LIFE ACTUARIAL (A) TASK FORCE

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The Life Actuarial (A) Task Force met via conference call Dec. 3, 2020. The following Task Force members participated: Texas, Chair, represented by Mike Boerner and Rachel Hemphill (TX); Tynesia Dorsey, Vice Chair, represented by Peter Weber (OH); Jim L. Ridling represented by Steve Ostlund (AL); Ricardo Lara represented by Perry Kupferman (CA); Michael Conway represented by Wanchin Chou and Jim Jakielo (CT); Doug Ommen represented by Mike Yanacheak (IA); Robert H. Muriel represented by Bruce Sartain and Vincent Tsang (IL); Stephen W. Robertson represented by Karl Knable (IN); Vicki Schmidt represented by Nicole Boyd (KS); Grace Arnold represented by Fred Andersen and John Robinson (MN); Chlora Lindley-Myers represented by William Leung (MO); Bruce R. Ramge represented by Rhonda Ahrens (NE); Marlene Caride represented by Seong-min Eom (NJ); Russell Toal represented by Anna Krylova (NM); Linda A. Leclewel represented by Bill Carmello (NY); Glen Mulready represented by Andrew Schallhorn (OK); Tanji J. Northrup represented by Tomasz Serbinowski (UT); and Scott A. White represented by Craig Chupp (VA).


   The Task Force met Nov. 12, Nov. 5, Oct.29, Oct. 27, Oct. 22, Oct. 8, Oct. 1, Sept. 24 and Aug. 27. During these meetings, the Task Force took the following action: 1) adopted its Summer Meeting minutes; 2) adopted its 2021 proposed charges; 3) adopted the 2021 Generally Recognized Expense Tables (GRET); 4) adopted revisions to *Actuarial Guideline XLIX—The Application of the Life Illustrations Model Regulation to Policies with Index-Based Interest* (AG 49); 5) adopted changes to the *Standard Nonforfeiture Law for Individual Deferred Annuities* (#805); 6) adopted amendment proposal 2020-02, which clarifies guidance on the boundaries of a company’s latitude in following VM-20, Requirements for Principle-Based Reserves for Life Products, steps; 7) adopted amendment proposal 2020-03, which clarifies net premium reserve (NPR) calculation requirements; and 8) adopted amendment proposal 2020-09, which modifies the life principle-based reserving (PBR) exemption.

   Mr. Andersen made a motion, seconded by Mr. Chou, to adopt the Task Force’s Nov. 12 (Attachment One), Nov. 5 (Attachment Two), Oct. 29 (Attachment Three), Oct.27 (Attachment Four), Oct. 22 (Attachment Five), Oct. 8 (Attachment Six), Oct. 1 (Attachment Seven), Sept. 24 (Attachment Eight) and Aug. 27 (Attachment Nine) minutes. The motion passed unanimously.

2. **Adopted the Report of the Longevity Risk (E/A) Subgroup**

   Mr. Ostlund made a motion, seconded by Mr. Weber, to adopt the report of the Longevity Risk (E/A) Subgroup (Attachment Ten). The motion passed unanimously.

3. **Adopted the Report of the Guaranteed Issue (GI) Life Valuation (A) Subgroup**

   Mr. Ostlund made a motion, seconded by Mr. Weber, to adopt the report of the Guaranteed Issue (GI) Life Valuation (A) Subgroup (Attachment Eleven). The motion passed unanimously.

4. **Adopted the Report of the Experience Reporting (A) Subgroup**

   Mr. Ostlund made a motion, seconded by Mr. Weber, to adopt the report of the Experience Reporting (A) Subgroup (Attachment Twelve). The motion passed unanimously.

5. **Adopted the Report of the Indexed Universal Life (IUL) Illustration (A) Subgroup**

   Mr. Ostlund made a motion, seconded by Mr. Weber, to adopt the report of the Indexed Universal Life (IUL) Illustration (A) Subgroup (Attachment Thirteen). The motion passed unanimously.

6. **Adopted the Report of the Variable Annuities Capital and Reserve (E/A) Subgroup**

   Mr. Ostlund made a motion, seconded by Mr. Weber, to adopt the report of the Variable Annuities Capital and Reserve (E/A) Subgroup (Attachment Fourteen). The motion passed unanimously.
Draft Pending Adoption

7. **Adopted the Report of the Valuation Manual (VM)-22 (A) Subgroup**

Mr. Sartain said that during the Subgroup’s Sept. 29 meeting, Aaron Sarfatti (Equitable), who was heavily involved in the development of VM-21, Requirements for Principle-Based Reserves for Variable Annuities, advocated for the fixed annuity PBR framework using a standard projection amount (SPA) analogous to the SPA in VM-21.

