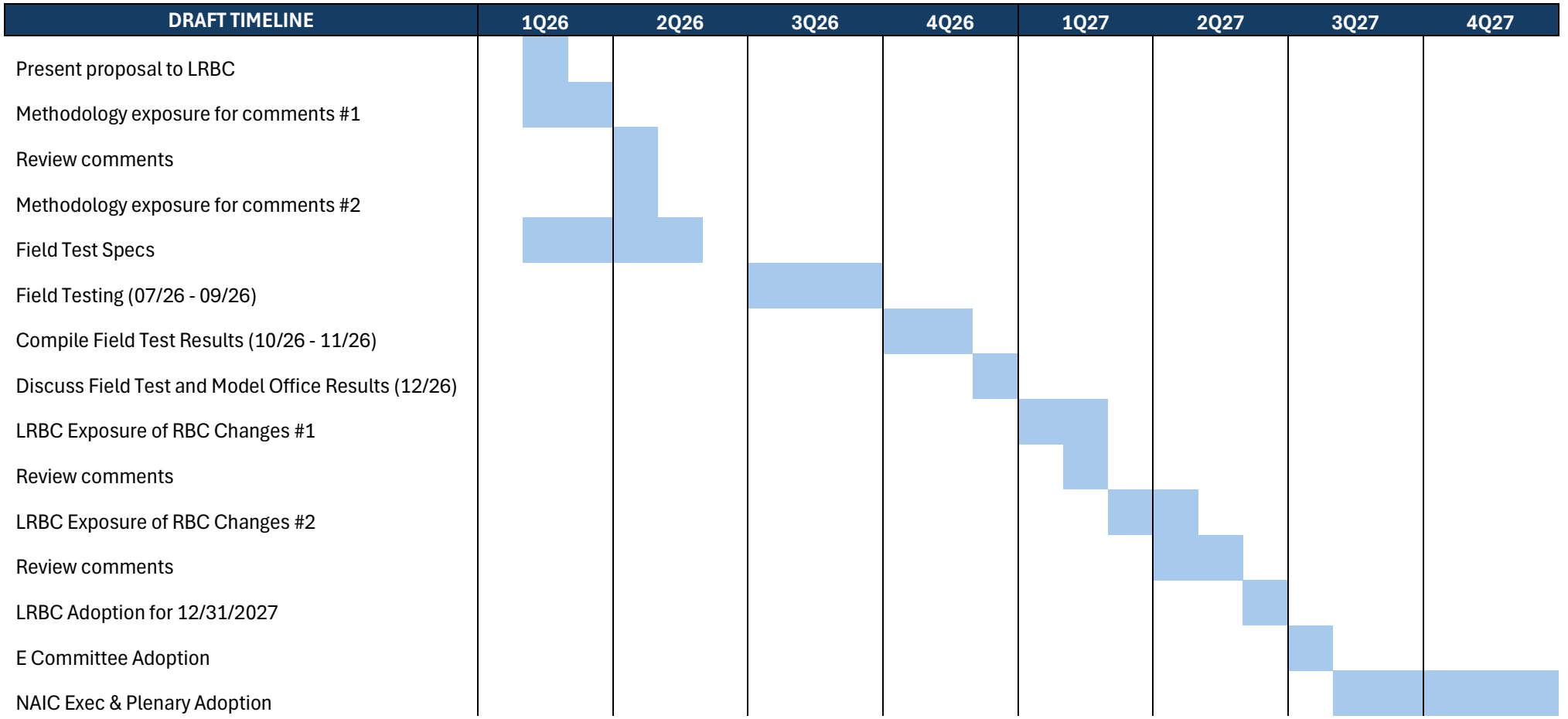
Appendix I: Stochastic Equity Levelized Return Illustration

Complete Sensitivity 2, which will be compared to Sensitivity 1 in order to estimate the impact of the proposed Academy equity scenarios.
For developing the greatest present value of accumulated deficiencies (GPVAD) results that include equity linked assets and liabilities, use the following methodologies depending on the type of equity exposure.

Type of Equity Exposure	Proposal
Equity instruments to hedge predictive liabilities cash flows (e.g., FIA index hedge or indexed GIC)	• **Exclude stochastic equity risk from C3P1.** • Assume hedges are effective and reflect same index hedges error margin for reserve and capital for additional conservatism.
Equity instruments to hedge the unpredictive liability cash flows (e.g., FIA with GLWB)	• **Model stochastic equity but allow hedge modeling simplification.** • Unlike VA, the liability cash flows are mostly exposed to the policyholder behavior assumption risk than equity risk. • Optional credit adjustment to account for double counting of risk reflected in the C1 equity risk charge and the C3 calculation.
Equity instruments on general account assets (e.g., equities backing long-duration contracts such as SSC)	• **Develop the prudent estimate levelized return to avoid exacerbating capital requirement.** • Option 1 -- The prescribed levelized equity return equals the gross wealth factor (GWF) at specified CTE level for the projection years that reflect the average liability duration and then appending the new levelized return for the remaining years which equal to the GWF at the same CTE level at projection year 50 (See next slide for illustration). • Option 2 -- Use AG-53 compliant assumption for general account equities[1]

[1]An equity-like instrument under AG-53 assumed to have higher value at projection year 10 or later than under an assumption of annual total returns, before the deduction of investment expenses, of 4% for the first 10 projection years after the valuation date followed by 5% for projection year 11 and after.

