NAIC NATIONAL ASSOCIATION OF INSURANCE COMMISSIONERS

Date: 6/13/24

Virtual Meeting

LIFE RISK-BASED CAPITAL (E) WORKING GROUP
Tuesday, June 18, 2024
12:00 – 2:00 p.m. ET / 11:00 a.m. – 1:00 p.m. CT / 10:00 a.m. – 12:00 p.m. MT / 9:00 – 11:00 a.m. PT

ROLL CALL

Philip Barlow, Chair	District of Columbia	William Leung	Missouri
Ben Slutsker, Vice Chair	Minnesota	Michael Muldoon	Nebraska
Sheila Travis	Alabama	Jennifer Li	New Hampshire
Thomas Reedy	California	Seong-min Eom	New Jersey
Wanchin Chou	Connecticut	Bill Carmello	New York
Dalora Schafer	Florida	Andrew Schallhorn	Oklahoma
Vincent Tsang	Illinois	Rachel Hemphill	Texas
Mike Yanacheak	Iowa	Tomasz Serbinowski	Utah

NAIC Support Staff: Dave Fleming

AGENDA

1. Consider Adoption of Proposal 2024-15-L Collateral Loans—*Philip Barlow (DC)* — Attachments 1 & 2
2. Consider Adoption of Proposal 2024-17-L BA mortgage—*Philip Barlow (DC)* — Attachments 3 & 4
3. Discuss Covariance—*Philip Barlow (DC)* — Attachment 5
4. Discuss C-3—*Philip Barlow (DC)* — Attachments 6 & 7
5. Discuss Any Other Matters Brought Before the Working Group—*Philip Barlow (DC)*
6. Adjournment

Capital Adequacy (E) Task Force

RBC Proposal Form

☐ Capital Adequacy (E) Task Force
☐ Catastrophe Risk (E) Subgroup
☐ Variable Annuities Capital. & Reserve (E/A) Subgroup
☐ Health RBC (E) Working Group
☐ Investment RBC (E) Working Group
☐ P/C RBC (E) Working Group
☒ Life RBC (E) Working Group
☐ Longevity Risk (A/E) Subgroup
☐ RBC Investment Risk & Evaluation (E) Working Group

DATE: 03/15/2023

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ON BEHALF OF: ACLI
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TITLE: Chief Life Actuary
AFFILIATION: ACLI
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Washington, DC 20001

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Agenda Item # 2024-15-L
Year _____

DISPOSITION

ADOPTED:
☐ TASK FORCE (TF) _____
☐ WORKING GROUP (WG) _____
☐ SUBGROUP (SG) _____

EXPOSED:
☐ TASK FORCE (TF) _____
☐ WORKING GROUP (WG) _____
☐ SUBGROUP (SG) _____

REJECTED:
☐ TF ☐ WG ☐ SG _____

OTHER:
☐ DEFERRED TO _____
☐ REFERRED TO OTHER NAIC GROUP
☐ (SPECIFY) _____

IDENTIFICATION OF SOURCE AND FORM(S)/INSTRUCTIONS TO BE CHANGED

☐ Health RBC Blanks
☐ Health RBC Instructions
☐ Health RBC Formula
☐ Property/Casualty RBC Blanks
☐ Property/Casualty RBC Instructions
☐ Property/Casualty RBC Formula
☒ Life and Fraternal RBC Blanks
☒ Life and Fraternal RBC Instructions
☐ Life and Fraternal RBC Formula
☐ OTHER _____

DESCRIPTION/REASON OR JUSTIFICATION OF CHANGE(S)

Background: In order to support reporting of certain mortgage-type investments as collateral loans backed by mortgages in 2024, without changing capital treatment of BA mortgage investments, in 2024, update RBC mapping capture those investments consistent with existing practice. Note that those investments will map to AVR for Investments with Underlying Characteristics with Mortgages and be captured in that RBC category.

While this change accomplishes a "no change" result for 2024, it is expected that a broader discussion, including structural changes, will occur in 2025.

ACLI Proposal:

Life and Fraternal RBC Blanks LR008:

Update Line "(50) Schedule BA Collateral Loans" Annual Statement Source to be updated as follows:

Schedule BA Part 1 Column 12 Line 2999999 + Line 3099999, in part

The value in Column (1) Book / Adjusted Carrying Value will now be a company records entry and should represent all collateral loans which have not been captured elsewhere in the RBC formula.

Update to LR008 RBC Instructions:

Line (50)
Exclude: any collateral loan amounts which have been included elsewhere in the RBC formula, e.g., BA mortgages.

Update to LR009 RBC Instructions:

Column (1) Except for Line (1), (12), and (16), calculations are done on an individual mortgage basis and then the summary amounts are entered in this column for each class of mortgage investment. Refer to the Schedule BA mortgage calculation worksheet (Figure 10) for how the individual mortgage calculations are completed. Line (20) should equal Schedule BA Part 1, Column 12, Lines 1199999,1299999, 2399999 and 2499999, and collateral loans backed by mortgages, as reported in footnote 5T, line 7.

Additional Staff Comments:

** **This section must be completed on all forms.** **Revised 11-2023**

Collateral Loan → AVR → RBC mapping proposal - 2024

For Life RBC Working Group

Overview

In 2024, certain investments will be required to be reported as collateral loans backed by mortgages. The attached proposal comprises a mapping change from BA → AVR → RBC which results in those assets maintaining their historical capital treatment as BA mortgages. This would be appropriate given that they are fixed income instruments which are collateralized by mortgages (generally first lien mortgages) and that they therefore have mortgage-like risk.

