November 3, 2017

Mr. Mike Boerner
Chair, Life Actuarial (A) Task Force
National Association of Insurance Commissioners
Via email: Reggie Mazyck (rmazyck@naic.org)

Dear Mike,

The Life Reinsurance Work Group of the American Academy of Actuaries[1] appreciates the opportunity to provide the following comments regarding nonguaranteed, yearly renewable term (YRT) reinsurance premiums under Section 20 of the Valuation Manual (VM-20)—*Requirements for Principle-Based Reserves for Life Products*.

Current VM-20 guidance on the determination of future nonguaranteed YRT reinsurance premium rates for use in modeling the deterministic reserve (DR) and stochastic reserve (SR) may result in inconsistent results among companies and, potentially, significant reserve differences. Different interpretations of current guidance may lead to materially different approaches to projecting future YRT premium rates. The question is essentially to what extent, if any, should potential future increases in a nonguaranteed YRT premium rate scale (but not to rates that exceed a contractually guaranteed maximum), due to higher-than-expected mortality in the prudent assumption, be reflected in the deterministic and stochastic projections? The Life Reinsurance Work Group has identified several approaches to setting future YRT reinsurance premium rate scales for consideration should regulators wish to clarify current guidance or its application in order to narrow the range of results.

Modeling by the Ceding Company and/or Reinsurer
The following approaches should be considered whether modeling is done by the ceding company or the reinsurer:

1) *Immediate adjustment to maintain a future "best estimate margin":* Under this approach, a company would project an immediate adjustment to the YRT scale so that the relationship of future prudent estimate death benefits to projected YRT premiums is the same as the relationship between projected death benefits using anticipated experience and projected YRT premiums using current scale. This approach would increase the direct reserve by the present value of future economic margins in the reinsurance.

[1] The American Academy of Actuaries is a 19,000-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) *Immediate increase in YRT scale, if necessary, to achieve breakeven:* If the current YRT scale would produce a reinsurance gain for the cedent and loss for the reinsurer, a company would project an immediate increase to scale so that present value of future death benefits equals the present value of future YRT premiums net of expense allowances. This is similar to the current "½ cx" treatment of YRT, which effectively assumes no benefit or cost of reinsurance beyond a treaty's paid-to date.
3) *Adjustment to best estimate margin after a few years.* This is the same approach as (1), but any increase is delayed for some limited number of years depending on credibility and experience.
4) *Adjustment to breakeven after a few years:* This is the same approach as (2), but the increase is delayed for some limited number of years depending on credibility and experience.
5) *Use of the current scale:* Under this approach the projected YRT premiums a company would use the current rate scale. This effectively treats nonguaranteed YRT reinsurance as though the current scale were fully guaranteed for the life of the block of business, regardless of underlying experience.
6) *Addition of a margin to the current scale:* A company would use current rates plus a margin that could be unrelated to the level of the prudent estimate mortality assumption.

In addition to several observations from the work group, the Valuation Manual includes support for approaches such as (1) through (4) above. (See appendix for relevant text from the sections highlighted below.):

- Section 8.C.3.c states that there should be consistency among assumptions.
- Section 8.C.7 states that the assumption should be made that counterparties are likely to "exercise the terms of a [reinsurance] agreement to their respective advantage."
- Section 8.C.10 states that assumptions used by the ceding company should account for any actions that the assuming company is likely to take.
- Section 8.C.11 states that the ceding company shall consider all elements of a reinsurance agreement that the assuming company can change.
- There is potential economic value to a guarantee or lack of guarantee, and the principle-based reserve (PBR) valuation should reflect the value of such contract terms.
- One assertion may be that cedent reserves should not be materially reduced today on account of a YRT rate that might be changed in future. If so, material persistent gains to the cedent from nonguaranteed YRT reinsurance imply comparable persistent losses for the reinsurer, and it may not be consistent with the goals of prudent valuation to assume such losses are simply absorbed by the reinsurer indefinitely without response.

There are also a number of reasons for continuation of current rates or current rates plus a margin, cases (5) and (6):

- Section 8.C.7 states that regarding the exercising of the term of a reinsurance agreement to each party's respective advantage, the ceding company should take into account the entire economic relationship between the parties, the usual and customary practices, past practices, and limits on the ability to exercise contractual options. Such considerations may suggest no likelihood of future rate changes.
- Some companies note that their true best estimate is that current scale will stay unchanged and the valuation should simply reflect that.

