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May 27, 2021

Mr. Philip Barlow  
Chair, Life Risk-Based Capital (E) Working Group  
National Association of Insurance Commissioners (NAIC)

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

Re: April 30, 2021, 2021-13-L Longevity Factors and Instructions exposure

Dear Philip,

On behalf of the C-2 Longevity Risk Work Group of the American Academy of Actuaries,<sup>1</sup> I am providing comments on the April 30, 2021, exposure of longevity risk-based capital (RBC) factors.

#### 1. **Correlation Factors**

The exposed correlation factors of negative 0.30 and negative 0.25 are reasonable and generally consistent with the negative 0.33 factor we previously proposed. As discussed in prior comment letters on this topic<sup>2</sup> we do not believe a positive 100 percent correlation is a reasonable representation for how longevity and mortality risks are related.

#### 2. **Industry Level Impacts**

A draft version of the industry-level impact of the proposed factors was included in the materials for the April 29, 2021, Life Risk-Based Capital Working Group meeting with the expectation they will be updated with correlation factors matching the April 30 exposure. These impacts were calculated by using the total industry-level reserve exposure subject to longevity C-2 risk then applying the capital factors to statutory reserves up to each breakpoint and correlation calculation using this total. It is important to note that this calculation results in a smaller aggregate C-2 amount than would result from summing the total C-2 amounts calculated at an individual company level to arrive at a total. This difference is driven in two areas of the calculation:

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<sup>1</sup> 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.

<sup>2</sup> [https://www.actuary.org/sites/default/files/2020-01/LRTF Comment Letter for Feb 7 2020 LRBCWG Exposure.pdf](https://www.actuary.org/sites/default/files/2020-01/LRTF%20Comment%20Letter%20for%20Feb%207%202020%20LRBCWG%20Exposure.pdf)

- i. As acknowledged during the April 29 meeting, applying the capital factor breakpoints to the total industry amount of statutory reserves will result in a smaller total longevity C-2 amount than would applying the breakpoints at an individual company level then summing the resulting longevity C-2 directly.
- ii. In addition, applying the correlation adjustment to the total industry levels of mortality C-2 and longevity C-2 will result in a lower total C-2 amount than would result from applying correlation at an individual company level then summing the resulting total C-2 amounts directly.

It is not possible to accurately estimate the amount by which this simplified aggregate level calculation understates the impact at an industry level without additional insight into company level results. The impact could be material however, and the limitations of the aggregate level calculation should be understood by the Life Risk-Based Capital Working Group when interpreting this impact analysis.

### 3. Interest Rate Sensitivity

The capital factors included in the exposure, which we first shared with the Longevity Risk (A/E) Subgroup in February 2019, used a pre-tax discount rate of 5% as an assumption in the analysis. This assumption was set to be consistent with the rate that had been used elsewhere in the development of capital factors for other risks. Since that 2019 proposal, interest rate levels have remained low. Further work group discussion of discount rates used in capital analysis across areas of life risk-based capital has led us to conclude that consistency of methodology is preferable to consistency in a numerical discount rate.

The original 5% discount rate used in C-1 analysis had been calculated at the time as a 20-year historical average of a 10-year risk-free rate. We are using a 20-year Treasury rate tenor for longevity risk, which is measured over the future lifetime of policyholders. At the time of our original analysis in 2018, the average 20-year Treasury rate tenor was 4.3% based on the 1998-2017 period. The impact of recent low interest rates would further decrease this assumption to 3.75% if based on 2001–2020 data. This lower discount rate would increase the present value longevity capital factors by approximately 10% compared to the 2019 proposal. Rounding the result to the nearest 0.05% would result in the after-tax factors below:

	Original 5% Discount Rate	Revised 3.75% Discount Rate
First \$250 Million	1.35%	1.50%
Next \$250 Million	0.85%	0.95%
Next \$500 Million	0.75%	0.85%
Over \$1,000 Million	0.70%	0.80%

## Implementation Considerations

We have included the interest rate sensitivity above as additional information given known material changes since the time of the analysis underlying the proposed capital factors. As with other factors within RBC, we anticipate that periodic review of the longevity risk factors will be required to reflect changing market conditions or to incorporate additional information that may become available. We included in our May 21, 2019, letter to the Longevity Risk Subgroup<sup>3</sup> a list of circumstances under which a review of the factors should be considered, including a material change in the long-term assumption for interest rates.

This interest rate sensitivity does not represent a holistic review of the analysis and assumptions that underly the proposed capital factors and, as such, we are not prepared to update the recommendation. While we are not aware of other material information or assumptions that would impact the analysis, we have not done a complete refresh of the analysis and it is possible that other assumptions would also change as part of a holistic review. Long-term mortality implications of the pandemic and potential insights from Society of Actuaries' research on mortality across socioeconomic groups are examples of developments that could also be considered in a review of the analysis. Of course it is up to the Life Risk-Based Capital Working Group to consider whether to incorporate this interest rate sensitivity into the implementation of a longevity risk charge in the near term or to defer consideration to a future review.

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Should you have any questions or comments regarding this letter, please contact Khloe Greenwood, life policy analyst at the Academy ([greenwood@actuary.org](mailto:greenwood@actuary.org)).

Sincerely,

Paul Navratil, MAAA, FSA  
Chairperson, C-2 Longevity Risk Work Group  
American Academy of Actuaries

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<sup>3</sup> [https://www.actuary.org/sites/default/files/2019-05/Academy Longevity Risk Task Force Exposure Comments 052219.pdf](https://www.actuary.org/sites/default/files/2019-05/Academy%20Longevity%20Risk%20Task%20Force%20Exposure%20Comments%20052219.pdf)