[ ] Longevity Risk (A/E) Subgroup

	DATE: 4/22/21	**FOR NAIC USE ONLY**
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DESCRIPTION OF CHANGE(S)

This proposal incorporates bond factors proposed by the American Council of Life Insurers (ACLI) which are based on the work of Moody's Analytics for the expanded presentation of bond designation categories in the annual statement and risk-based capital (RBC) schedules.

REASON OR JUSTIFICATION FOR CHANGE **

The expanded presentation of bonds is a result of the work of the Investment Risk-Based Capital (E) Working Groupsic th7CID 41 (c)61.3

 ] Operational Risk (E) Subgroup

A) Subgroup [ ] P/C RBC (E) Working Group

	Short Term Bonds						
(9)	Exempt Obligations	AVR Default Component Column 1 Line 18	X	0.00000	=		
(10.1)	NAIC Designation Category 1.A	AVR Default Component Column 1 Line 19.1	X	0	=	5	8
(10.2)	NAIC Designation Category 1.B	AVR Default Component Column 1 Line 19.2	X	0	=	5	8

S E T

	(1) Asset Type / Issuer Name:	(2) Book / Adjusted Carrying Value	(3) Factor	(4) Additional RBC	(5) Adjustment/ Subsidiary RBC	(6) RBC Requirement
(1.1)	Bond NAIC Designation Category 2.A		X	=		
(1.2)	Bond NAIC Designation Category 2.B		X	=	5	
(1.3)	Bond NAIC Designation Category 2.C		X	=		
(2.1)	Bond NAIC Designation Category 3.A		X	=	5	1
(2.2)	Bond NAIC Designation Category 3.B		X	=	5	
(2.3)	Bond NAIC Designation Category 3.C		X	= 7		
(3.1)	Bond NAIC Designation Category 4.A		X	= 7	8	
(3.2)	Bond NAIC Designation Category 4.B		X	=	5	3
(3.3)	Bond NAIC Designation Category 4.C		X	=		
(4.1)	Bond NAIC Designation Category 5.A		X	=		
(4.2)	Bond NAIC Designation Category 5.B		X	=		
(4.3)	Bond NAIC Designation Category 5.C		X	=	5	
(5)	Bond NAIC 6		X 0.15000	=		
(6.1)	Bond NAIC Designation Category 1.A †		X	=	5	8
(6.2)	Bond NAIC Designation Category 1.B †		X	= 7	1	
(6.3)	Bond NAIC Designation Category 1.C †		X	=		
(6.4)	Bond NAIC Designation Category 1.6.n6.1 /MCID 443 >>BDC 0 g /TT0 1 Tf 39.558 0 Td		X	)Tj EMC /P <</MCID 541 >>B67d-1.385 Td [(()6.1 (4.3))]TJ EMC /P <</MCID 10.4 (.923 0 Td (0.00419)T4()6.1 (4.3))]TJ EMC154		

Company Name

Confidential when Completed

NAIC Company Code

H E D E D

As of:

Type of Hedged Asset	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
		Relationship												
	Description	Notional Amount												

BONDS
LR002

Basis of Factors

The bond factors are based on cash flow modeling using historically adjusted default rates for each bond category. For each of 2,000 trials, annual economic conditions were generated for the 10-year modeling period. Each bond of a 400-bond portfolio was annually tested for default (based on a "roll of the dice" where the default probability varies by designation category and that year's economic environment). When a default takes place, the actual loss considers the expected principal loss by category, the time until the sale actually occurs and the assumed tax consequences.

Actual surplus needs are reduced by incorporating anticipated annual contributions to the asset valuation reserve (AVR) as offsets to cash flow. Required surplus for a given trial is calculated as the amount of initial surplus funds needed such that the accumulation with interest of this initial amount and subsequent cash flows will not become negative at any point throughout the modeling period. The factors chosen for the proposed formula produce a level of surplus at least as much as in each of 92 percent of the trials by category and a 96 percent level for the entire bond portfolio.

The factor for NAIC 6 bonds recognizes that the book/adjusted carrying value of these bonds reflects a loss of value upon their being marked to market.

Specific Instructions for Application of the Formula

Lines (1) through (7)
The book/adjusted carrying value of all bonds and related fixed-income investments should be reported in Column (1). These bonds are split into seven different risk classifications. For long-term bonds, these classifications are found on Lines 1 through 7 of the Asset Valuation Reserve Default Component of the annual statement.

