AMERICAN ACADEMY of ACTUARIES
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December 15, 2020

Steve Drutz
Chair, Health Risk-Based Capital (E) Working Group
National Association of Insurance Commissioners (NAIC)

Re: Request for Analysis to Incorporate Investment Income into the Underwriting Risk Component of the Health Risk-Based Capital Formula

Dear Mr. Drutz:

On behalf of the American Academy of Actuaries (Academy)[1] Health Solvency Subcommittee, I am pleased to provide this response letter to the NAIC Health Risk-Based Capital (HRBC) Working Group. This letter is in response to the request from the HRBC Working Group to provide analysis to incorporate investment income into the existing underwriting risk factors within the HRBC formula.

**Incorporation of Investment Income into H2 Risk Factors**

The H2 risk factors were based on a 5% probability of ruin over a 3- to 5-year period for each line. There is a fair degree of uncertainty with respect to the development of these factors, though it is likely they were developed without consideration of offsetting investment income. To reflect investment income into these factors, we studied the property and casualty (P&C) underwriting risk factor approach, which explicitly includes investment income via an Investment Income Adjustment (IIA).

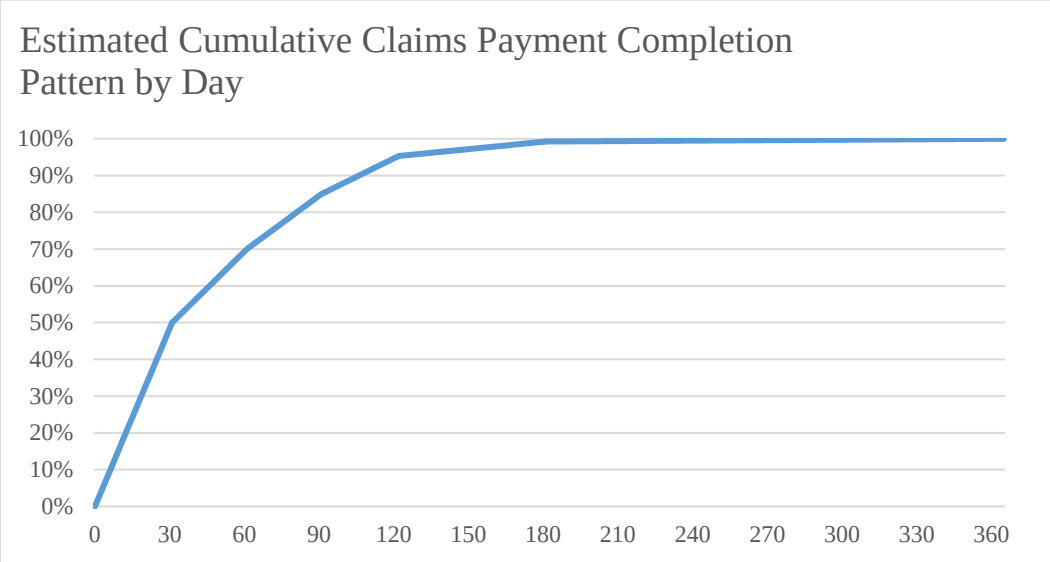
To summarize the P&C framework with respect to the IIA within the P&C Net Written Premium Risk (akin to the Health H2 Experience Fluctuation Risk), the base RBC charge amounts to:

$$Premium * (IIA * Risk\_Factor + Expense\_Ratio - 1)$$

[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.

The IIA*Risk_Factor expression is the discounted loss ratio at the target safety margin (87.5th percentile for P&C). Then, the IIA*Risk_Factor + Expense_Ratio -1 is the discounted operating loss at the target safety margin.

This level of clarity around the components of the risk charges does not exist for the Health risk factors, but, using certain assumptions the P&C framework can be translated into the current Health factors. For example, the base Comprehensive Major Medical risk factor is 9%; if a 9% expense ratio (based on high-level industry benchmarking of health plan administrative expenses, excluding claims adjustment expense) is assumed and no IIA (i.e., an IIA of 1.0), then the underlying Risk Factor is 100%. To estimate the IIA for a typical health product, the subcommittee used the following claims payment completion pattern and assumed that premium is collected at policy onset and investment income is earned on any premium collected less claims paid.




The results are sensitive to the assumed claim payment pattern. For example, if all claims are paid at the end of the year, a full year of investment income could be earned; if all claims were paid immediately, then no investment income could be earned. Under this illustration, the average claim is paid approximately 1.5 months after incurral—largely consistent with health product payment patterns. To the extent actual claims take longer to develop, more investment income will be earned and the Investment Income Adjustment will be larger.

The other key assumption is the investment return. Investment yields based on a high-level analysis of health plan statutory financial statements over the past several years might indicate that a 2-3% assumption would be reasonable, though that may be overstating investment income on written premiums, as approximately half of the claims are paid in about one month and the

one-month Treasury rates are near zero today. Additionally, most investment income is likely earned from surplus funds. Given this uncertainty, the subcommittee performed sensitivity testing to understand the impact returns would have on the Risk Factor, as shown below:

| Investment Return | Investment Income Adj. | Risk Charge Adj. Factor | Base Risk Factor |
|---|---|---|---|
| 0.0% | 1.0000 | 1.0000 | 9.00% |
| 0.1% | 0.9999 | 0.9985 | 8.99% |
| 0.5% | 0.9993 | 0.9927 | 8.93% |
| 1.0% | 0.9987 | 0.9854 | 8.87% |
| 1.5% | 0.9980 | 0.9780 | 8.80% |
| 2.0% | 0.9974 | 0.9707 | 8.74% |
| 3.0% | 0.9960 | 0.9558 | 8.60% |

One concern raised by the Academy's Solvency Subcommittee is that investment income is not generally a consideration with respect to the underwriting of short-term health care policies. While this is true, the related claims payable reserves and corresponding assets do generate investment returns. Because reserving risk is not considered within the HRBC formula, inclusion of investment income in Experience Fluctuation Risk may be reasonable.

There is considerably more uncertainty around the development of the Health Experience Fluctuation Risk factors than P&C Net Written Premium risk factors, as it has been some time since they were materially changed. As a result, making this change in the RBC formula may be an exercise in false precision because the baseline factors are not well understood. Ultimately, the regulatory usefulness of changes to the RBC formula will depend on both a strong understanding of the starting point and the suggested change. Given the importance of Underwriting Risk factors within the HRBC formula, it may be worth revisiting their development more broadly in the future.

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If you have any questions or would like to discuss further, please contact Matthew Williams, the Academy's senior health policy analyst, at williams@actuary.org.

Sincerely,

Derek Skoog, MAAA, FSA
Chairperson
Health Solvency Subcommittee
American Academy of Actuaries

Cc: Crystal Brown: Senior Insurance Reporting Analyst