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- Regarding limitations on the reinsurer's ability to change scale, some YRT reinsurance agreements include limitations or conditions on the ability of the reinsurer to raise rates (e.g., requirements that the reinsurer look to the experience of a larger block of business and/or change rates for an entire block of treaties). From VM-20, it is unclear whether the cedent (or reinsurer) should assume that such requirements are met to allow a rate change.
- A ceding company (if the direct company) may suggest that projection of YRT scale should be considered in the context of its projection of other nonguaranteed elements. In its valuation, it might project that it will not increase policy Cost of Insurance (COI) charges in cases where it is otherwise able to increase them, such as for universal life (but not for any universal life with secondary guarantee), and recommend that a similar convention should apply to its projection of YRT scale.
- Modeling one change raises the question of potential related changes. For example, if the reinsurer raises scale, should recapture probabilities be adjusted? If so, how? Should COIs be expected to change, with what impact on policyholder behavior or what impact on usage of secondary guarantees if present? Such dependencies are difficult to model with confidence, especially when a hypothetical scenario deviates greatly from current or best estimate conditions. One question is whether PBR valuation should cut through this complexity and take a simpler approach.

Potential Inconsistency Between Cedent and Reinsurer Projections

- In general, VM-20 was constructed so that cedent and reinsurer could pursue valuations independently, without the need to confer or coordinate on their modeling approaches; share otherwise confidential, commercially proprietary experience; use matching assumptions; or create dependencies that could endanger timely completion of the valuation.
- As a result of this flexibility, reinsurer and cedent may employ different and incompatible modeling approaches. For example, one party might assume immediate change in scale and the other party, no change in scale.
    - Companies might be incentivized to adopt assumptions that achieve the lowest reserves for their valuations viewed independently. In such cases, cedent and reinsurer may make incompatible assumptions as to future YRT rate changes (e.g., cedent may assume no change in scale and reinsurer assumes immediate restitution of its economic margin), potentially inconsistent with the goal of PBR to include prudent mortality margins in the reserves.
    - Companies may be required to impose worst-case valuation assumptions on both sides of the transaction (e.g., no change in scale for the reinsurer valuation; immediate change in scale for the cedent valuation). That would hold the full PBR mortality margin at cedent and at reinsurer, raising YRT cost and reducing its prudent use to mitigate cedents' period-by-period volatility in mortality experience.

The Academy's Life Reserves Work Group has previously recommended the use of an aggregate margin approach in the determination of the DR and SR for risk factors that are not stochastically modeled. It has been suggested that materially different results because of the modeling of nonguaranteed YRT reinsurance premiums would be reduced significantly if the DR and SR

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made use of an aggregate margin in lieu of the current mandate for individual risk factor margins. It has also been suggested that whether this would be the result of an aggregate margin is unknown until the details of an aggregate margin approach are specified and evaluated. This topic is on the table for future consideration by NAIC Life Actuarial Task Force (LATF). Nonetheless, because the determination of the DR and the SR currently requires the use of individual risk factor margins, there is a sense that this issue regarding nonguaranteed YRT reinsurance premiums needs to be considered immediately by LATF.

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Should you have questions regarding these suggestions, please contact Ian Trepanier, the Academy's life policy analyst, at trepanier@actuary.org.

Sincerely,

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Chairperson, Life Reinsurance Work Group
American Academy of Actuaries

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APPENDIX: Selected Sections from VM-20 for Reference

From VM-20, Section 7. Cash-Flow Models

7.C NGE Cash Flows

1. Except as noted in Subsection 7.C.5, the company shall include NGE in the models to project future cash flows beyond the time the company has authorized their payment or crediting.

2. The projected NGE shall reflect factors that include, but are not limited to, the following (not all of these factors will necessarily be present in all situations):

   a. The nature of contractual guarantees.
   b. The company's past NGE practices and established NGE policies.
   c. The timing of any change in NGE relative to the date of recognition of a change in experience. The benefits and risks to the company of continuing to authorize NGE.

3. Projected NGE shall be established based on projected experience consistent with how actual NGE are determined.

4. Projected levels of NGE in the cash-flow model must be consistent with the experience assumptions used in each scenario. Policyholder behavior assumptions in the model must be consistent with the NGE assumed in the model.

5. The company may exclude any portion of an NGE that:

   a. Is not based on some aspect of the policy's or contract's experience.
   b. Is authorized by the board of directors and documented in the board minutes, where the documentation includes the amount of the NGE that arises from other sources.

   However, if the board has guaranteed a portion of the NGE into the future, the company must model that amount (unless excluded by Subsection 7.C.6). In other words, the company cannot exclude from its model any NGE that the board has guaranteed for future years, even if it could have otherwise excluded them, based on this subsection.