Appendix II: Timeline



C-3 Alignment, Part III

Life Risk-Based Capital (E) Working Group

September 11, 2025

American Academy of Actuaries

About the Academy

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Objectives of Discussion

- Outline set of current C-3 framework recommendations.
- Highlight framework decisions where further analysis is recommended.
- Discuss when framework elements would be implemented.
- Solicit feedback on the above from regulators and interested parties to be used to inform future Field Test and Model Office analysis.

Summary of Key Framework Proposals

- **Adoption Date and Phase-in**: Adopt for a yet-to-be-determined year-end with a three-year phase-in period, dependent on field testing and model office schedule.
- **Product Scope**: All current products subject to C3 Phase 1 and C3 Phase 2 will transition to new methodology. FIA will be included in scope of C3 Phase 1.
- **Scenarios**: Use new Generator of Economic Scenarios.
- **Discounting**: Leverage C3 Phase 2 discounting, i.e., Net Asset Earned Rate or Direct Iteration.
- **Assumptions and Models**: Use PBR models with prudent estimate assumptions where possible. Otherwise, continue to use CFT models with moderately adverse assumptions.
- **Factor-based C-3 Floor**: Factors will be revisited at a future date and will remain unchanged for now.
- **Aggregation between C3P1 and C3P2**: Will be revisited once methodologies are finalized.

Framework Proposals where Additional Feedback is Requested

A Field Test (FT) and a Model Office (MO) analysis are expected to provide additional information to inform these framework decisions.

- **Metric**: MO measures run on the bank and stress testing results and will be used to determine whether an asset-based metric sufficiently captures RBC interest rate risk, or whether projection of a working reserve and use of a surplus-based metric is needed. Note the field test will likely only measure results for well-matched companies. Model office can analyze metrics for other ALM scenarios.
- **Scalar**: YY% x (CTE XX less Reserves), where YY and CTE XX will be informed by further analysis.
- **Time Horizon**: To be informed by further analysis and choice of metric and scalar.
- **Default Costs**: Explore materiality of double counting of default costs between C1 and C3 and approaches to address if material.
- **Stochastic Equity**: Determine if material and degree of effort required to capture.

Should any of the above components be included in the FT/MO analysis before a decision is made, implemented or deferred to a later date? Are there other components that should be considered?

Feedback Request

We request preliminary feedback in the following areas so that the Academy can work towards designing analysis for model office testing and field testing.

- Are there any components of the proposal that regulators would like to be implemented for year-end 2026 (with implementation of GOES and VM-22), year-end 2027 or at a future date?
- What components should be included in model office testing or a broader field test before a decision is made?
- Any analysis or components of the proposal that should be deferred?
- Are there any other components not captured in the current proposal that should be added to the analysis?

Questions?

For more information, please contact

Amanda Barry-Moilanen, Policy Project Manager, Life

barrymoilanen@actuary.org

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Appendix – Prior Presentations

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C-3 Alignment, Part II

Life Risk-Based Capital (E) Working Group

May 1, 2025

American Academy of Actuaries

About the Academy

The American Academy of Actuaries is a 20,000-member professional association whose mission is to serve the public and the U.S. actuarial profession. For 60 years, the Academy has assisted public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

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Summary of Key Framework Proposals

- Adoption Date and Phase-in: Adopt for year-end 2026 with a three-year phase in period, but dependent on field testing schedule.
- Product Scope: All current products subject to C3 Phase 1 and C3 Phase 2 will transition to new methodology for year-end 2026. FIA will be included in scope of C3 Phase 1.
- Scenarios: Use new Generator of Economic Scenarios
- Discounting: Leverage C3 Phase 2 discounting, i.e., Net Asset Earned Rate or Direct Iteration

Summary of Key Framework Proposals

- Assumptions and Models: Use PBR models with prudent estimate assumptions where possible. Otherwise, continue to use CFT models with moderately adverse assumptions.
- Factor-based C-3 Floor: Factors will be revisited at a future date and will remain unchanged for now.
- Default Costs: Explore an optional credit to offset the double counting of default costs between C1 and C3.
- Aggregation between C3P1 and C3P2: Will be revisited once methodologies are finalized.