Mr. Sartain said the American Academy of Actuaries’ (Academy) Annuity Reserve Work Group (ARWG) presented a slide deck titled “ARWG Preliminary Framework” during the Subgroup’s Oct. 28 and Oct. 26 meetings. He said the most critical aspect of the presentation was addressing the aggregation issue. The deck was exposed for a 45-day public comment period ending Dec. 14. Mr. Sartain said the ARWG has begun drafting a chapter for the *Valuation Manual* reflecting the concepts in the deck. He noted that during its Oct. 21 meeting, the Subgroup voted unanimously to recommend to the Task Force that the feasibility of developing an SPA analogous to that in VM-21 be explored. He said the determination of whether the proposed SPA might serve as either a floor or disclosure item will be made later.

Mr. Sartain said that in addition to the four meetings for which the minutes are provided, the Subgroup had an educational session in November. The session was led by Rick Hayes (Willis Towers Watson), a consultant for the ARWG. Mr. Hayes presented preliminary modeling results using the ARWG’s preliminary framework as guidance. The modeling focused on a generic fixed income annuity (FIA) product with guaranteed withdrawal benefits (GWBs). The modeling results showed numerical examples of reserves calculated under the ARWG preliminary framework. The modeling results are intended to assist those parties who are interested in commenting on the framework.

Mr Sartain made a motion, seconded by Mr. Leung, to adopt the report of the VM-22 (A) Subgroup, including its Oct. 28 (Attachment Fifteen), Oct. 26 (Attachment Sixteen), Oct. 21 (Attachment Seventeen) and Sept. 29 (Attachment Eighteen) minutes. The motion passed unanimously.

8. **Heard an Update from the Compact on its Activities**

Katie Campbell (Interstate Insurance Product Regulatory Commission—Compact) provided an update on the activities of the Compact. She said the Compact Management Committee plans to meet Dec. 4 to consider a proposed emergency rule, drafted at the request of Compact officers, to stay the effectiveness of Model #805, the revisions to which are expected to be adopted by the Executive (EX) Committee and Plenary next week. She said that without the stay of effectiveness, the uniform standard would require compliance with the revisions to Model #805 once NAIC adoption has been completed, regardless of whether the revisions have been passed by individual Compact states. She said the delay will be in effect for 120 days. During that period, the Product Standards Committee (PSC) will determine whether or how to implement the revised standard.

Ms. Campbell said a subgroup of the Actuarial Working Group is working on a standard for interim values for index-linked variable annuities (ILVAs), also known as registered indexed-linked annuities (RILAs), with a goal of having it available early in 2021. She said additional standards for waiver of monthly deductions, waiver of insurance premium and waiver of surrender charges are being referred to the Management Committee.

Ms. Campbell said the Compact has received 1,135 filings through Oct. 31, of which 1,074 have been approved. Those numbers are down 20% compared to last year. She said the average wait time for review of a filing is 20 days, compared to 33 days last year. The median number of states on a Compact filing is 43. The number of mix-and-match filings has continued to decrease and now comprises 21% of filings. She said 54% of the filings are for life products, 33% of the filings are for annuity products, and most of the remaining filings are for long-term care (LTC) and disability income. She said a filing information notice 2020-01, related to companies filing changes to the life insurance nonforfeiture interest rate, has been published.

Mr. Carmello asked if the Task Force should look at the interim value requirements for ILVAs. Mr. Weber, who chairs the Compact Interim Values Subgroup, said there is no existing regulatory framework for the product. He said the Subgroup is working to develop standards. He said he anticipates bringing those standards to the Task Force for its consideration. Mr. Carmello suggested that, in the future, the Task Force should take the lead on developing standards for new products.

9. **Heard an Update on SOA Research and Education**

Dale Hall (Society of Actuaries—SOA) gave a presentation (Attachment Nineteen) on U.S. data on mortality by socioeconomic group and updating the Task Force on SOA research efforts. He said the mortality study period covers years 1999 through 2018 and shows the growing disparities across socioeconomic groups. He said the disparities are also evident in mortality improvement data.

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Mr. Hall discussed other SOA research efforts, highlighting the recently completed SOA research study assessing the impact of COVID-19 on group life mortality. He said information on the impact of COVID-19 on individual life mortality will be available in spring 2021.

10. Heard an Update from the Academy LPC on its Recent Activities and 2021 Priorities

Laura Hanson (Academy Life Practice Council—LPC) gave a presentation (Attachment Twenty) on the LPC’s recent activities and its 2021 priorities. She said that in addition to the items listed as recent activities, the LPC is finalizing a letter to the Life Insurance and Annuities (A) Committee to raise awareness of the implications on underwriting and risk classification of some recent regulatory and legislative actions taken by a few states.