6. The liability for policyholder dividends declared but not yet paid that has been established according to statutory accounting principles as of the valuation date is reported separately from the statutory reserve. The policyholder dividends that give rise to this dividend liability as of the valuation date may or may not be included in the cash-flow model at the company's option.

   a. If the policyholder dividends that give rise to the dividend liability are not included in the cash-flow model, then no adjustment is needed to the resulting aggregate modeled (whether deterministic or stochastic) reserve.
   b. If the policyholder dividends that give rise to the dividend liability are included in the cash-flow model, then the resulting aggregate modeled (whether stochastic or deterministic) reserve should be reduced by the amount of the dividend liability.

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From VM-20, Section 8. Reinsurance

8.C Reflection of Reinsurance Cash Flows in the Deterministic Reserve or Stochastic Reserve

In calculations of the deterministic reserve or stochastic reserve pursuant to Section 4 and Section 5:

1. The company shall use assumptions and margins that are appropriate for each company pursuant to a reinsurance agreement. In such instance, the ceding and assuming companies are not required to use the same assumptions and margins for the reinsured policies.

2. To the extent that a single deterministic valuation assumption for risk factors associated with certain provisions of reinsurance agreements will not adequately capture the risk, the company shall do one of the following:

   a. Stochastically model the risk factors directly in the cash-flow model when calculating the stochastic reserve.

   b. Perform a separate stochastic analysis outside the cash-flow model to quantify the impact on reinsurance cash flows to and from the company. The company shall use the results of this analysis to adjust prudent estimate assumptions or to determine an amount to adjust the stochastic reserve to adequately make provision for the risks of the reinsurance features.

   Guidance Note: An example of reinsurance provisions where a single deterministic valuation assumption will not adequately capture the risk is stop- loss reinsurance.

3. The company shall determine cash flows for reinsurance ceded subject to the following:

   a. The company shall include the effect of projected cash flows received from or paid to assuming companies under the terms of ceded reinsurance agreements in the cash flows used in calculating the deterministic reserve in Section 4 and stochastic reserves in Section 5.

   b. If cash flows received from or paid to assuming companies under the terms of any reinsurance agreement are dependent upon cash flows received from or paid to assuming companies under other reinsurance agreements, the company shall first determine reinsurance cash flows for reinsurance agreements with no such dependency and then use the reinsurance cash flows from these independent agreements to determine reinsurance cash flows for the remaining dependent agreements.

   c. The company shall use assumptions to project cash flows to and from assuming companies that are consistent with other assumptions used by the company in calculating the deterministic or stochastic reserve for the reinsured policies and that reflect the terms of the reinsurance agreements.

4. The company shall determine cash flows for reinsurance assumed subject to the following:

   a. The company shall include the effect of cash flows projected to be received from and paid to ceding companies under the terms of assumed reinsurance

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agreements in the cash flows used in calculating the deterministic reserve in Section 4 and the stochastic reserve in Section 5.

b. If cash flows received from or paid to ceding companies under the terms of any reinsurance agreement are dependent upon cash flows received from or paid to ceding companies under other reinsurance agreements, the company shall first determine reinsurance cash flows for reinsurance agreements with no such dependency and then use the reinsurance cash flows from these independent agreements to determine reinsurance cash flows for the remaining dependent agreements.

5. If a company assumes a policy under more than one reinsurance agreement, then the company may treat each agreement separately for the purposes of calculating the reserve.

6. An assuming company shall use assumptions to project cash flows to and from ceding companies that reflect the assuming company's experience for the business segment to which the reinsured policies belong, and reflect the terms of the reinsurance agreement.

7. The company shall assume that the counterparties to a reinsurance agreement are knowledgeable about the contingencies involved in the agreement and likely to exercise the terms of the agreement to their respective advantage, taking into account the context of the agreement in the entire economic relationship between the parties. In setting assumptions for the NGE in reinsurance cash flows, the company shall include, but not be limited to, the following:

   a. The usual and customary practices associated with such agreements.

   b. Past practices by the parties concerning the changing of terms, in an economic environment similar to that projected.

   c. Any limits placed upon either party's ability to exercise contractual options in the reinsurance agreement.

   d. The ability of the direct-writing company to modify the terms of its policies in response to changes in reinsurance terms.

   e. Actions that might be taken by a party if the counterparty is in financial difficulty.

8. The company shall account for any actions that the ceding company and, if different, the direct-writing company have taken or are likely to take that could affect the expected cash flows of the reinsured business in determining assumptions for the modeled reserve.

> **Guidance Note:** Examples of actions the direct-writing company could take include: 1) instituting internal replacement programs or special underwriting programs, both of which could change expected mortality rates; or 2) changing NGE in the reinsured policies, which could affect mortality, policyholder behavior, and possibly expense and investment assumptions. Examples of actions the ceding company could take include: 1) the exercise of contractual options in a reinsurance agreement to influence the setting of NGEs in the reinsured policies; or 2) the ability to participate in claim decisions.

