



AMERICAN ACADEMY *of* ACTUARIES

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November 22, 2019

Ms. Rhonda Ahrens
Chair, Longevity Risk (A/E) Subgroup
National Association of Insurance Commissioners

Via email: Dave Fleming (dfleming@naic.org)

Re: RBC Blank Implementation of Longevity C-2

Dear Rhonda,

On behalf of the Longevity Risk Task Force of the American Academy of Actuaries,¹ I am providing sample changes to risk-based capital (RBC) blanks to implement longevity C-2 factors to assist the Longevity Risk Subgroup.

Changes from the existing blanks are highlighted in yellow in the attached excel file.

- The LRtbd tab was previously provided to calculate the pre-tax longevity C-2 amount based on the factors proposed by the LRTF.
- Changes to LR030 include longevity risk in the calculation of tax effect for C-2.
- Changes to LR031 include longevity risk in the calculation of Net C-2 Post-Tax.

It was necessary to add new lines to LR030 and LR031 for longevity risk. This was done in this sample by adding lines numbered with “b.” It may be preferable in a final version to renumber the entire calculation so that longevity risk uses a uniquely numbered line.

Correlation between longevity and mortality is included in the formulas suggested for implementation. The formula includes a TBD Correlation Factor which can be inserted into the formula pending a decision by Life RBC on correlation.

At your request we have also included an alternative formula (provided to the right in the exhibit) that includes a Guardrail Factor that could be used to limit the reduction from correlation. We do not believe this Guardrail Factor is needed as part of the implementation of longevity C-2. If correlation is implemented with the Guardrail Factor, we recommend that it be

¹ The American Academy of Actuaries is a 19,500-member professional association whose mission is to serve the public and the U.S. actuarial profession. For more than 50 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.

reviewed and phased out over time rather than become a permanent factor increasing the complexity of the RBC calculation.

Should you have any questions or comments regarding this letter, please contact Ian Trepanier, life policy analyst at the Academy (trepanier@actuary.org).

Sincerely,

Paul Navratil, MAAA, FSA
Chairperson, Longevity Risk Task Force
American Academy of Actuaries

||CALCULATION OF TAX EFFECT FOR LIFE AND FRATERNAL RISK-BASED CAPITAL (CONTINUED)

(134) Long-Term Care	Company Name	Source LR019 Health Premiums Column (2) Line (28) + LR023 Long-Term Care Column (4) Line (7)	(1)		(2)	
			RBC Amount	Tax Factor	RBC Tax Effect	
(135) Life Insurance C-2 Risk		LR025 Life Insurance Column (2) Line (8)	_____	X 0.2100	=	_____
(136) Group Insurance C-2 Risk		LR025 Life Insurance Column (2) Lines (20) and (21)	_____	X 0.2100	=	_____
(136b) Longevity C-2 Risk		LR025 Life Insurance Risk Column (2) Line (5)	_____	X 0.2100	=	_____
(137) Disability and Long-Term Care Health Claim Reserves		LR024 Health Claim Reserves Column (4) Line (9) + Line (15)	_____	X 0.2100	=	_____
(138) Premium Stabilization Credit		LR026 Premium Stabilization Reserves Column (2) Line (10)	_____	X 0.0000	=	_____
(139) Total C-2 Risk		$L(133) + L(134) + L(137) + L(138) + \text{Square Root of } [(L(135) + L(136))^2 + L(136b)^2 + 2 * (TBD \text{ Correlation Factor}) * (L(135) + L(136)) * L(136b)]$	_____			_____
(140) Interest Rate Risk		LR027 Interest Rate Risk Column (3) Line (36)	_____	X 0.2100	=	_____
(141) Health Credit Risk		LR028 Health Credit Risk Column (2) Line (7)	_____	X 0.0000	=	_____
(142) Market Risk		LR027 Interest Rate Risk Column (3) Line (37)	_____	X 0.2100	=	_____
(143) Business Risk		LR029 Business Risk Column (2) Line (40)	_____	X 0.2100	=	_____
(144) Health Administrative Expenses		LR029 Business Risk Column (2) Line (57)	_____	X 0.0000	=	_____
(145) Total Tax Effect		Lines (109) + (120) + (132) + (139) + (140) + (141) + (142) + (143) + (144)	=====			=====

Confidential when Completed

NAIC Company Code

Alternative with Guardrail Factor:

$L(133) + L(134) + L(137) + L(138) + \text{Greatest of } [\text{Guardrail Factor} * (L(135)+L(136)), \text{Guardrail Factor} * L(136b), \text{Square Root of } [(L(135) + L(136))^2 + L(136b)^2 + 2 * (TBD \text{ Correlation Factor}) * (L(135) + L(136)) * L(136b)]]$

CALCULATION OF AUTHORIZED CONTROL LEVEL RISK-BASED CAPITAL (CONTINUED)

Company Name	Source	Confidential when Completed	(1) RBC Requirement	NAIC Company Code
<u>Insurance Risk (C-2)</u>				
(43) Individual and Industrial Life Insurance	LR025	Life Insurance Column (2) Line (8)	_____	
(44) Group and Credit Life Insurance and FEGI/SGLI	LR025	Life Insurance Column (2) Lines (20) and (21)	_____	
(44b) Longevity Risk	LRtbd	Longevity Risk Column (2) Line (5)	_____	
(45) Total Health Insurance	LR024	Health Claim Reserves Column (4) Line (18)	_____	
(46) Premium Stabilization Reserve Credit	LR026	Premium Stabilization Reserves Column (2) Line (10)	_____	
(47) Total (C-2) - Pre-Tax	L(45) + L(46) + Square Root of [L(43) + L(44) ² + L(44b) ² + 2 * (TBD Correlation Factor) * (L(43) + L(44)) * L(44b)]		_____	Alternative with Guardrail Factor: L(45) + L(46) + Greatest of [Guardrail Factor * (L(43)+L(44)), Guardrail Factor * L(44b), Square Root of [(L(43) + L(44)) ² + L(44b) ² + 2 * (TBD Correlation Factor) * (L(43) + L(44)) * L(44b)]]
(48) (C-2) Tax Effect	LR030	Calculation of Tax Effect for Life and Fraternal Risk-Based Capital Column (2) Line (139)	_____	
(49) Net (C-2) - Post-Tax	Line (47) - Line (48)		=====	
<u>Interest Rate Risk (C-3a)</u>				
(50) Total Interest Rate Risk - Pre-Tax	LR027	Interest Rate Risk Column (3) Line (36)	_____	
(51) (C-3a) Tax Effect	LR030	Calculation of Tax Effect for Life and Fraternal Risk-Based Capital Column (2) Line (140)	_____	
(52) Net (C-3a) - Post-Tax	Line (50) - Line (51)		=====	
<u>Health Credit Risk (C-3b)</u>				
(53) Total Health Credit Risk - Pre-Tax	LR028	Health Credit Risk Column (2) Line (7)	_____	
(54) (C-3b) Tax Effect	LR030	Calculation of Tax Effect for Life and Fraternal Risk-Based Capital Column (2) Line (141)	_____	
(55) Net (C-3b) - Post-Tax	Line (53) - Line (54)		=====	
<u>Market Risk (C-3c)</u>				
(56) Total Market Risk - Pre-Tax	LR027	Interest Rate Risk Column (3) Line (37)	_____	
(57) (C-3c) Tax Effect	LR030	Calculation of Tax Effect for Life and Fraternal Risk-Based Capital Column (2) Line (142)	_____	
(58) Net (C-3c) - Post-Tax	Line (56) - Line (57)		=====	