Key Focus of Today's Discussion

- Recap of Default Costs
- Stochastic Equity Risk
- Metric, Scalar, Working Reserves and Time Horizon
- Next Steps

Recap of Default Costs

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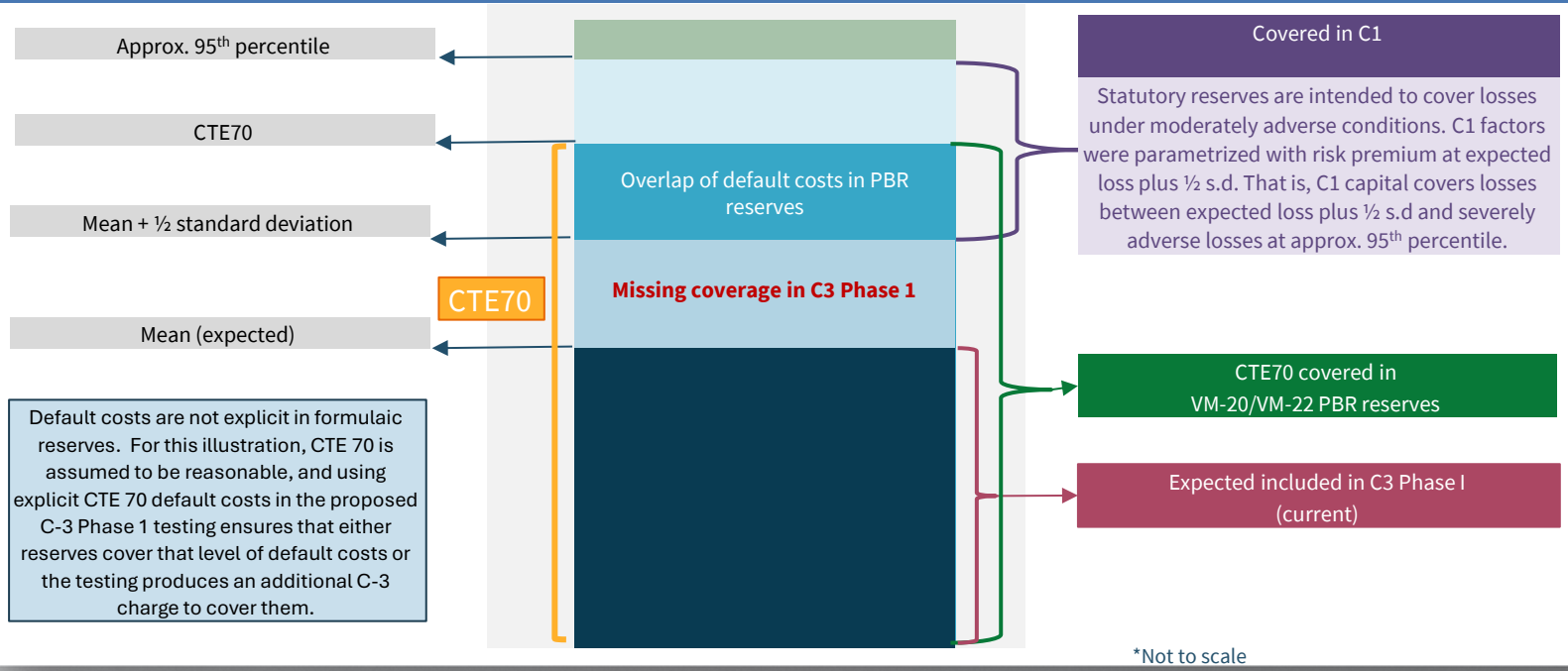
C-3 Default Costs

- C-1 RBC for fixed income assets, such as bonds and commercial mortgages, is based on the difference between the value of severely adverse default costs and the value of default costs assumed to be covered in reserves.
- For assets that cover more than the assumed level of defaults, under the relevant reserve or C-3 testing framework, RBC factors double-count the value of the portion of the default costs between the assumed coverage levels in the C-1 models and the actual coverage levels in the reserve or C-3 models.
- Recommend updating default cost assumptions in C-3 Phase 1 to more conservative CTE70 level to allow the same default assumption to be used for reserves and capital.
- CTE70 is a generally accepted standard for prudent estimate default costs and required for PBR and C-3 Phase 2.
- Because of difference with default assumption in C-1 capital, results in potential additional margin on C-1 risk capital.

Default Costs Illustration*



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C-1 Risk Capital Credit

- Generally, adjustments are not made in the RBC framework for potential deficiencies or excess in other components.
- If an adjustment is included, a possible recommendation is a factor-based credit applied to the assets included in C-3 testing to offset the C-1 risk capital margin.

Asset category	Estimated factor credit[1]
Bonds – investment grade bonds	20%
Bonds – below investment grade	15%
Commercial mortgages	Double bond credit

- Recommend further study to explore an *optional* credit that would address the double counting.

[1]From the 2021 Moody's Analytics C-1 Bond RBC report

Stochastic Equity Risk

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Stochastic Equity - Background

- Historically, the intent of the C3P1 is to address asset/liability mismatch (ALM) risk due to interest rate risk for annuities and single premium life.
  - Disintermediation risk when selling assets at the depressed value to support policyholders' obligations, or
  - Reinvestment risk that investment returns will decline to the point that they are unable to service on-going policyholders' obligations.
- The addition of equity risk in the C3P1 calculation was tested as a part of the VM-22 PBR field test. The introduction of stochastic equity returns could introduce interim deficiencies.