9. For actions taken by the ceding company, and, if different, the direct-writing company, set assumptions in a manner consistent with Section 9.D. Note that these assumptions

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are in addition to, rather than in lieu of, assumptions as to the behavior of the underlying policyholders.

10. The company shall use assumptions in determining the modeled reserve that account for any actions that the assuming company has taken or is likely to take that could affect the expected cash flows of the reinsured business.

> **Guidance Note:** Examples of such actions include, but are not limited to, changes to the current scale of reinsurance premiums and changes to expense allowances.

11. The company shall consider all elements of a reinsurance agreement that the assuming company can change, and assumptions for those elements are subject to the requirements in Section 7.C. Appropriate assumptions for these elements may depend on the scenario being tested. The company shall take into account all likely consequences of the assuming company changing an element of the reinsurance agreement, including any potential impact on the probability of recapture by the ceding company.

> **Guidance Note:** The ability of an assuming company to change elements of a reinsurance agreement, such as reinsurance premiums or expense allowances, may be thought of as comparable to the ability of a direct-writing company to change NGE on policies.

12. The company shall set assumptions in a manner consistent with Subsection 8.C.8, taking into account any ceding company option to recapture reinsured business. Appropriate assumptions may depend on the scenario being tested (analogous to interest-sensitive lapses).

> **Guidance Note:** The right of a ceding company to recapture is comparable to policyholder surrender options for a direct-writing company. Cash flows associated with recapture include recapture fees or other termination settlements.

13. The company shall set assumptions in a manner consistent with Subsection 8.C.10, taking into account an assuming company's right to terminate in-force reinsurance business. In the case in which the assuming company's right to terminate is limited to cases of non- payment of amounts due by the ceding company or other specific, limited circumstances, the company may assume that the termination option would be expected to have insignificant value to either party and, therefore, may exclude recognition of this right to terminate in the cash-flow projections. However, if a reinsurance agreement contains other termination provisions with material impact, the company shall set appropriate assumptions for these provisions consistent with the particular scenario being tested.

14. If under the terms of the reinsurance agreement, some of the assets supporting the reserve are held by the counterparty or by another party, the company shall:

    a. Consider the following in order to determine whether to model such assets for purposes of projecting cash flows:

        i. The degree of linkage between the portfolio performance and the calculation of the reinsurance cash flows.
        ii. The sensitivity of the valuation result to the asset portfolio performance.

    b. If the company concludes that modeling is unnecessary, document the testing and logic leading to that conclusion.

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c. If the company determines that modeling is necessary, comply with the requirements in Section 7.E and Section 9.F, taking into account:

i. The investment strategy of the company holding the assets, as codified in the reinsurance agreement or otherwise based on current documentation provided by that company.

ii. Actions that may be taken by either party that would affect the net reinsurance cash flows (e.g., a conscious decision to alter the investment strategy within the guidelines).

Guidance Note: In some situations, it may not be necessary to model the assets held by the other party. An example would be modeling by an assuming company of a reinsurance agreement containing provisions, such as experience refund provisions, under which the cash flows and effective investment return to the assuming company are the same under all scenarios.

Guidance Note: Special considerations for modified coinsurance: Although the modified coinsurance (ModCo) reserve is called a reserve, it is substantively different from other reserves. It is a fixed liability from the ceding company to the assuming company in an exact amount, rather than an estimate of a future obligation. The ModCo reserve is analogous to a deposit. This concept is clearer in the economically identical situation of funds withheld. Therefore, the value of the modified coinsurance reserve generally will not have to be determined by modeling. However, the projected ModCo interest may have to be modeled. In many cases, the ModCo interest is determined by the investment earnings of an underlying asset portfolio, which, in some cases, will be a segregated asset portfolio or in others the ceding company's general account. Some agreements may use a rate not tied to a specific portfolio.

15. If a ceding company has knowledge that an assuming company is financially impaired, the ceding company shall establish a margin for the risk of default by the assuming company. In the absence of knowledge that the assuming company is financially impaired, the ceding company is not required to establish a margin for the risk of default by the assuming company.

16. If an assuming company has knowledge that a ceding company is financially impaired, the assuming company shall establish a margin for the risk of default by the ceding company. Such margin may be reduced or eliminated if the assuming company has a right to terminate the reinsurance upon non-payment by the ceding company. In the absence of knowledge that a ceding company is financially impaired, the assuming company is not required to establish a margin for the risk of default by the ceding company.

17. In setting any margins required by Subsection 8.C.15 and Subsection 8.C.16 to reflect potential uncertainty regarding the receipt of cash flows from a counterparty, the company shall take into account the ratings, RBC ratio or other available information related to the probability of the risk of default by the counterparty, as well as any security or other factor limiting the impact on cash flows.

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