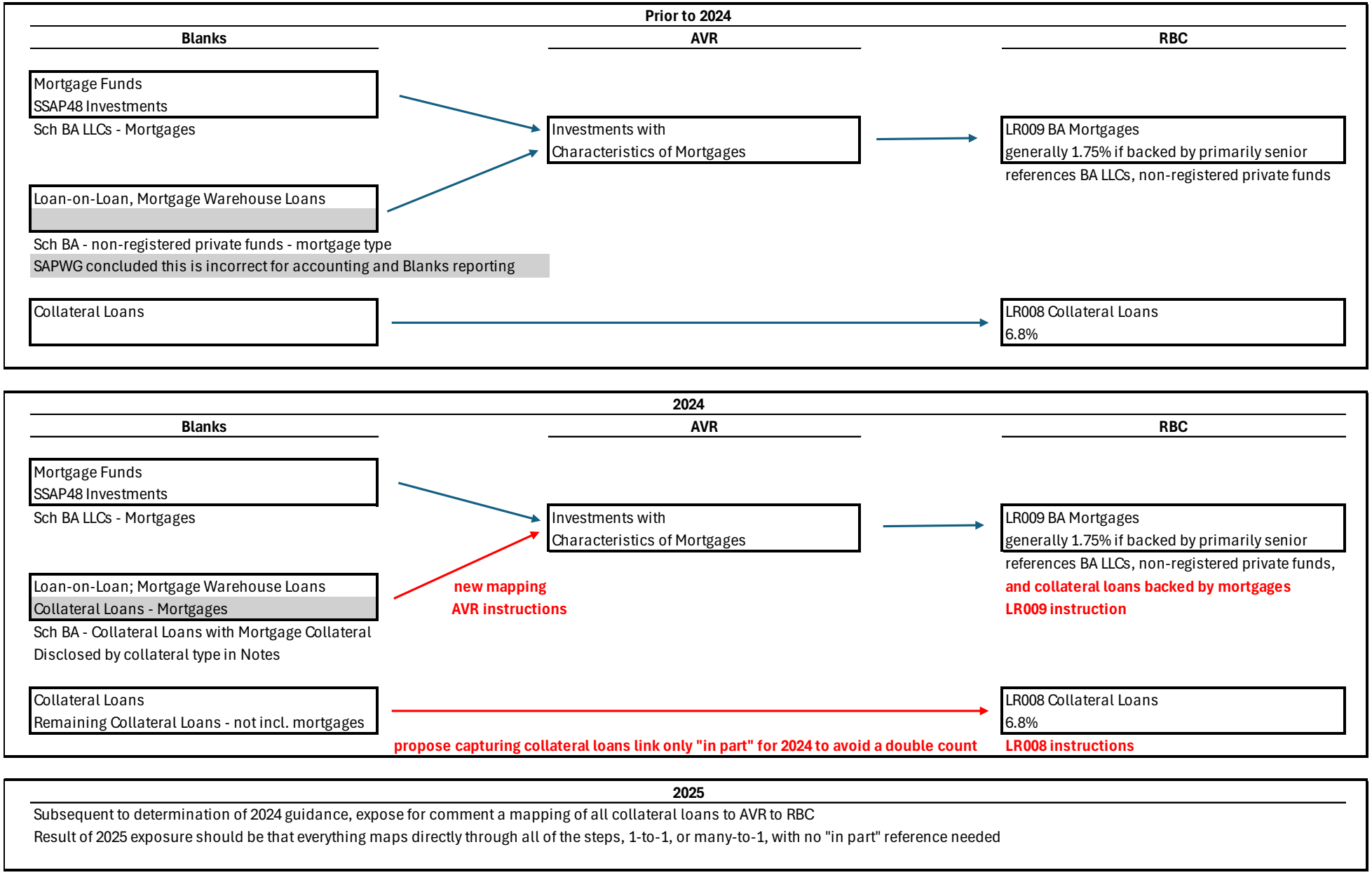
1- Overview of Proposal

2- Note on AVR mapping proposal supported by SAPWG

3- Review of proposed Life RBC instruction changes

Note that this is designed to solve 2024 reporting and capital with no disruption on the transition year. If a more comprehensive set of changes is adopted in 2025, we would expect those changes would supercede this fix. In other words, the focus of this proposal is to maintain current capital treatment this year, even as accounting changes occur.

Invested Assets Which are Captured for Capital as BA Mortgages



Blanks Proposal for 2024 Reporting:

Annual Statement Instructions - AVR

Blanks proposal ensures that Collateral Loans backed by Mortgages map the AVR section which categorizes those investments in the appropriate buckets for RBC.

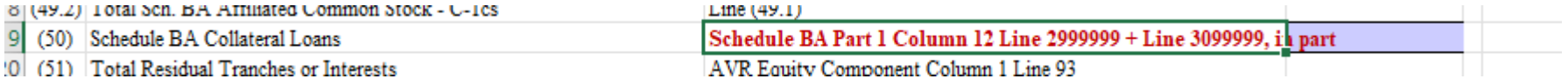
Life RBC Proposal:

To maintain capital treatment of loan-on-loan investments as BA mortgages, in a year when their accounting presentation navigates to Collateral Loans back by Mortgages, the following changes are proposed:

LR008

Line (50)

Exclude: any collateral loan amounts which have been included elsewhere in the RBC formula, e.g, BA mortgages.



8	(49.2)	Total Scn. BA Affiliated Common Stock - C-1cs	Line (49.1)
9	(50)	Schedule BA Collateral Loans	Schedule BA Part 1 Column 12 Line 2999999 + Line 3099999, in part
10	(51)	Total Residual Tranches or Interests	AVR Equity Component Column 1 Line 93

LR009

Reference to tie out should be adjusted to include new category: Line (20) should equal Schedule BA Part 1, Column 12, Lines 1199999,12999999, 23999999 ~~and~~ 24999999 **and collateral loans backed by mortgages (footnote 5T, line 7).**

The minor changes listed above to LR008, and LR009, will be provided in an RBC Proposal Form, and would result in BA mortgages maintaining their capital charge in 2024, even as reporting for those investments changes to Collateral Loans backed by Mortgages.

