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September 10, 2019

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

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

Re: Requested sensitivities to longevity risk-based capital (RBC) factors

Dear Rhonda,

On behalf of the Longevity Risk Task Force of the American Academy of Actuaries,[1] I am providing additional assumption sensitivities to the proposed longevity C-2 risk factors as requested by the Longevity Risk Subgroup at the July 17, 2019, call.

1. Sensitivity to Assumed Reserve Level (85th percentile)

The proposed longevity C-2 factors we have suggested were calibrated to cover risk between a reserve level that was assumed to represent an 85th percentile outcome and a 95th percentile capital objective. The following are important to consider in setting the reserve level assumption for the purpose of calibrating risk-based capital factors:

- The appointed actuary is required to opine that aggregate reserves are adequate under moderately adverse conditions.
- Principle-based reserve requirements (e.g., VM-20 and VM-21) define prudent estimate assumptions at a conditional tail expectation (CTE) 70 level that is at least as adverse as the 85th percentile, although this is different from prescribing reserves at a specific level.
- The sufficiency of the overall reserve is the important result and key assumption in calibrating capital levels. It is not necessary or appropriate to consider the severity level of individual assumptions prescribed in statutory reserves—only whether aggregate reserve levels are appropriate.

[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.

- RBC is based on the premise that reserves are adequate. If there are concerns that prescribed statutory reserve levels are insufficient, these are best addressed in reserve requirements directly.
- There should be consistency in assumed reserve levels across the RBC framework and any change to this fundamental RBC assumption should be applied consistently across risks rather than arbitrarily to longevity risk alone.

The sensitivities below show the impact to the RBC factor if the longevity stress were adjusted to represent the difference between reserves at different assumed levels of adequacy (85th, 80th, 75th) and the total asset requirement consistently calibrated to a 95th percentile outcome, as requested. Factors continue to be expressed as a percentage of statutory reserves as reported through the longevity risk field study (denominator is consistent across all sensitivities).

Providing these requested sensitivities does not imply that there is an actuarial basis for these alternatives or constitute any level of endorsement that they would be appropriate for use in calibrating risk-based capital factors.

	C-2 Longevity After-Tax Factor		
Total Reserves (in scope products)	Reserves at 85th Percentile	Reserves at 80th Percentile	Reserves at 75th Percentile
up to $250M	1.35%	1.78%	2.15%
next $250M	0.85%	1.12%	1.36%
next $500M	0.75%	0.99%	1.20%
over $1B	0.70%	0.92%	1.12%

2. Sensitivity to Assumed Average Reserve per Policy ($50k)

There was discussion at the July 17 Longevity Risk Subgroup call of the average reserve per policy assumption used to scale the factors on a dollar reserve basis rather than a life count basis.

We commented in our original proposal that the number of individual exposures is a better proxy for scaling longevity risk than the dollar size of reserves and would support such an approach if it is judged to be feasible to implement within RBC.

The preliminary factors we proposed are scaled to the dollar size of reserves, which is a simplification that more easily aligns to existing statutory reported values. In our view, $50,000 average reserve per policy is a reasonable assumption, though we do expect that this average reserve would vary significantly across companies and blocks of business.

The sensitivity below shows alternative scaling of the factors using different assumed reserve per policy values ($40k, $50k, $60k).

$40k/Policy **Total Reserves (in scope products)**	$50k/Policy **Total Reserves (in scope products)**	$60k/Policy **Total Reserves (in scope products)**	**C-2 Longevity After-Tax Factor**
up to $200M	up to $250M	up to $300M	1.35%
next $200M	next $250M	next $300M	0.85%
next $400M	next $500M	next $600M	0.75%
over $800M	over $1B	over $1.2B	0.70%

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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