Stochastic Equity – Issues

- Similar to default costs, the introduction of stochastic equity could introduce a double count in capital that is already covered by C-1 equity risk charge.
    - The current C-1 common stock equity factor was based on the 94th percentile worst loss over twenty-four-month periods.
    - The 2013 study continues to use a two-year loss horizon and retained the same 30% factor that was originally proposed in 1993.
    - The interim deficiencies that occur in the first two years of the C3 calculation as a result of unfavorable equity returns under GOES are already reflected in C1.

Stochastic Equity – Proposal

Type of Equity Exposure	Proposal
Equity instruments to hedge predictive liabilities cash flows (e.g., FIA index hedge or indexed GIC, etc)	• **Exclude stochastic equity risk from C3P1.** • Assume hedges are effective and reflect the same index hedge error margin for reserve and capital for additional conservatism.
Equity instruments on general account assets (e.g. equities backing long-duration contracts such as SSC)	• **Develop a prudent estimate levelized return to avoid exacerbating capital requirement.** • Option 1 -- The prescribed levelized equity return equals the gross wealth factor (GWF) at specified CTE level for the projection years that reflect the average liability duration and then appending the new levelized return for the remaining years which equal to the GWF at the same CTE level at projection year 50 (See next slide for illustration). • Option 2 -- Use AG-53 compliant assumption for general account equities[1]
Equity instruments to hedge the unpredictive liability cash flows (e.g., FIA with GLWB, etc)	• **Model stochastic equity, but allow hedge modeling simplification.** • Unlike VA, the liability cash flows are mostly exposed to the policyholder behavior assumption risk rather than equity risk. • Optional credit adjustment to account for double counting of risk reflected in the C1 equity risk charge and the C3 calculation.

[1]: An equity-like instrument under AG53 assumed to have higher value at projection year 10 or later than under an assumption of annual total returns, before the deduction of investment expenses, of 4% for the first 10 projection years after the valuation date followed by 5% for projection year 11 and after.

Stochastic Equity -- Levelized Return (Option1) Illustration

- Assume the following:
  - 30 years projection
  - C3P1 metric is based on the CTE90 (it is similar to 95th percentile)
  - Average liability duration = 10
- Based on the latest GOES equity GWFs (see right table)
- Annualized levelized return:
  - First 10 years: -0.7% = 0.93 ^(1/10) - 1
  - Remaining 20 years: 4.4% = (2.22/0.93) ^ (1/20) - 1

S&P 500	1 Yr	5 Yr	10 Yr	20 Yr	30 Yr
Min	0.50	0.23	0.17	0.09	0.17
1.0%	0.71	0.59	0.58	0.73	1.12
2.5%	0.77	0.71	0.77	1.07	1.60
5.0%	0.83	0.82	0.93	1.40	2.22
10.0%	0.89	0.94	1.16	1.87	3.20
25.0%	0.99	1.19	1.58	2.92	5.45
50.0%	1.10	1.50	2.16	4.50	9.37
75.0%	1.20	1.82	2.88	6.78	15.68
90.0%	1.29	2.14	3.67	9.59	23.92
95.0%	1.35	2.37	4.25	11.72	30.79
97.5%	1.40	2.57	4.86	13.85	37.57
99.0%	1.46	2.83	5.66	17.28	47.69
Max	1.81	4.14	9.45	34.11	136.91

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C-1 Risk Capital Credit – Stochastic Equity

- Ignore the first two years of projection in GPVAD (surplus) calculation.
- Factor-based credit applied to equity assets included in C-3 testing to offset the C-1 risk capital margin.

Asset category	Estimated factor credit
Common stock	30%
Other equity-like assets	TBD

- TBD

Metric, Scalar, Working Reserves, Time Horizon

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Metric and Scalar

- Consideration for measurement of the risk is ongoing, but will hinge on the defined metric while using the following formula:
  - **YY% x (CTE XX less Reserves)**
- YY% and CTE XX to be finalized with support of field-testing results.
- The projection length, or time horizon, will also be dependent on whether a working reserve is included.
- Prior to PBR, statutory reserves were formulaic, so interim reserves could easily be calculated. With PBR, a first principles interim reserve would require a nested stochastic projection, which may be onerous.
- The choice between a short-term **surplus** measure vs a long-term **asset** measure is dependent on what risk is intended to be captured. That is, a short-term surplus measure captures more disintermediation on deferred annuities risk vs the long-term asset measure capturing more reinvestment risk

Greatest Present Value of Accumulated Deficiencies (Surplus)

- C-3 Phase 1 currently uses a GPVAD (**surplus)** measure.
- This measure focuses on projecting the statutory surplus, which accounts for future reserve changes. The measure inherently accounts for interim deficiencies by reviewing how future reserve changes could impact surplus.
- Due to the requirement of projecting future reserves, this measure may present computational challenges when reprojecting PBR reserves at future points in time. Particularly if those reserves are currently determined using stochastic scenarios.
- Approximations can be made by assuming the working reserve is equal to CSV, factor of formulaic reserve, actuarial present values or other simplifications for nested simulations.
- If this approach is taken, a shorter time horizon would likely be recommended.
- An interim surplus measure would capture more short-term disintermediation risk on deferred annuities.
- As noted earlier in the presentation, if stochastic equity is required, interim deficiencies on assets would be impacted, which would not have occurred in the current calculation methodology.