Ms. Hanson said the results of the asset adequacy testing survey and analysis will be presented early next year. She discussed the webinars and boot camps planned for 2021. She listed a few of the Academy efforts supporting its promotion of diversity and inclusion within the actuarial profession and in the broader insurance industry, including the NAIC initiatives related to race and insurance issues. She noted that the Academy is developing a policy statement on race and insurance issues.

11. Heard a Report on the Applicability of HIPAA Privacy and Security to the NAIC as Experience Reporting Agent

Dan Schelp (NAIC) addressed issues raised with respect to amendment proposal 2019-56 and the use of accelerated underwriting. He said the issue was raised as to whether the information collected in accordance with VM-50, Experience Reporting Requirements (VM-50), and VM-51, Experience Reporting Formats (VM-51), would be covered under the federal Health Insurance Portability and Accountability Act of 1996 (HIPAA). He said that after legal review by an outside counsel, it is not believed that the NAIC is subject to HIPAA confidentiality requirements in its role as experience reporting agent. He said the NAIC will continue to take the most conservative approach by developing a confidentiality framework that will provide protections, similar to those required by HIPAA, for the sensitive information it is collecting.

Mr. Schelp provided a brief discussion of the NAIC Legal Division’s review of this issue and the plan of action the NAIC will take as the Experience Reporting Agent to protect the confidentiality of this information going forward. He said VM-50 designates the NAIC as experience reporting agent. The requirements in VM-50 include guidance for the experience reporting process, the roles of the relevant parties, the intended use of and access to the experience data, and the process to protect the confidentiality of the data as outlined in the Standard Valuation Law (#820). He said VM-50 resulted from a long and detailed series of negotiations between the regulators and the insurance industry, with the highest consideration being given to the protection of confidential experience data. He said that, with that level of confidentiality at the forefront, VM-51 was drafted to guide the implementation of statistical plans used in the collection of the experience data. Under its current statistical plan, VM-51 contains 46 data elements to be collected from individual companies on an annual basis. These data elements contain confidential and individually identifiable information. The initial collection of this data was to begin in 2020 but was delayed for one year due to the COVID-19 pandemic.

Mr. Schelp explained that some insurers are currently using accelerated underwriting techniques as a substitute for requiring a physical examination by supplementing the application process with information obtained using new analytics and modeling techniques. Amendment proposal 2019-56 was submitted in response to the need to: 1) collect data that allows comparison of accelerated underwriting findings to existing underwriting techniques; 2) identify the variables that affect and differentiate mortality; and 3) allow for the development of industry mortality experience tables, which are more reflective of actual experience. He said that during the public exposure of amendment proposal 2019-56, industry expressed a new series of concerns as to whether the expanded collection of data caused increased confidentiality concerns under HIPAA. Mr. Schelp said that while amendment proposal 2019-56 would greatly increase the number of individual data elements to be collected, it would not change the nature of these data elements or increase the NAIC’s risks under HIPAA. He said the NAIC retained the Haynes Benefits law firm, a nationally known HIPAA consulting firm, to provide an overview of any HIPAA issues and guidance on how to best address these issues. He said that Haynes Benefits has worked with the NAIC on its own HIPAA-related issues for several years and has intimate knowledge of the NAIC data systems.

Mr. Schelp shared the specific guidance on the applicability of HIPAA to VM-51 provided by Haynes Benefit:

A. To be subject to HIPAA, the NAIC must either be a Covered Entity or a Business Associate. The types of data reported under VM-50 and VM-51 most likely will not be subject to HIPAA because the NAIC as the Experience Reporting Agent will not be either a Covered Entity or Business Associate.
B. There are 3 types of Covered Entities under HIPAA:
   (1) Health Plans;
   (2) Healthcare Clearinghouses; and
   (3) Healthcare providers that conduct certain types of transactions in electronic format.

C. The NAIC in its role as the Experience Reporting Agent is clearly not a Health Plan, which is defined as a plan that pays for the costs of health care.

D. The NAIC in its role as the Experience Reporting Agent is clearly not a Healthcare Provider, which is defined as a provider of medical or other services, or any entity that furnishes, bills, or is then paid for healthcare in the normal course of business. This definition includes, for example, physicians, pharmacies, nursing homes, etc. Clearly the NAIC in its role as Experience Reporting Agent is not a Healthcare Provider.

E. The NAIC in its role as the Experience Reporting Agent is clearly not a Healthcare Clearinghouse, which is defined as an entity that facilitates the processing of health information received from another entity. When HIPAA was enacted, Clearinghouses served the useful function of taking non-standard provider billings and converting them into claims to be presented to health carriers. The NAIC as the experience Reporting Agent will be collecting this information solely for underwriting and rating purposes, not for community health related concerns.