Line (8)
The total should equal long-term bonds and other fixed-income instruments reported on Page 2, Column 3, Line 1 plus Schedule D, Part 1, Column 6, Line 7099999 ~~minus Schedule D, Part 1A, Section 1, Column 7, Line 7.7 of the annual statement~~

Lines (9) through (15)
The book/adjusted carrying value of all bonds and related fixed-income investments should be reported in Column (1). These bonds are split into seven different risk classifications. For short-term bonds, these classifications are found on Lines 18 through 24 of the Asset Valuation Reserve Default Component of the annual statement.

22)
ration RBC Requirement for a particular property the Real Estate RBC Requirement for a particular property cannot exceed the book/adjusted carrying value
properties exceeding the book/adjusted carrying value must be adjusted down to the book/adjusted carrying

)-1.5,t (o)54.2(l64.2(u)54.2mon)54.2d 2(e mu)54.2ltiplitdn2n00nthLone41.5((7n)54.2()-1.5,t (o)54.2(l64.2(u)54.2mon)54.2d(2( )-4.5.a)23(e)]TJ -51.497 -1

(5) Description - Bond description found in Schedule D. For intermediate relationships, each bond must be listed (e.g. if the insurer acquires a credit default index that hedges 125 names equally, then the insurer must list all 125 names on the schedule.)

(6) CUSIP Identification - Bond unique identifier found in Schedule D.

(7) Book Adjusted Carrying Value - Value found on Schedule D.

(8) Overlap with Insurer's Bond Portfolio – The portion of Column (2) Notional Amount of the Hedging Instrument that hedges Column (7) Book Adjusted Carrying Value. This amount cannot exceed Column (7) Book Adjusted Carrying Value.

(9) Maturity Date - The date is found in Schedule D.

(10) NAIC Designation - Designation found in Schedule D necessary to determine correct RBC Factor for the Bonds.

(11) RBC Factor - Factor based on Column (10) NAIC Designation and NAIC C-1 RBC factors table.

(12) Gross RBC Charge – This is the C-1 RBC charge based on holdings at the end of the year. Calculation: Columns (7) Book Adjusted Carrying Value multiplied by (11) RBC Factor.

(13) RBC Credit for Hedging Instruments – If Column (8) Overlap with Insurer's Bond Portfolio is zero; the RBC Credit would be zero. The Hedging Instrument must have more than 1 year remaining to maturity in order to receive any RBC credit provided that the remaining time to maturity of the Hedged Asset - Bonds is greater than 1 year. If both the Hedging Instrument and the Hedged Asset - Bonds maturity dates are less than 1 year, the maximum RBC credit determined using the formula below shall be allowed provided that the maturity of the hedging instrument is equal to or later than the maturity of the bond. Calculation is Column (8) Overlap with Insurer's Bond Portfolio multiplied by RBC Credit as % of C-1 Asset Charge formula (formula listed below) multiplied by Column (11) RBC Factor.

$$\text{RBC Credit as \% of C1 Asset Charge} \quad \text{Min}\left\{1, \frac{\text{Time to Maturity of Hedging Instrument}}{\text{Time to Maturity of Bond}}\right\} \times 94\% \quad 10\% \quad 10\%$$

Time to Maturity of Hedging Instrument divided by Time to Maturity of Bond cannot exceed 1.

(14) Net RBC Charge – Column (12) Gross RBC Charge minus (13) RBC Credit for Hedging Instruments.

Common Stocks

(1) Description - Reported on Schedule DB.

(2) Notional Amount - Amount reported on Schedule DB.

(4) Description - Common Stock description found in Schedule D Part 2 Section 2. For intermediate relationships, each common stock must be listed (e. g. if the insurer acquires short futures contract that hedges the S&P 500, then the insurer must list all 500 stocks on the schedule).

(5) CUSIP Identification - Common Stock unique identifier found in Schedule D Part 2 Section 2.

(6) Book Adjusted Carrying Value - Value found on Schedule D Part 2 Section 2.

(7) Overlap with Insurer's Stock Portfolio – The portion of Column (2) Notional Amount of the Hedging Instrument that hedges Column (6) Book/Adjusted Carrying Value. This amount cannot exceed the Column (6) Book Adjusted Carrying Value.

(8) RBC Factor - Factor based on NAIC C-1 RBC factors table.

(9) Gross RBC Charge - The C-1 RBC charge based on holdings at the end of the year. Calculation: Columns (6) Book Adjusted Carrying Value multiplied by (8) RBC Factor.