OTHER LONG-TERM ASSETS

		Annual Statement Source	(1) Book / Adjusted Carrying Value	(2) Unrated Items ‡	(3) RBC Subtotal †	(4) Factor	(5) RBC Requirement
	Schedule BA - Unaffiliated Common Stock						
(42)	Schedule BA Unaffiliated Common Stock-Public	AVR Equity Component Column 1 Line 65				X § =	
(43)	Schedule BA Unaffiliated Common Stock-Private	AVR Equity Component Column 1 Line 66				X 0.3000 =	
(44)	Total Schedule BA Unaffiliated Common Stock (pre-MODCO/Funds Withheld)	Line (42) + (43)					
(45)	Reduction in RBC for MODCO/Funds Withheld Reinsurance Ceded Agreements	Company Records (enter a pre-tax amount)					
(46)	Increase in RBC for MODCO/Funds Withheld Reinsurance Assumed Agreements	Company Records (enter a pre-tax amount)					
(47)	Total Schedule BA Unaffiliated Common Stock (including MODCO/Funds Withheld.)	Lines (44) - (45) + (46)					
	Schedule BA - All Other						
(48.1)	BA Affiliated Common Stock - Life with AVR	AVR Equity Component Column 1 Line 67					
(48.2)	BA Affiliated Common Stock - Certain Other	AVR Equity Component Column 1 Line 68					
(48.3)	Total Schedule BA Affiliated Common Stock - C-1o	Line (48.1) + (48.2)				X 0.3000 =	
(49.1)	BA Affiliated Common Stock - All Other	AVR Equity Component Column 1 Line 69					
(49.2)	Total Sch. BA Affiliated Common Stock - C-1cs	Line (49.1)				X 0.3000 =	
(50)	Schedule BA Collateral Loans	**Schedule BA Part 1 Column 12 Line 2999999 + Line 3099999, in part**				X 0.0680 =	
(51)	Total Residual Tranches or Interests	AVR Equity Component Column 1 Line 93				X 0.3000 =	
(52.1)	NAIC 01 Working Capital Finance Notes	AVR Equity Component Column 1 Line 94				X 0.0050 =	
(52.2)	NAIC 02 Working Capital Finance Notes	AVR Equity Component Column 1 Line 95				X 0.0163 =	
(52.3)	Total Admitted Working Capital Finance Notes	Line (52.1) + (52.2)					
(53.1)	Other Schedule BA Assets	AVR Equity Component Column 1 Line 96					
(53.2)	Less NAIC 2 thru 6 Rated/Designated Surplus Notes and Capital Notes	Column (1) Lines (23) through (27) + Column (1) Lines (33) through (37)					
(53.3)	Net Other Schedule BA Assets	Line (53.1) less (53.2)				X 0.3000 =	
(54)	Total Schedule BA Assets C-1o (pre-MODCO/Funds Withheld)	Lines (11) + (21) + (31) + (41) + (48.3) + (50)+ (52.3) + (53.3)					
(55)	Reduction in RBC for MODCO/Funds Withheld Reinsurance Ceded Agreements	Company Records (enter a pre-tax amount)					
(56)	Increase in RBC for MODCO/Funds Withheld Reinsurance Assumed Agreements	Company Records (enter a pre-tax amount)					
(57)	Total Schedule BA Assets C-1o (including MODCO/Funds Withheld.)	Lines (54) - (55) + (56)					
(58)	Total Schedule BA Assets Excluding Mortgages and Real Estate	Line (47) + (49.2) + (51) + (57)					

† Fixed income instruments and surplus notes designated by the NAIC Capital Markets and Investment Analysis Office or considered exempt from filing as specified in the *Purposes and Procedures Manual of the NAIC Investment Analysis Office* should be reported in Column (3).

‡ Column (2) is calculated as Column (1) less Column (3) for Lines (1) through (17). Column (2) equals Column (3) - Column (1) for Line (53.3).

§ The factor for Schedule BA publicly traded common stock should equal 30 percent adjusted up or down by the weighted average beta for the Schedule BA publicly traded common stock portfolio subject to a minimum of 22.5 percent and a maximum of 45 percent in the same manner that the similar 15.8 percent factor for Schedule BA publicly traded common stock in the Asset Valuation Reserve (AVR) calculation is adjusted up or down. The rules for calculating the beta adjustment are set forth in the AVR section of the annual statement instructions.

Denotes items that must be manually entered on the filing software.

From: Clark, Kevin <kevin.clark@iid.iowa.gov>
Sent: Wednesday, May 1, 2024 9:34 AM
To: Yeung, Eva <EYeung@naic.org>; Botsko, Thomas <thomas.botsko@insurance.ohio.gov>; Barlow, Philip <philip.barlow@dc.gov>
Cc: Gann, Julie <JGann@naic.org>; Mears, Carrie <carrie.mears@iid.iowa.gov>
Subject: Comment on Collateral Loan Exposure(s)

Hi Eva / Tom / Philip -

I wanted to provide some comments from Iowa around the RBC treatment of collateral loans which is the subject of several referrals / proposals as listed below:

- CATF Collateral Loan Memorandum Exposure - Comments due May 1
- Life RBC Exposure - 2024-15-L - Comments due May 22
- Life RBC Collateral Loan Reporting Change Referral from SAPWG to LRBC dated 2/29/24 and received at the national meeting on 3/17/24

Iowa supports the ACLI proposal to allow look-through treatment for collateral loans secured by mortgages for 2024 (2024-15-L). This concept is consistent with the look-through treatment of funds holding mortgages which has been in place for a number of years, works well and more accurately captures the risk attributes of the loans being held.

As noted in the SAPWG referral, beginning in 2025, reporting lines for collateral loans will be broken out by type of underlying collateral. This will allow the information needed to apply the ACLI proposed look-through treatment to pull directly from the investment schedules, rather than the proposed "work around" that will be needed in 2024. In addition to supporting the ACLI proposal for 2024, Iowa supports making the ACLI proposal permanent using the newly available reporting lines in 2025.

In addition to mortgage loans, the more granular reporting lines will also allow look-through treatment to be applied for other types of collateral that have an existing RBC framework. This again will allow the capital factors to more accurately reflect the risk characteristics of these investments. For example, Real Estate and Equity Investments also have specific RBC frameworks that would facilitate look-through treatment. Iowa supports extending look-through treatment to those types of collateral loans as well. This would not require a significant undertaking of the Working Group as it would leverage existing RBC mechanisms, but would result in a meaningful improvement to the alignment of risk and capital for collateral loans.