Greatest Present Value of Accumulated Deficiencies (Assets)

- C-3 Phase 2 metric uses an GPVAD (**asset**) measure (working reserves are set to zero). This change was made as a part of VA Reform project.
- The metric focuses on claims payment ability and does not look at interim surplus deficiencies due to long-term reserve changes.
- Due to the computational simplicity relative to GPVAD (Surplus), the projection horizon can be set long enough to capture the life of the business.
- For PBR business, the same model may be leveraged for both reserve and capital setting.
- It was noted as part of VA Reform that the use of working reserves discouraged hedging due to the accounting mismatch between assets and liabilities.
- A long-term asset measure would capture more reinvestment risk, which could offset short term disintermediation risk.

Example Illustration: Baseline

Assumptions

- 10-yr contract with a bullet payment at the end of 10 years.
- Asset earned rate: 2.0% for Yrs 1-5 and 5.5% for Yrs 6-10
- Guaranteed AV credited rate of 5.0%
- CARVM Stat Val Rate of 4.0%

Balance Sheet	0	1	2	3	4	5	6	7	8	9	10
Assets											
Bonds	110.04	112.24	114.49	116.78	119.11	121.50	128.18	135.23	142.67	150.51	158.79
Liabilities and Surplus											
CARVM	110.04	114.44	119.02	123.78	128.73	133.88	139.24	144.81	150.60	156.62	162.89
CSV	100.00	105.00	110.25	115.76	121.55	127.63	134.01	140.71	147.75	155.13	162.89
Surplus	-	(2.20)	(4.53)	(7.00)	(9.62)	(12.39)	(11.06)	(9.58)	(7.94)	(6.11)	(4.10)

Example Illustration: Baseline

1. For the first 5 years, the change in liabilities (CARVM reserves) exceeds the change in assets, which results in deficiencies in early years. This relationship changes after year 6 when the asset earned rate increases.
2. This results in the C3 requirement under the surplus measure to peak at year 5, despite the liability payment only being in year 10. This is due to the C3 requirement being used to fund interim deficiencies as the reserve changes outpace the asset changes.
3. The C3 requirement under the asset measure is driven by focusing on whether the assets can pay the liability that is due in year 10.

GPVAD Scenarios	0	1	2	3	4	5	6	7	8	9	10
Working Reserves = CARVM											
Surplus	-	(2.20)	(4.53)	(7.00)	(9.62)	(12.39)	(11.06)	(9.58)	(7.94)	(6.11)	(4.10)
GPVAD (Surplus)		(2.16)	(4.36)	(6.60)	(8.89)	(11.22)	(9.50)	(7.80)	(6.12)	(4.47)	(2.84)
C3	(11.22)										
Working Reserves = $0											
Surplus = Assets	110.04	112.24	114.49	116.78	119.11	121.50	128.18	135.23	142.67	150.51	(4.10)
GPVAD (Surplus)		110.04	110.04	110.04	110.04	110.04	110.04	110.04	110.04	110.04	(2.84)
C3	**(2.84)**										

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Example Illustration: Interest Rate Spike

Assume spike in rates of 3% in year 5.

1. As a result of the interest rate spike, 20% surrender is assumed. This resulted in an outflow of $25.53.
2. Assets are sold at a loss due to the market value decrease. Higher level of assets ($46.35)need to be sold to fund the book value liability, thereby resulting in negative surplus.

Balance Sheet	0	1	2	3	4	5	6	7	8	9	10
Assets											
Bonds	110.04	116.09	122.48	129.22	136.32	75.14	79.28	83.64	88.24	93.09	98.21
Liabilities and Surplus											
CARVM (WR)	110.04	114.44	119.02	123.78	128.73	107.11	111.39	115.85	120.48	125.30	130.31
CSV	100.00	105.00	110.25	115.76	121.55	102.10	107.21	112.57	118.20	124.11	130.31
Surplus	-	1.65	3.46	5.43	7.59	(31.96)	(32.11)	(32.21)	(32.24)	(32.21)	(32.10)

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Example Illustration: Interest Rate Spike

The example below illustrates that even under an interest rate spike and excess surrenders scenarios, the GPVAD (surplus) and GPVAD (assets) both work as intended to capture their respective risks.

1 2

GPVAD Scenarios	0	1	2	3	4	5	6	7	8	9	10
Working Reserves = CARVM											
Surplus	-	1.65	3.46	5.43	7.59	(31.96)	(32.11)	(32.21)	(32.24)	(32.21)	(32.10)
GPVAD (Surplus)		1.56	3.11	4.63	6.13	(24.46)	(23.29)	(22.14)	(21.01)	(19.89)	(18.79)
C3P1	**(24.46)**										
						1					
Working Reserves = $0											
Surplus = Assets	110.04	116.09	122.48	129.22	136.32	75.14	79.28	83.64	88.24	93.09	(32.10)
GPVAD (Surplus)		110.04	110.04	110.04	110.04	57.50	57.50	57.50	57.50	57.50	(18.79)
C3P1	**(7.79)**										
											2

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Comparison of Options

GPVAD (Assets)

Pros

- Focus on solving for level of assets that would result in the defeasement of future liabilities.
- Can support a longer projection length and could leverage same model runs as was used for reserving, particularly on PBR business. A longer projection is more conservative.
- Consistency with current C3 Phase II methodology.
- May be more optimal for hedging as removes the misalignment of market-sensitivity between economic and statutory funding requirements.