(10) RBC Credit for Hedging Instruments - RBC credit for equity market risk reduction is limited to 94% of the C-1 Asset charge. Calculation: Column (7) Overlap with Insurer's

Factors Table
As determined by the NAIC

NAIC Designation	Factor
	0.00000
1	0.00158
1.A	0.00158
1.B	0.00271
1.C	0.00419
1.D	0.00523
1.E	0.00657
1.F	0.00816
1.G	0.01016
2.A	0.01261
2.B	0.01523
2.C	0.02168
3.A	0.03151
3.B	0.04537
3.C	0.06017
4.A	0.07386
4.B	0.09535
4.C	0.12428
5.A	0.16942
5.B	0.23798
5.C	0.30000
6	0.30000

Common Stock Type	Factor
Other Unaffiliated Public Common Stock	0.4500 †
Money Market Mutual Funds	0.0040
Federal Home Loan Bank Common Stock	0.0110
Unaffiliated Private Common Stock	0.3000

† - 30 percent adjusted up or down by the weighted average beta for the publicly traded common stock portfolio subject to a minimum of 22.5 percent and a maximum of 45 percent.

OFF-BALANCE SHEET COLLATERAL

(Including any Schedule DL, Part 1 Assets Included in the Asset Valuation Reserve)

LR018

Basis of Factors

Security lending programs are required to maintain collateral. Some entities post the collateral supporting security lending programs on their financial statements, and incur C-1 risk charges on those assets. Other entities have collateral that is not recorded on their financial statements. While not recorded on the financial statements of the company, such collateral has risks that are not otherwise captured in the RBC formula.

Annual Statement Schedule DL, Part 1, Securities Lending Collateral Assets reported on the balance sheet (Assets Page, Line 10) should be included on the schedule with the Off-Balance Sheet Collateral if they are not already reflected in the Asset Valuation Reserve and are reflected in another portion of the Life RBC formula.

The collateral in these accounts is maintained by a third-party (typically a bank or other agent). The collateral agent maintains detail asset listings of the collateral assets, and this data is the source for preparation of this schedule. The company should maintain such asset listings ret lisng 5.9(o)maintainirdnR4msO

MOODY'S ANALYTICS

Better Faster Decisions

Preliminary Proposed Updates to RBC C1 Bond Factors

For Discussion with Life Risk-Based Capital (E) Working Group

April 22, 2021

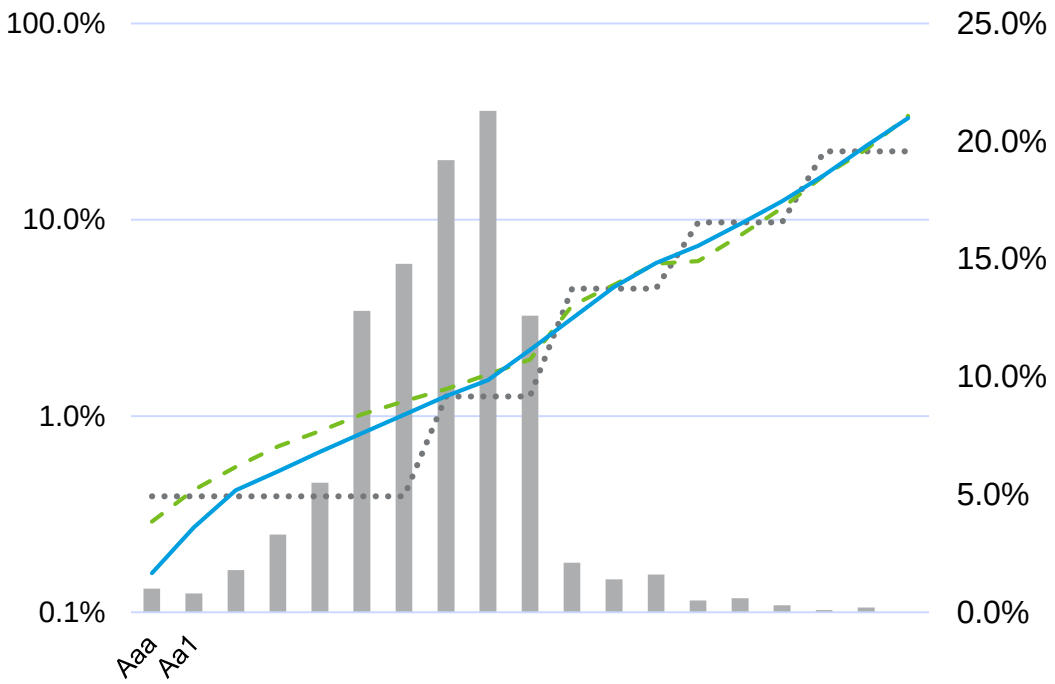
Scope

Proposing RBC C1 bond factors using data and methodologies that better reflect economic risks to better assess insolvency risk and help identify potentially weakly capitalized life insurers; the C1 factors should not incentivize poor business decisions that can adversely impact solvency.

