AMERICAN ACADEMY *of* ACTUARIES

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March 11, 2021

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

Dear Philip,

On behalf of the American Academy of Actuaries[1] C1 Work Group (C1WG), we present to the Life Risk-Based Capital (E) Working Group updated base bond factors and a companion portfolio adjustment formula to reflect corporate tax rates enacted by the Tax Cuts and Jobs Act of 2017 for the Life Risk-Based Capital (LRBC) formula. The C1WG's most recent recommendation on updated bond factors was provided to the NAIC's Investment Risk-Based Capital Working Group on October 10, 2017.[2] No other changes have been made to the October 17, 2017, recommendation.

As we have done in previous reports to the NAIC, we are providing direct model output for the base factors. As is the case with the current capital requirements for bonds, we recommend capping the base factor for the lowest-quality bond designation at 30%. Note that this approach caps the capital requirement for bonds at the base factor for unaffiliated common stock. In addition to capping the factor, we have not rounded any of the factors, as was done for the current bond factors.

A. UPDATED BASE FACTORS

The table below shows updated bond factors using a 21% corporate tax rate and the factors recommended in October 2017. These factors are used in the first step in calculating the basic capital requirements for bonds. These factors have been established at the statistical safety level specified by regulators. These factors in combination with the portfolio adjustment are expected to establish required capital at the 96th percentile over a 10-year time horizon. The assumptions used in developing these factors are based on expected loss given default experience for a portfolio of bonds that is representative of a typical life insurer's bond portfolio.

In the development of the capital requirements for credit risk, recall that the tax rate affects the net loss flowing through statutory surplus. The factor is based on a discounted after-tax cash flows. As such, an after-tax discount is used in the calculation. In the October 2017 recommendation, the after-tax cash flows were discounted at 3.25%. The updated bond factors are based on after-tax cash flows discounted at

[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.
[2] https://www.actuary.org/sites/default/files/files/publications/Academy_C1WG_Comments_to_NAIC_IRBC_101017.pdf.

3.95%. Note that both sets of factors are based on a 5% pre-tax rate; only the after-tax discount rate has changed.

Base C1 Bond Factors

	10.17.2017 Recommendation	3.5.2021 Update
	Pre-Tax	Pre-Tax
Aaa	0.31%	0.29%
Aa1	0.43%	0.42%
Aa2	0.57%	0.55%
Aa3	0.72%	0.70%
A1	0.86%	0.84%
A2	1.06%	1.02%
A3	1.24%	1.19%
Baa1	1.42%	1.37%
Baa2	1.69%	1.63%
Baa3	2.00%	1.94%
Ba1	3.75%	3.65%
Ba2	4.76%	4.66%
Ba3	6.16%	5.97%
B1	6.35%	6.15%
B2	8.54%	8.32%
B3	11.82%	11.48%
Caa1	17.31%	16.83%
Caa2	23.22%	22.80%
Caa3	34.11%	33.86%

B. UPDATED PORTFOLIO ADUSTMENT FORMULA

The table below shows an updated portfolio adjustment formula, as developed for the updated base factors above. As a reminder, the purpose of the adjustment is to modify the base calculation for the diversification of the insurer's bond portfolio, relative to the representative portfolio. The portfolio adjustment increases or decreases the base capital requirement (equal to the arithmetic sum of the base factor times the statutory carrying value of each bond) based on the number of issuers in the insurer's portfolio.

The representative bond portfolio used in developing the base factors contained 824 issuers. As per the October 2017 recommended portfolio adjustment, the updated portfolio adjustment is neutral or approximately equal to 1.0 for an average portfolio (i.e., a portfolio with the same number of bonds as contained in the representative portfolio.) The updated approach meets that criterion because the exact percentile confidence level of the base factors was selected to reproduce aggregate industry C1 requirements when the base factors are applied to each company portfolio. That said, the confidence level for the base factors is close to the 96th percentile for each rating class, and the portfolio adjustment only captures differences in a company's diversification risk relative to the representative portfolio.

Portfolio Adjustment Factors

	10.17.2017 Recommendation			3.5.2021 Update	
	Issuers	Factor		Issuers	Factor
Up to	10	7.80	Up to	10	7.50
Next	90	1.75	Next	90	1.75
Next	100	1.00	Next	100	0.90
Next	300	0.80	Next	300	0.85
Over	500	0.75	Over	500	0.75

C. COMMENTS ON THE AGE OF ASSUMPTIONS

The C1WG began its work on the C1 Bond Capital Requirements in 2011. With input from regulators (NAIC's C1 Factor Review Subgroup, NAIC's Investment RBC Working Group, and the NAIC's Life Risk-Based Capital Working Group), the C1WG updated the capital requirements to be used within the U.S. Solvency framework.

Many of the assumptions used in these factors, such as the bond default and recovery assumptions, are based on the experience for corporate bonds through 1983–2012. Other assumptions, notably the discount rate, are also based on data from a similar time period.

We understand that regulators are intent on adopting updated bond factors for the 2021 Life Risk-Based Capital calculation, particularly given the shortfall of the current requirements to meet regulators' desired statistical safety level for credit risk. However, we would be remiss in not stating our concern about adopting a set of factors based on outdated assumptions.

While we have not modeled any assumption changes, we are concerned that the factors in this letter may be lower than what an analysis of updated data would produce. The base factors recommended in 2017 for bonds, exclusive of the impact of increased requirements from the tax change, increase the capital requirements for credit risk approximately 15-20% for the industry, on average. Updated assumptions might indicate that capital requirements should be increased further. We understand the desire to now adopt factors that move the capital requirements closer to the desired statistical level but encourage regulators to consider more frequent reviews of the assumptions and the resulting factors.

We appreciate your consideration of this update. Please contact Nancy Bennett, senior life fellow (bennett@actuary.org), or Khloe Greenwood, life policy analyst (greenwood@actuary.org), with any questions.

Sincerely,

Nancy Bennett, MAAA, FSA, CERA
Co-Chairperson, C1 Work Group
American Academy of Actuaries

Jerry Holman, MAAA, FSA, CFA
Co-Chairperson, C1Work Group
American Academy of Actuaries