Cons

- Does not consider interim surplus deficiencies, and therefore, will not fully capture future adverse scenarios where PBR reserves could dramatically increase.

GPVAD (Surplus)

Pros

- Focuses on funding future claims and reserve funding requirements.
- Considers interim deficiencies, which ensures capital accounts for both economic and statutory insolvencies.
- Maintains current methodology on C3 Phase I.

Cons

- Calculating a projected reserve, especially under PBR, would be computationally intensive due to nested stochastic calculations. The impact from the types of approximations for future PBR requirements have not been explored yet and therefore unclear.
- Discourages hedging due to accounting mismatch between hedge assets and working reserves.
- Would require a shorter projection length given the computational requirements.

Next Steps

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Next Steps

- Confirm field testing time horizon
- Recommend an evaluation of consistency of C-1 methodology between PBR and capital be performed, and adjust recommendations as necessary
- Review field test specifications based on feedback from discussions
- Perform field test and leverage output to assist regulators in making final decisions

Questions?

For more information, please contact

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Prior Presentation

3/24/2025

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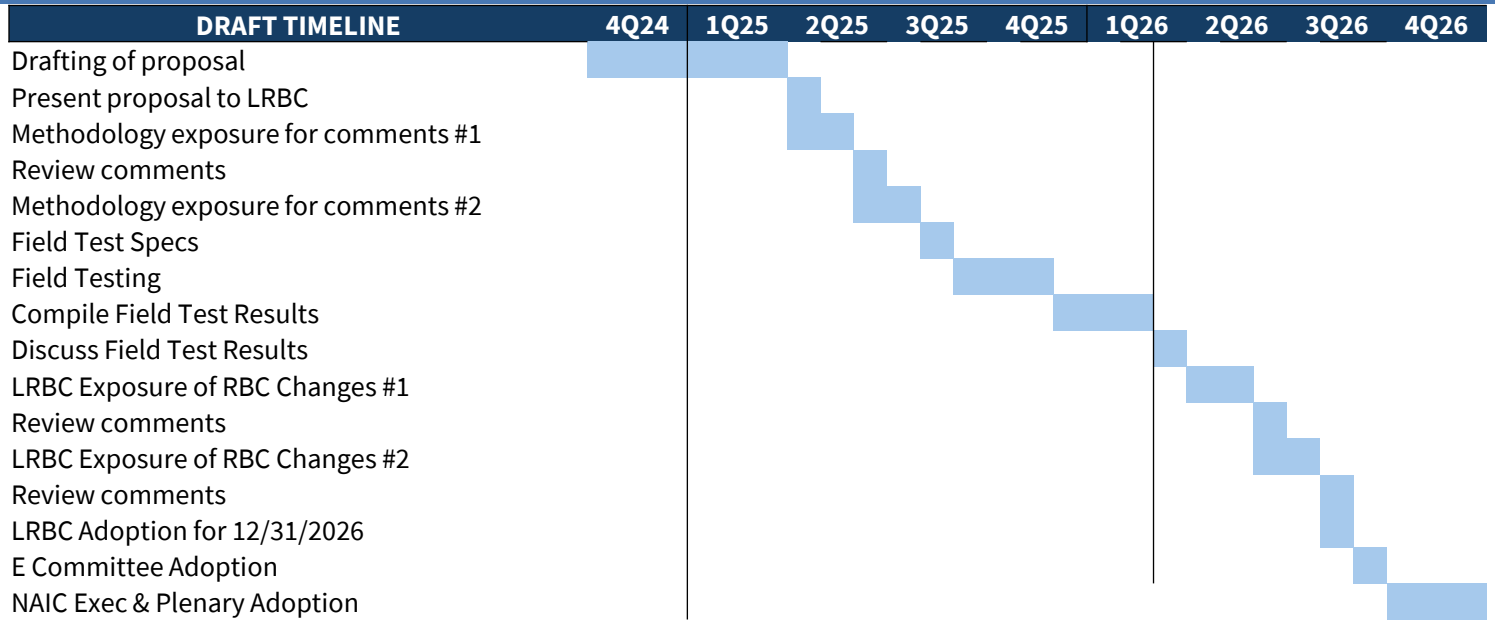
Background

- C-3 Phase 1 applies to Single Premium Life and Non-Variable Annuities (excluding Fixed Index Annuities – FIA) and has not been updated in decades.
- C-3 Phase 2, which applies to Variable Annuities including Registered Index Linked Annuities, was recently updated and tested.
- Our purpose is to propose how to harmonize C-3 Phase 1 and C-3 Phase 2 methodology.