- Methodologies and data rely entirely on public sources that are accessible and reproducible by NAIC and industry
- Articulated limitations
- NAIC to use at its discretion in setting the final C1 factors, although MA cautions isolated modifications to modeling features and parameters without considerations of the interconnected elements of the C1 modeling framework and limitations
- While the ACLI, the industry, the NAIC, and commissioners have been engaged extensively, the views are solely those of MA and based on an objective assessment of supporting documentation, and data and modeling approaches that in MA's experience viewed as best practice

1

Overview of Impactful Targeted Improvements


100.0%
10.0%
1.0%
0.1%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
Aaa
Aa1

2

Economic State Model and the MA Proposed Correlation Model

Economic State Model Initially Outside Scope

Two material limitations

Economic state model is calibrated to default rates across contraction and expansion states, but it implies default correlations of ~0% for IG issuers, overstating diversification across issuers relative to that observed empirically, resulting in:

- C1 base factors that potentially understate credit losses
- PAFs that are overly punitive (lenient) to portfolios with a smaller (larger) number of issuers

Economic Scalars, that are applied to the default rate term structure in each simulated state (expansion and contraction) exhibit counterfactual increases and decreases across the NAIC designation categories.

- They lead to an overall flattening of C1 base factors for high yield relative to those of investment grade
  - ¾ Contraction Economic Scalars average 2.56 for investment grade and 1.75 for high yield (1)
- Under certain parameterizations C1 base factors are non-monotonic, e.g., contraction scalar going from 1.9421 (Ba3) to 1.4958 (B1) (2).

Economic Scalars	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3
Continued Expansion	NA	NA	NA	NA	NA	NA	NA	0.7381	0.7380	0.7392	0.8189	0.8192	(2) 0.8189	0.8617	0.8620	0.8617	0.8549	0.8542	0.8536
Expansion	0.7365	0.7342	0.7361	0.7334	0.7309	0.7290	0.7300	1.1301	1.1299	1.1318	0.8381	0.8384	0.8381	1.1901	1.1905	1.1901	0.9100	0.9093	0.9087
Contraction	(1) 2.7495	2.7409	2.7482	2.7378	2.7287	2.7214	2.7252	2.1479	2.1475	2.1511	(1) 1.9422	1.9429	1.9421	1.4958	1.4964	1.4958	1.8042	1.8028	1.8016
Continued Contraction	NA	NA	NA	NA	NA	NA	NA	3.2231	3.2224	3.2279	2.9728	2.9738	2.9727	2.2114	2.2122	2.2114	2.2388	2.2371	2.2356

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Proposed C1 Base Factors

,QFUHPHQWDO HIIHFWV RI UHSODFLQJ WKH HFRQRPLF VWDWH PRGH

» 0$¶V SURSRVHG FRUUHODp9%

MIS Rating	Current Factors	$FDGHP\¶V Proposed Factors [March 2021]	0$¶V 3UHOLPLQDU Base Factors with Economic State Model & $FDGHP\¶V 'HIDXOW	0$¶V 3UHOLPLQDU\ Proposed Base Factors with Correlation Model & $FDGHP\¶V 'HIDXOW
Aaa	0.390%	0.290%	(1) 0.254%	0.289%
Aa1	0.390%	0.420%	0.373%	0.412%
Aa2	0.390%	0.550%	0.476%	0.550%
Aa3	0.390%	0.700%	0.593%	0.715%
A1	0.390%	0.840%	0.694%	0.896%
A2	0.390%	1.020%	0.817%	1.046%
A3	0.390%	1.190%	0.921%	1.254%
Baa1	1.260%	1.370%	1.128%	1.388%
Baa2	1.260%	1.630%	1.287%	1.633%
Baa3	1.260%	1.940%	1.542%	1.956%
Ba1	4.460%	3.650%	2.848%	3.955%
Ba2	4.460%	4.660%	3.739%	4.840%
Ba3	4.460%	5.970%	(2) 4.952%	5.995%
B1	9.700%	6.150%	4.920%	7.854%
B2	9.700%	8.320%	6.614%	9.901%
B3	9.700%	11.480%	9.319%	12.679%
Caa1	22.310%	16.830%	13.364%	16.044%
Caa2	22.310%	22.800%	18.788%	19.870%
Caa3	22.310%	33.860%	31.359%	28.933%