We appreciate your consideration,

- Kevin Clark and Carrie Mears - Iowa Insurance DIvision

--
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Capital Adequacy (E) Task Force

RBC Proposal Form

☐ Capital Adequacy (E) Task Force ☐ Health RBC (E) Working Group ☒ Life RBC (E) Working Group
☐ Catastrophe Risk (E) Subgroup ☐ P/C RBC (E) Working Group ☐ Longevity Risk (A/E) Subgroup
☐ Variable Annuities Capital. & Reserve (E/A) Subgroup ☐ Economic Scenarios (E/A) Subgroup ☐ RBC Investment Risk & Evaluation (E) Working Group

DATE:	**4/25/2024**
CONTACT PERSON:	**Dave Fleming**
TELEPHONE:	**816-783-8121**
EMAIL ADDRESS:	**dfleming@naic.org**
ON BEHALF OF:	**Life Risk-Based Capital (E) Working Group**
NAME:	**Philip Barlow, Chair**
TITLE:	**Associate Commissioner of Insurance**
AFFILIATION:	**District of Columbia**
ADDRESS:	**1050 First Street, NE Suite 801**
	Washington, DC 20002

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Agenda Item # 2024-17-L
Year 2024

DISPOSITION

ADOPTED:
☐ TASK FORCE (TF) _____
☐ WORKING GROUP (WG) _____
☐ SUBGROUP (SG) _____

EXPOSED:
☐ TASK FORCE (TF) _____
☒ WORKING GROUP (WG) 4/25/2024
☐ SUBGROUP (SG) _____

REJECTED:
☐ TF ☐ WG ☐ SG _____

OTHER:
☐ DEFERRED TO _____
☐ REFERRED TO OTHER NAIC GROUP
☐ (SPECIFY) _____

IDENTIFICATION OF SOURCE AND FORM(S)/INSTRUCTIONS TO BE CHANGED

☐ Health RBC Blanks ☐ Property/Casualty RBC Blanks ☒ Life and Fraternal RBC Blanks
☐ Health RBC Instructions ☐ Property/Casualty RBC Instructions ☐ Life and Fraternal RBC Instructions
☐ Health RBC Formula ☐ Property/Casualty RBC Formula ☐ Life and Fraternal RBC Formula
☐ OTHER _____

DESCRIPTION/REASON OR JUSTIFICATION OF CHANGE(S)

This proposal adds a factor for the line added to LR009 to specifically address line 44 of the Asset Valuation Reserve (AVR) Equity Component as part of proposal 2024-05-L. This AVR line was not included in the LR009 changes made with the mortgage methodology change in 2013.

Additional Staff Comments:

** **This section must be completed on all forms.** **Revised 2-2023**

SCHEDULE BA MORTGAGES

		Annual Statement Source	(1) Book / Adjusted Carrying Value	(2) Involuntary Reserve Adjustment †	(3) RBC Subtotal	(4) Cumulative Writedowns ‡		(5) Average Factor		(6) RBC Requirement
	In Good Standing									
(1)	Insured or Guaranteed	AVR Equity Component Column 1 Line 43 + Line 45				XXX	X	0.0014	=	
(2)	**Affiliated Mortgages – Residential – All Other**	AVR Equity Component Column 1 Line 44				XXX	X	**0.0068**	=	
(3)	Unaffiliated Mortgages with Covenants	AVR Equity Component Column 1 Line 57				XXX	X	*	=	
(4)	Unaffiliated Mortgages - Defeased with Government Securities	AVR Equity Component Column 1 Line 58				XXX	X	0.0090	=	
(5)	Unaffiliated Mortgages - Primarily Senior	AVR Equity Component Column 1 Line 59				XXX	X	0.0175	=	
(6)	Unaffiliated Mortgages - All Other	AVR Equity Component Column 1 Line 60				XXX	X	0.0300	=	
(7)	Affiliated Mortgages - Category CM1	AVR Equity Component Column 1 Line 38				XXX	X	0.0090	=	
(8)	Affiliated Mortgages - Category CM2	AVR Equity Component Column 1 Line 39				XXX	X	0.0175	=	
(9)	Affiliated Mortgages - Category CM3	AVR Equity Component Column 1 Line 40				XXX	X	0.0300	=	
(10)	Affiliated Mortgages - Category CM4	AVR Equity Component Column 1 Line 41				XXX	X	0.0500	=	
(11)	Affiliated Mortgages - Category CM5	AVR Equity Component Column 1 Line 42				XXX	X	0.0750	=	
(12)	Total In Good Standing	Sum of Lines (1) through (11)								
	90 Days Overdue, Not in Process of Foreclosure									
(13)	Insured or Guaranteed 90 Days Overdue	AVR Equity Component Column 1 Line 47 + Line 49				XXX	X	0.0027	=	
(14)	All Other 90 Days Overdue - Unaffiliated	AVR Equity Component Column 1 Line 61				XXX	X	0.1100	=	
(15)	All Other 90 Days Overdue - Affiliated	AVR Equity Component Column 1 Line 48 + Line 50				XXX	X	0.1100	=	
(16)	Total 90 Days Overdue, Not in Process of Foreclosure	Lines (13) + (14) + (15)								
	In Process of Foreclosure									
(17)	Insured or Guaranteed in Process of Foreclosure	AVR Equity Component Column 1 Line 52 + Line 54				XXX	X	0.0054	=	
(18)	All Other in Process of Foreclosure - Unaffiliated	AVR Equity Component Column 1 Line 62				XXX	X	0.1300	=	
(19)	All Other in Process of Foreclosure - Affiliated	AVR Equity Component Column 1 Line 53 + Line 55				XXX	X	0.1300	=	
(20)	Total In Process of Foreclosure	Lines (17) + (18) + (19)								
(21)	Total Schedule BA Mortgages (pre-MODCO/Funds Withheld)	Lines (12) + (16) + (20)								
(22)	Reduction in RBC for MODCO/Funds Withheld Reinsurance Ceded Agreements	Company Records (enter a pre-tax amount)								
(23)	Increase in RBC for MODCO/Funds Withheld Reinsurance Assumed Agreements	Company Records (enter a pre-tax amount)								
(24)	Total Schedule BA Mortgages (including MODCO/Funds Withheld.)	Lines (21) - (22) + (23)								

† Involuntary reserves are reserves that are held as an offset to a particular asset that is clearly a troubled asset and are included on Page 3 Line 25 of the Annual Statement.