Approach to C-3 Alignment

- C-3 Phase 2 methodology was reviewed by the NAIC over the past 8 years.
- Where possible, C-3 Phase 1 will adopt changes to align with C-3 Phase 2.
- Given the scale of changes, we propose a phased approach with some changes being reflected by year-end 2026.
    - This would include the adoption of the new Generator of Economic Scenarios (GOES) which will also the prescribed generator for C-3 Phase 2 and PBR.
- Other changes may be deferred due to feasibility, magnitude of impact, and to avoid unintended consequences.

Timeline, Adoption, Phase In Period



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Timeline, Adoption, Phase In Period

- We anticipate a field test during 2025 and adoption effective year-end 2026.
- We propose a three-year phase-in period for changes that are effective at year-end 2026.
- We propose that other C-3 changes are phased in during future years and will be outlined in the rest of the presentation

Scenarios

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Economic Scenarios

- C-3 Phase 1 scenarios have a high Median Reversion Point (MRP) and do not include equity returns.
- C-3 Phase 2 scenarios have a formulaic MRP weighted toward recent rates and include equity returns.
- Propose using the new GOES that is expected to be adopted for an effective date of 2026.

Product Scope

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Product Scope

The ultimate goal is a C-3 framework with consistent scenarios, metrics, and legal entity level aggregation for all products. We propose reviewing other products at a future date.

		Smallest step Option1	**Recommended** Option 2[1]	Option 3	*Closest to Ultimate Goal* Option 4
C3P1	Single Premium Life	Old C3P1	**New C3P1**	Old C3P1	**New C3P1**
	Single/Flexible Premium Annuity	**New C3P1**	**New C3P1**	Old C3P1 **PBR Annuity to New C3P1**	**New C3P1**
C3P2	VA RILA	C3P2	C3P2	C3P2	C3P2
Currently out of scope	FIA	**New C3P1**	**New C3P1**	**New C3P1**	**New C3P1**
	LTC	defer	defer	defer	**New C3P1**
	ULSG	defer	defer	defer	**New C3P1**
	Remaining Life & Health products	defer	defer	defer	defer
	Pro	small manageable step	maintains existing aggregation	aligns reserving and capital models to PBR only business	closest to ultimate goal
	Con	lose aggregation between life & annuity - which would ultimately be added back later	larger step, could be harder to execute quickly	inconsistent capital between in force and new business	most difficult to implement in one step

1: This option aligns with the timeline presented on slide 5

Discounting

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Discounting

- **Background**
  - Phase 1 uses one-year Treasury rate discounting. Inforce assets and reinvestment assets are typically longer in duration than one year and lower in credit quality than Treasuries, both of which tend to increase yields.
  - Phase 2 allows discounting at the Net Asset Earned Rate (NAER), which likely produces better estimates of the amount of additional assets needed to eliminate a deficiency than does phase 1 discounting.
  - Phase 2 also allows Direct Iteration which solves for the amount of additional assets needed to eliminate a deficiency, whereas Phase 1 does not.
- **Proposal**
  - Use Phase 2 discounting rules which allow the use of NAER for discounting or Direct Iteration.
- **Rationale**
  - Better estimate of the amount of additional assets needed to eliminate a deficiency.
  - More principle-based.

Assumptions and Models

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Current Assumptions and Models

- C-3 Phase 1: Cash Flow Testing (CFT)-based assumptions that are considered “moderately adverse.”
- C-3 Phase 2: Principles Based Reserve (PBR) prudent estimate assumptions.

Short-Term Solution Starting Year-End 2026 (Recommended)

- **Proposal: bifurcated solution**
  - Use PBR models and assumptions for business subject to PBR (VM-20, VM-21, VM-22).
  - Use CFT models and assumptions for non-PBR business.
  - Potentially allow flexibility between the two approaches for business subject to PBR due to operational complexity.
  - Add other products if/when underlying reserve moves to PBR.
- **Pros**
  - Efficiency of using same underlying model for reserves and capital.
  - Similar to C3P2 for Variable Annuities.
- **Cons**
  - Need to maintain two sets of models/assumptions.

Default Costs

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C-3 Default Costs

Current		
	Non-PBR	PBR
Reserves	Moderately adverse (approach varies)	CTE70
Reserves (assumed in C-1 RBC)	Mean + ½ standard deviation	Mean + ½ standard deviation
C-3 Phase 1	Expected Defaults	Expected Defaults
C-3 Phase 2	CTE70	CTE70

Recommended		
	Non-PBR	PBR
Reserves	Moderately adverse (approach varies)	CTE70
Reserves (assumed in C-1 RBC)	Mean + ½ standard deviation	Mean + ½ standard deviation
C-3 Phase 1	CTE70	CTE70
C-3 Phase 2	CTE70	CTE70

- Recommend updating default cost assumptions in C-3 Phase 1 to more conservative CTE70 level.
- CTE70 is a generally accepted standard for moderately adverse default costs and consistent with PBR and C-3 Phase 2.
- Because of difference with default assumption in C-1 capital, results in potential additional margin on C-1 risk capital.