24%

0$¶V 3URSRVHG)DFWRUV

Impact on Post-PAF C1 RBC

»

3 Default Rates

»

Proposed C1 Base Factors

Incremental effects of MA proposed default rates

- Default rate term structures representing experience of life insurance holdings tend to be more differentiated across MIS ratings than Academy proposed, and closer aligned to benchmarks
- 7KH UHVXOWLQJ & EDVH IDFWRUV XQGHU 0$¶V SURSRVHG default rates are generally more differentiated across the Aa3 to Baa3 range
- The ratio of the Baa3 factor to the Aa3 factor is
  - ± XQGHU 0$¶V SURSRVDO ZLWK WKH $FDGHP\¶V GHIDXOW rates
  - ± XQGHU 0$¶V SURSRVDO
- 7KH $FDGHP\¶V SURSRVHG GHIDXOW UDWHV UHVXOW LQ & EDVH factors being approximately 15% larger on average than XQGHU 0$¶V SURSRVHG GHIDXOW UDWHV

MIS Rating	Current Factors	0$¶V 3UHOLPLQDU\ Proposed Base Factors ZLWK $FDGHP\¶V Default Rates	0$¶V 3UHOLPLQDU\ Proposed Base Factors
Aaa	0.390%	0.289%	0.158%
Aa1	0.390%	0.412%	0.271%
Aa2	0.390%	0.550%	0.419%
Aa3	0.390%	0.715%	0.523%
A1	0.390%	0.896%	0.657%
A2	0.390%	1.144%	0.816%
A3	0.390%	1.254%	1.016%
Baa1	1.260%	1.388%	1.261%
Baa2	1.260%	1.633%	1.523%
Baa3	1.260%	1.956%	2.168%
Ba1	4.460%	3.955%	3.151%
Ba2	4.460%	4.840%	4.537%
Ba3	4.460%	5.995%	6.017%
B1	9.700%	7.854%	7.386%
B2	9.700%	9.901%	9.535%
B3	9.700%	12.679%	12.428%
Caa1	22.310%	16.044%	16.942%
Caa2	22.310%	19.870%	23.798%
Caa3	22.310%	28.933%	32.975%

2.7X

4.1X

4

Risk Premium

5

Discount Rate and Tax Rate

Tax rate was updated from 35% to 21%

Discount rate

- Used to calculate the net present value of projected cash flows.
-

6 Recap

Summary of MA Proposed C1 Factors and their Impact

Data better represents historical experience R I O L I H L Q V X U H U V methodologies H [S H U L H Q F H O G L Q J V better capture issuer diversification → C1 base factors & PAFs more accurately reflect empirically observed default rates, default correlations, & diversification → More accurate C1 base factors and PAFs; better aligned with insolvency risk; reduced risk-shifting incentives

» Impact on post -PAF C1 RBC
  - ± Higher post-PAF RBC, on average, across the life industry compared to current formula
  - ± Larger post-PAF RBC increase compared to current formula, on average, for insurers with small and medium number of issuers, but much less so than W K D W X Q G H U $ F D G H P \ ¶ V S U R S R V D O

» Limitations of economic state model and their impact on accuracy of C1 base factors & PAFs
  - ± The economic state model overstates diversification across issuers relative to that observed empirically, resulting in
    - ¾ Understatement of credit losses in C1 base factors, all else equal
    - ¾ PAFs that are overly punitive (lenient) to portfolios with a smaller (larger) number of issuers
  - ± (F R Q R P L F 6 F D O D U V Z K L F K D U H S D U W R I W K H H F R Q R P L F V W D W H P R G H O X Q G H U W K H $ F D G H P \ ¶ V and decreases the C1 base factors across the NAIC designation categories. They lead to an overall flattening of high yield C1 base factors relative to investment grade, and under certain parameterizations C1 base factors that are non-monotonic.

» Impact of replacing the economic state model with MA proposed correlation model
  - ± MA proposed correlation model more accurately reflects empirically observed default correlations and issuer diversification benefits, and that addresses all aforesaid limitations of the economic state model. As a result:
    - ¾ MA proposed C1 base factors are more conservative and more differentiated across NAIC designation categories than those implied by the economic state model.
    - ¾ MA proposed PAFs more accurately reflect issuer diversification benefits and are less punitive (lenient) to portfolios with a small (larger) number of L V V X H U V U H O D W L Y H W R W K R V H I U R P W K H $ F D G H P \ ¶ V S U R S R V D O

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