‡ Cumulative writedowns include the total amount of writedowns, non-admissions, and involuntary reserves that have been taken or established with respect to a particular mortgage.

* This will be calculated as Column (6) divided by Column (3).

Denotes items that must be manually entered on the filing software.

ACLI
Financial Security for Life

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February 26, 2024

Philip Barlow
Chair, NAIC Life Risk-Based Capital (E) Working Group (LRBC)

Re: LRBC Exposure of the 2024-05-L BA Mortgage Proposal

Dear Chair Barlow:

The American Council of Council of Life Insurers (ACLI) appreciates the opportunity to submit comments on the recent LRBC exposure of BA Mortgage proposal 2024-05-L, which aims to add a new line for mortgages to LR009 specifically to address line 44 of the Asset Valuation Reserve (AVR) Equity Component.

ACLI supports the addition of a new line allowing Schedule BA "In Good Standing Affiliated Residential Mortgages All Other" to be captured in RBC calculations. However, to make these proposed changes as clear and effective as possible, we do have some recommendations that we would like to see incorporated prior to adoption and later implementation which we have outlined below.

First, we suggest that the new line be named to align with AVR Equity Component's line 44, "Affiliated Mortgages – Residential – All Other". We note that the proposal does not include the addition of a proposed RBC factor for this line, but we recommend that an RBC factor be inserted to ensure that mortgages set forth on this new line are treated in a consistent manner.

ACLI also recommends that a pre-tax factor of 0.68% to be applied to the statement value on the new LR009 line. This would be the same pre-tax factor that is applied to the directly held

residential mortgages on LR004 line 2. We believe that applying a pre-tax factor of 0.68% is appropriate for the following reasons:

- The AVR Annual Statement Instructions indicate that OIA (Other Invested Assets) reserves are calculated based on the essential nature of the underlying investments. The essential nature of the investments set forth on AVR Equity Component line 44 is Residential Mortgages, which is the same as AVR Default Component line 41.
- The same AVR factors are presently applied to Residential Mortgages that are listed on AVR Default Component line 41 and AVR Equity Component line 44.
- There is already correspondence between RBC factors for affiliated mortgages on LR009 and factors on LR004.

Finally, while it is possible that the instructions already outline the reasoning for their exclusion, we recommend that regulators investigate whether the Schedule BA page would still be missing (e.g., whether AVR line 46 should be added to RBC line 15 and AVR Line 51 should be added to RBC line 19).

Thank you once again for the consideration of our comments and we look forward to additional discussion on this topic at a future LRBC session.

Sincerely,

cc: Dave Fleming, NAIC

LRBC Correlation

Life Risk-Based Capital discussion

Paul Navratil, MAAA, FSA

American Academy of Actuaries

Agenda

The agenda for this discussion is to:

1. Introduce covariance within LRBC as topic for possible review
2. Align on guiding principles
3. Share preliminary thoughts on potential correlation structure
4. Outline data elements that could inform a recommendation
5. Gather feedback on next steps

Background

- The Life Risk Based Capital Working Group has reviewed and made updates to many areas of the LRBC formula in recent years to maintain the effectiveness of LRBC as a regulatory tool to identify potentially weakly capitalized insurers
- The calculation of each individual risk factor within LRBC has been reviewed and/or updated since the introduction of formula in the 1990s
- A holistic review of correlation of risks within the formula has not yet been undertaken
  - In 2001, the C1-cs component was created with separate covariance from C-1o
  - In 2021, C-2b longevity risk was introduced, including correlation with mortality C-2a
- Except for longevity and mortality risk, all correlations within LRBC are either 0% or 100%
- The scope of this discussion is initially focused on correlation between C-risks within LRBC; an extension of this effort could also consider correlation within individual C-risks (such as within C-1o)

Rationale for Review of Covariance Within LRBC

Due for regular maintenance review

- Every C-factor within LRBC has been individually reviewed in recent years; covariance between C-factors is due for a routine review to maintain the effectiveness of LRBC

Current approach is simplistic

- Except for C-2b longevity, which was recently added, every correlation within LRBC is either 0% or 100%; a more refined approach could be considered that improves effectiveness without adding undue complexity

Impact to effectiveness of LRBC could be material

- Changes to covariance could improve the effectiveness of RBC in differentiating between companies with concentration or diversification of risks

Guiding Principles

Consistent measure of aggregate company risk

- An unbiased view of risk aggregation supports the regulatory objective to identify potentially weakly capitalized companies and provides consistent differentiation between companies with concentration or diversification of risks

Consistent with targeted statistical safety level of RBC

- Target a correlation approach that is consistent with a CAL RBC that is approximately 95th percentile over a multiyear horizon
- Recognize that correlations may not be linear across all outcomes

Practical to implement

- Avoid false precision in both methodology and numerical values: maintain simple linear correlation approach with appropriate rounding of correlation factors

Potential Structure

Linear correlation between major risk categories expressed as a correlation matrix

	Credit C-1o, C-3b	Equity Market C-1cs, C-3c	Interest Rate C-3a	Insurance C-2a, C-2b	Business C-4a, C-4b
Credit	1				
Equity Market	TBD %	1			
Interest Rate	TBD %	TBD %	1		
Insurance	TBD %	TBD %	TBD %	1	
Business	TBD %	TBD %	TBD %	TBD %	1

Nested correlation used to combine C risks that fall within each major risk category

- C-2 Insurance Risk today is the result of nested correlation matrix between C-2a mortality and C-2b longevity