C-1 Risk Capital Credit

- Generally, adjustments are not made in the RBC framework for potential deficiencies or excess in other components.
- If an adjustment is included, a possible recommendation is a factor-based credit applied to the assets included in C-3 testing to offset the C-1 risk capital margin.

Asset category	Estimated factor credit
Bonds – investment grade bonds	20%
Bonds – below investment grade	15%
Commercial mortgages	Double bond credit

- Recommend further study to explore an *optional* credit that would address the double counting.

Stochastic Equity Risk

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Stochastic Equity

- **Background & Considerations**
  - Similar to default costs, double counting of RBC related to general account (GA) equity (or equity-like) assets is being reviewed
  - Additionally, equity risk reflected in the current C-1 charge (based on 2013 historical experience measured over a 2-year exposure period) differs from the C-3 stochastic equity element captured over a set of real-world scenarios
  - Considerations for companies with a material equity exposure in the GA are being discussed. Topics include:
    - Definition of the materiality threshold, e.g., 5% of GA for liquid liabilities or 15% for illiquid liabilities
    - Excluding equity-like assets in C-3 calculations from C-1 charge
    - Maintain C-1 charge, but allow for deficiency smoothing to address equity volatility, akin to SSAP 108 hedge accounting practices

Aggregation of C3P1 and C3P2

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Aggregation

- **Background**
  - C-3 Phase 1 and C-3 Phase 2 are calculated separately with no aggregation.
- **Ideal Proposal**
  - No differences between C-3 Phase 1 and C-3 Phase 2 methodology and aggregation fully reflected.
- **Current Proposal**
  - Aggregation is permitted but not required (under certain conditions). Pros and cons reference this proposal.
- **Pros**
  - Reflects diversification between products, consistent with how a company manages interest rate risk.
- **Cons**
  - Requires consistency between C-3 Phase 1 and C-3 Phase 2 methodologies (dependent on outcome of other C3 – Alignment proposals)
  - Operationally complex; requires methodology for splitting VA market risk from aggregated interest rate risks.

Aggregation - Continued

- **Parameters for Permitted Aggregation in 2026**
  - This will need to be revisited based on proposals for other topics, such as models, assumptions, and number of scenarios.
  - If there is not full consistency between C-3 Phase 1 and C-3 Phase 2, is there still some level of aggregation that can be used?
  - For example, if Company does not have alignment on interim reserves for CFT vs. PBR assumptions, can Company still reflect aggregation across scenarios if both C-3 Phase 1 and C-3 Phase 2 use the same 1000 scenarios?

Factor Based C-3 Floor

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C-3 Floor Amount - Background

- The C-3 factors are meant to provide for a “lack of synchronization of asset and liability flows.”
  - Factors are from the 1991 study report. The “Low-Risk” category assumes a well-matched portfolio (1/8th of a year difference). The other risk category factors were developed by stochastic modeling of asset and liability cashflows.
- For companies that utilize the C-3 cash flow approach, there is a floor equal to ½ the standard factors.
- Assets, liabilities, and investment strategies are likely much different today than 1991, for many companies:
  - Assets – ABS, floating rate assets, equities
  - Liabilities – Embedded options in products
  - Investment Strategies – Using floating rate assets and/or equities to support some fixed rate liabilities

C-3 Floor Amount - Recommendation

- C-3 Phase 2 does not have a floor
  - PBR applies to almost all VA products and such reserves are reset each quarter, with a floor.
  - C-3 Phase 2 is based on a high CTE level (CTE 98) to encourage tail hedging.
- Significant changes to C-3 Phase 1 are being proposed for year-end 2026
  - GOES scenarios
  - Equity risk
  - FIAs
- Given the timeline, we cannot support the effort to update the C-3 factors and/or review the appropriateness of the floor at this time
- **Proposal**
  - Retain the current factors and floors for year-end 2026.
  - To be reviewed in greater detail after efforts to adopt year-end 2026 recommendations are complete.

Metric, Scalar, Working Reserves, Time Horizon

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Metric and Scalar

- C-3 Phase 1 metric is a **surplus** measure whereas C-3 Phase 2 uses an **asset** measure (working reserves are set to zero).
- Currently contemplating two Greatest Present Value of Accumulated Deficiency (GPVAD) methods:
  - GPVAD (**assets**) with projection horizon to sufficiently represent life of the business.
    - Set working reserves to zero and focus on claim payment capabilities – most aligned with C-3 Phase 2.
  - GPVAD (**surplus**) with shorter projection horizon, reasonable working reserve proxy and focus on reserve funding capabilities.
    - Working reserve proxy may range from Cash Surrender Value to Actuarial Present Value methods.

Metric and Scalar

- Consideration for measurement of the risk is ongoing, but will hinge on the defined metric while using the following formula:
  - **YY% x (CTE XX less Reserves)**
- YY% and CTE XX to be finalized with support of field testing results.
- The projection length, or time horizon, will also be dependent on whether a working reserve is included.

Next Steps

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Next Steps

- Provide recommendation on remaining topics:
    - Metric and Scalar
    - Working Reserves and Interim Measurement
    - Time Horizon
    - Stochastic Equity Risk
- Design field test