	Mortality C-2a	Longevity C-2b
Mortality C-2a	1	-25%
Longevity C-2b	-25%	1

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Calibration Approach

Historical data would inform calibration between market risks

- 40+ years of historical data is readily available on credit losses, equity markets, and interest rates
- Expect to consider multiple methods to proxy statutory losses using available market data over different time horizons
- Historical data could also be used to consider correlations between asset classes within C-1o (real estate, mortgages, credit)

Lack of historical data on insurance and business risk would require greater reliance on theory and judgment

- Emerging experience from COVID-19 may provide a data point to consider on insurance risk
- Challenging to develop these correlations based entirely on historical data

Existing Covariance Within LRBC

RBC after Covariance Before Operational Risk =

C0 + C4a + Square Root of [(C1o + C3a)^2 + (C-1cs + C-3c)^2 + (C2)^2 + (C3b)^2 + C4b)^2]

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Initial Observations

- 100% correlations are higher than in other regulatory frameworks
  - Credit and Interest Rate risks correlated at 100% compared to 50% for IAIS
- Many 0% correlations are lower than in other regulatory frameworks
  - Credit and Market at 0% compared to 25% for IAIS
  - Insurance with both Credit and Market at 0% compared to 25% for IAIS
- It is possible that some correlation factor changes would increase RBC while others would decrease RBC. The objective is to improve differentiation between companies with concentration vs. diversification of risks.

Next Steps

- Analysis of historical data
- Complete a correlation structure to include all existing C-factors
- Consider structure that could reflect correlation within C-1o
- Develop preliminary correlation factors and rationale for discussion
- Assess potential impacts

Questions

- Paul Navratil, MAAA, FSA
  Chairperson, Life Capital Adequacy Committee

- Amanda Barry-Moilanen
  Life Policy Analyst
  American Academy of Actuaries
  barrymoilanen@actuary.org

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Non-Variable Annuity Principle-Based Reserving (PBR) Framework Update

Annuity Reserves & Capital Subcommittee

September 6, 2023

Academy Webinar

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Agenda

- **Intro and General Overview**
  - Chris Conrad, MAAA, FSA, Chairperson, Annuity Reserves & Capital Subcommittee
- **C-3 Risk-Based Capital**
  - Link Richardson, MAAA, FSA, CERA - Member, Economic Scenario Subcommittee and Annuity Reserves & Capital Subcommittee
- **Updated Draft Framework**
  - Andrew Jenkins, MAAA, FSA, Co-Vice Chairperson, Annuity Reserves & Capital Subcommittee
  - Bruce Friedland, MAAA, FSA, Co-Vice Chairperson, Annuity Reserves & Capital Subcommittee
- **Q&A**

Timeline

- **Timeline is tentative due to dependency on Generator of Economic Scenarios (GOES) Initiative**
- Fall 2023: Exposure of Standard Projection Amount; VM-31 Drafting Group Meetings and Exposure
- Early 2024: Discussion of Comments Received on Exposures; Field Test Prep
- Summer 2024: Field Test
- Fall 2024/Early 2025: Compile and Discuss Results of Field Test; Resolve Outstanding Items from Field Test
- Early 2025: Life Actuarial (A) Task Force (LATF) Discussion of Comments
- Mid 2025: LATF, Life Insurance and Annuities (A) Committee and Exec and Plenary Adoption
- **Target 1/1/26 Effective Date**

Requirements for Principle-Based Reserves for Non-Variable Annuities—*An Overview of the Current Draft*

Annuity Reserves & Capital Subcommittee

Academy **Webinar**

Scope and Effective Date

Products In-Scope

Account Value Based Annuities

- Deferred Annuities (SPDA & FPDA)
- Multi-Year Guarantee Annuities (MYGA)
- Fixed Indexed Annuities (FIA)
- Two-tiered Annuities
- Guarantees/Benefits/Riders on Contracts in scope

Payout Annuities

- Single Premium Immediate Annuities (SPIA)
- Deferred Income Annuities (DIA)
- Term certain Payout Annuities
- Pension Risk Transfer Annuities (PRT)
- Structured Settlement Contracts (SSC)
- Longevity Reinsurance

Products Out-of-Scope

- Guaranteed Investment Contracts (GICs)
- Synthetic GICs
- Stable Value Contracts
- Funding Agreements
- Contracts or benefits that are subject to VM-21 (such as variable annuities and RILAs)

Contract Application

- New Business: 3yr optional implementation period
- Valuation dates on or after January 1, 2026?

Reserve Methodology

A. Aggregate Reserve: The sum of the Stochastic Reserve (SR), the Deterministic Reserve (DR) for contracts utilizing the Deterministic Certification Option, plus the reserve for contracts valued under VM-A and VM-C that satisfy the Exclusion Test and do not elect to calculate the SR.

B. Impact of Reinsurance: Components of the Aggregate Reserve shall be determined net of any reinsurance cash flows meeting statutory requirements to qualify as reinsurance. A pre-reinsurance reserve will also need to be calculated.

C. The Standard Projection Amount (SPA): The Academy could support an SPA disclosure.

D. The SR :

1. The SR shall be determined based on asset and liability projections over a broad range of stochastically generated projection scenarios using prudent estimate assumptions.
2. The SR amount for any group of contracts shall be determined as CTE70 of the scenario reserves.
3. The reserve may be determined in aggregate across various groups of contracts within each Reserving Category as a single model segment.
    a. Groups of contracts within different Reserving Categories may not be aggregated together in determining the SR.
    b. The Reserving Categories are classified as: i. Payout Annuities ii. Accumulation Annuities, and iii. Longevity Reinsurance

Reserve Methodology (cont.)

E. **Stochastic Exclusion Test:** Passing contracts may be valued using the requirements of VM-A and VM-C. Contracts with significantly different risk profiles should not be combined when performing the exclusion testing.

F. **Allocation of the Aggregate Reserve to Contracts:** The allocation methodology is described in Section 13 and is based on an Actuarial PV method. The approach uses a "CSV plus" methodology where any additional amounts would be added to a contract's existing cash surrender value (CSV).

G. **Prudent Estimate Assumptions:** The company shall establish prudent estimate assumptions for each risk factor. Relevant experience shall be reviewed annually and assumptions updated as needed.

H. **Approximations, Simplifications, and Modeling Efficiency Techniques**: "proposed language" … A company may use simplifications, approximations, and modeling efficiency techniques to calculate the SR and/or the additional standard projection amount required by this section if the company can demonstrate that the use of such techniques does not understate the reserve by a material amount, and the expected value of the reserve calculated using simplifications, approximations, and modeling efficiency techniques is not less than the expected value of the reserve calculated that does not use them.

C-3 Methodology Considerations and Suggestions

Annuity Reserves & Capital Subcommittee

Academy Webinar

C-3 Methodology Considerations and Suggestions

Align C-3 Approaches between Phase 1 and Phase 2

- Existing differences in C-3 scenarios and metrics are a result of staggered implementation of C-3 phases
- Intent of 2015 C-3 Field Test was to converge scenarios and metrics. Convergence was deferred pending completion of VM-21
- Both Phase 1 and Phase 2 scenarios have acknowledged shortcomings. Moving to updated, consistent scenarios would improve assessment of C-3 risks
- Moving to consistent levels of conservatism in assumptions would produce better evaluations of aggregate legal entity risk
- Successive slides will describe differences and make suggestions for framework convergence. The intent of this deck is to suggest alternatives that would be practical to test in the next round of ESG field testing or in VM-22 field testing
- In general, the C-3 Phase 2 framework has been more recently reviewed and extensively tested. Thus, it should be the primary choice for convergent methodology, except as needed to accommodate products and models from the current or expanded Phase 1

Key differences between C-3 Phase 1 and Phase 2 frameworks

1) **Scope** – Fixed Annuities versus Variable Annuities
2) **Scenarios** – fixed 6.55% Median Reversion Point (MRP), versus much lower formulaic MRP
3) Weighted 92nd through 98th percentile **metric**, versus 25% of (CTE 98 minus reserve)
4) Cash Flow Testing (CFT) **models** versus Principle-Based Reserve (PBR) models
5) Expected **default costs** versus prescribed CTE 70 default costs. No Asset Valuation Reserve (AVR) in either Phase
6) CFT Moderately Adverse **assumptions** versus PBR Prudent Estimate assumptions
7) Formulaic **interim reserves** versus Working Reserve, originally Cash Surrender Value, now zero
8) One-year Treasury **discounting** versus Net Asset Earned Rate (NAER) or Direct Iteration
9) Factor-based **floor** versus floor on reserves but not on RBC

Scope Considerations

Include all products with significant Asset-Liability Management (ALM) risk, and possibly all material products

- Phase 1 currently applies to all Non-Indexed Fixed Annuities, including group and individual, and deferred and payout. VM-22 is being expanded to include Fixed Indexed Annuities. Additional considerations around prospective application of VM-22 will be discussed in the Models section
- Phase 2 includes all Variable Annuities, both new and existing business
- Conceptually, it would make sense to require C-3 testing for all products that fail the Stochastic Exclusion Test (SET) for reserves. Allowing and even encouraging the inclusion of products that pass an SET would be consistent with the RBC objective of developing aggregate legal entity risk measures and would also be consistent with the scope of Cash Flow Testing (CFT). In light of the deferral of the C-3 Phase 3 recommendation for Life products, extending C-3 testing to include all Life products may need to be a future effort
- Phase 1 does include Single Premium Life, presumably due to concerns about ALM risk. This condition could be retained, pending future work on expanding the scope to include all products

Scenario and Metric Considerations

Align Scenarios Across Phases

- Phase 1 scenarios have a high, fixed Median Reversion Point (MRP) and thus are light on low interest rate scenarios
- Phase 1 scenarios do not include equity returns
- Phase 2 scenarios have a formulaic MRP that is heavily weighted toward very recent rates. In conjunction with the model structure and parameters, overall scenario volatility is too low and does not cover a wide enough range of interest rates
- Updated stochastic scenarios will likely address all of these issues

Align Metrics

- The Weighted 92nd through 98th percentile metric of Phase 1 was found to produce very similar results to the then current CTE 90 metric of Phase 2, in the 2015 Field Test
- The newer 25% of (CTE 98 minus reserve) of Phase 2 was selected at least partly to ensure that hedging would be more consistently beneficial to C-3 requirements, versus the prior CTE 90 metric
- Updated interest rate scenarios may reasonably be expected to increase Phase 1 requirements. Moving to the 25% of (CTE 98 minus reserve) metric could help both to mitigate a scenario-based increase and encourage hedging

Model Considerations

Allow use of both CFT and PBR models

- Phase 1 uses CFT models, while Phase 2 uses PBR models
- Since PBR does not yet apply to products in C-3 Phase 1 testing, companies will generally not have PBR models for these products. Thus continuing the use of CFT models for Phase 1 products is a practical choice
- Prospective application of VM-22 updates will lead to the creation of PBR models for new business but will not require the creation of PBR models for existing business
- It is likely that very few PBR models have interim reserve calculation capabilities, especially since Working Reserves are now set to zero. This topic will be discussed further on the Interim Reserve slide
- Some adjustments to assumptions may be necessary to improve alignment of the levels of conservatism in PBR and CFT models. Possible adjustments will be discussed on upcoming slides

Default Cost, AVR and C-1 RBC Considerations

Align Default Cost Treatment Across Phases

- Phase 1 uses Expected Default Costs. The exclusion of the AVR was considered to add appropriate conservatism, as AVR was commonly used in CFT when Phase 1 originated. AVR is now commonly excluded from CFT, in light of the RBC change to exclude from Total Adjusted Capital (TAC) any AVR used in CFT
- Phase 2 uses PBR CTE 70 default costs and also excludes AVR
- Recent C-1 RBC updates essentially assume that reserves cover halfway between Expected and CTE 70 Default Costs. Thus C-3 Phase 2 is double-counting the portion of CTE 70 Default Costs that is covered in C-1 RBC
- Changing C-3 Phase 1 to use CTE 70 Default Costs would increase the double-counting. Allowing the use of assets backing allocated AVR, in C-3 testing, could mitigate this double-counting until C-1 RBC charges are updated to assume that reserves or C-3 RBC requirements cover CTE 70 Default Costs
- In summary, the suggestion is to use CTE 70 Default Costs in all C-3 testing, and to include assets backing the AVR until such time as C-1 RBC is updated
- Double-counting of RBC on general account equity-oriented assets included in C-3 testing could be addressed in a similar manner, by including assets in C-3 testing to back the allocated AVR for the relevant equity-oriented assets

Moderately Adverse and Prudent Estimate Assumptions

Align Level of Conservatism Across Phases

- Phase 1 uses CFT models, which use moderately adverse assumptions. ASOP No. 22 defines Moderately Adverse Conditions as "Conditions that include one or more unfavorable, but not extreme, events that have a reasonable probability of occurring during the testing period." There is no explicit level of conservatism defined, but moderately adverse is often viewed as about one standard deviation, or about an 84th percentile for a Normal distribution
- Phase 2 uses PBR Prudent Estimate assumptions. Where explicitly defined, these assumptions are set at a CTE 70 level of conservatism. This is about an 88th percentile for a Normal distribution and is a still higher percentile for risk elements with skewed distributions, such as default costs
- Since default costs would use CTE 70 assumptions and equity returns would be based on stochastic scenarios, a required statement that other Phase 1 assumptions are at or above an 84th percentile level of conservatism would likely be adequate for CFT models to be appropriate for updated C-3 Phase 1 purposes

Discounting

Recommend Phase 2 approach

- Phase 1 uses one-year Treasury rate discounting. Reinvestment strategies are typically longer durations and lower quality, both of which tend to increase yields. Thus Phase 1 present values are likely to larger than the amount of additional assets needed to eliminate a given deficiency
- Phase 2 allows discounting at Net Asset Earned Rates (NAERs), 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 specifically solves for the amount of additional assets needed to eliminate a deficiency. However, Direct Iteration complicates the determination of present values for projection points other than the one with the largest deficiency.
- Suggestion is to use Phase 2 discounting rules and develop present value determinations for Direct Iteration

Floors

Possible future enhancements

- Phase 1 has a floor based on an assumed duration mismatch and an assumed interest rate change. Companies can qualify for half of the factor-based floor with adequate C-3 testing results
- Phase 2 has a Standard Projection Amount floor on reserves. C-3 requirements can be zero with adequate testing results
- Should an RBC floor be developed for Phase 2, or should the existing floor be eliminated for Phase 1?

Next Steps

- Discuss suggestions and develop them into recommendations for desired topics
- Create field test instructions consistent with finalized recommendations, to be used in the upcoming fixed annuity reserve and capital field testing currently scheduled for 2024

Appendices

- Practical Difficulties for PBR Interim Reserves
- Areas for Future Research and Enhancements

Interim Reserves

Practical difficulties exist

- Many companies do not have functionality in their PBR models to calculate interim reserves
- VM-22 updates may include consideration of this topic
- Most companies run 1,000 scenarios for VM-21. Producing interim reserves will likely require significant reductions in numbers of scenarios, especially for the "inner loop" where interim reserves would be calculated, but possibly also for the "outer loop" in which valuation date reserves are determined
- The time horizon for C-3 RBC testing is significantly longer than for other RBC elements, often 50 years or more. Reducing this to perhaps 10 years, with sound reserve estimations, could help to facilitate the production of interim reserves and thus interim surplus positions
- The long time horizon of C-3 testing creates an implicitly higher level of conservatism over shorter time horizons. The lack of interim reserves in Phase 2 may tend to offset some of this excess conservatism
- It may be necessary or desirable to continue the separation of C-3 Phases until progress is made on interim reserve estimations. Models that produce interim reserves could be included in Phase 1, while models without interim reserves could be in Phase 2. A 10 year framework could be tested now for C-3 Phase 1 and in the future for C-3 Phase 2

Areas for Future Research and Enhancements

Possible topics:

- Correlation treatment
- Interim reserves for PBR products
- Practical techniques to produce sound estimates of stochastic results for large numbers of scenarios
- Expansion to include Life products

Questions?

Please enter your question(s) in the
"Ask A Question" box on your screen.

Thank You

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Spring 2024 ESG Field Testing Recommendations – addendum to "C-3 Methodology Considerations and Suggestions" section of 9/6/2023 Webinar material

VM-21 and C-3 Phase 2

1) Run current framework with current scenarios. Along with reserves, evaluate C-3 requirement at 25% of (CTE 95 minus reserve) as well as the current 25% of (CTE 98 minus reserve).

2) Run current framework with proposed scenarios. Evaluate reserves, current C-3, and C-3 using CTE 98 in place of CTE 95.

3) Evaluate double-counting of C-1 charges. Run using the average of Expected and CTE 70 default costs for bonds, and compare results to those using full CTE 70 default costs.

C-3 Phase 1

1) Run current framework with full 200 scenarios in addition to 50 scenario subset. Compare current metric to 50 scenario result.

2) Run current framework with 200 scenarios from AIRG. Evaluate current metric, 25 % of (CTE 98 minus reserve), and 25% of (CTE 95 minus reserve).

3) Run 200 proposed **scenarios**.
    a. Evaluate the same 3 **metrics** as Step 2, for each sub-step if feasible.
    b. If feasible, shift to your choice of Net Asset Earned Rate (NAER) or Direct Iteration **discounting**.
    c. Run with CTE 70 **default costs**, and with the average of Expected and CTE 70 default costs. Compare results to each other and to those using Expected default costs. If your Expected default costs are substantially different than NAIC Expected default costs, you may wish to compare results for the two sets of Expected costs.
    d. If necessary, adjust assumptions other than defaults to be reasonably consistent with PBR CTE 70 level of conservatism.
    e. Evaluate metrics for **10 year projection horizon**.
    f. If feasible, evaluate metrics for your current **full horizon with "working reserve" equal zero**.

4) If feasible, run 1000 scenarios for at least one of the Step 3 variations, to help evaluate the suitability of the 200 scenario subset.