F. The NAIC in its role as the Experience Reporting Agent is not a Business Associate, which is defined as an entity that performs a function or activity on behalf of a Covered Entity and uses or discloses Protected Health Information in connection with that function. Actuarial and Data Aggregation are considered to be services that can make an entity a Business Associate. Haynes Benefits is of the opinion that the NAIC in its role as Experience Reporting Agent most likely will not be deemed a Business Associate.

Mr. Schelp said that while the NAIC is not a covered entity or business associate subject to HIPAA, on the remote chance that the NAIC may be found to be either a covered entity or a business associate, it has taken and will continue to maintain measures to make sure that the experience data will be secure and in compliance with both HIPAA and VM-50, including the provision of a Statement on Standards for Attestation Engagements (SSAE) 18 Service Organization Control (SOC) 2 audit report. He said the NAIC will work with Haynes Benefits to conduct a HIPAA risk analysis and prepare corresponding policies and procedures under VM-50. He noted that the NAIC has already entered into several agreements to assure the confidentiality of the experience data being requested, including entering into an Experience Reporting Agent Agreement with the Missouri Department of Commerce and Insurance (DCI), as well as implementing a click agreement for companies submitting data that incorporates the confidentiality provisions of VM-50.

12. **Adopted Amendment Proposal 2020-08**

Tim Cardinal (Cardinalis 1 Consulting) said the Valuation Manual allows either a top-down or bottom-up method of aggregating company mortality experience. He said these methods are limiting for a company with highly granular mortality assumptions, resulting in numerous segments with lower credibility. He said amendment proposal 2020-08 recommends a hybrid approach that uses the bottom-up approach to aggregate to an acceptable level of credibility, followed by application of the top-down approach to subdivide those segments. Brian Bayerle (American Council of Life Insurers—ACLI) said the ACLI comment letter (Attachment Twenty-One) questions whether the bottom-up approach, the top-down approach and the approach being recommended comprise the universe of possible aggregation approaches and requests that, sometime in the future, the Task Force consider replacing the language defining the requirements of the aggregation approaches with language that is less prescriptive and more principle-based language. Ms. Hemphill said aggregation is an area where company compliance is an issue. She expressed concern that the proposed method may cause more compliance issues but agrees that the proposed method should be allowed and supports Task Force adoption of the amendment proposal. In response to the ACLI comment, she said she does not consider the three methods prescriptive and said they should comprise the universe of approaches. Leonard Mangini (Academy) said the proposed approach fixes issues with the existing approaches and offers flexibility that captures the universe of approaches.

Mr. Weber made a motion, seconded by Mr. Leung, to adopt amendment proposal 2020-08 (Attachment Twenty-Two). The motion passed unanimously.
13. Exposed Amendment Proposal 2019-33

Mary Bahna-Nolan (Academy) said amendment proposal 2019-33 addresses policies that have rate structures and underwriting similar to individual policies but are filed under group life insurance contracts. She said the proposal recommends that the policies receive the same reserve treatment as individual policies. She noted that an earlier version of the amendment proposal included edits to VM-51. She said the references to VM-51 have been removed and will be considered in a different amendment proposal that specifically addresses experience reporting data elements. The change proposed by amendment proposal 2019-33 will be applicable to policies issued on or after Jan. 1, 2024 and is optional for such policies issued on or after the VM operative date but prior to Jan. 1, 2024. Mr. Sartain asked if the proposal’s long-term guarantee requirement should be a stand-alone criterion. Mr. Boerner suggested that Mr. Sartain submit his question during the public comment period. Mr. Carmello suggested that the criteria listed in the amendment proposal are not specific enough. He said that the requirements should be more prescriptive with perhaps fewer criteria.

Mr. Robinson made a motion, seconded by Mr. Leung, to expose amendment proposal 2019-33 (Attachment Twenty-Three) for a 60-day public comment period ending Feb. 4. The motion passed unanimously.

14. Exposed Amendment Proposal 2020-11

Ms. Hemphill said amendment proposal 2020-09 (see the Nov. 5 Task Force minutes), which the Task Force adopted previously, will be effective for the 2022 Valuation Manual. She said states could consider allowing a permitted practice for 2020 and 2021 if companies wish to use the exemption provided in the amendment. She said amendment proposal 2020-11 adds language that supports amendment proposal 2020-09 such that after 2021, an annual granting of a permitted practice for policies issued in 2020 and 2021 is not required.

Mr. Boerner said the exposure of amendment proposal 2020-11 will include the language of amendment proposal 2020-09.

Mr. Robinson said the language of 2020-09 should not reference Appendix VM-A and Appendix VM-C. Mr. Boerner suggested making a comment to that effect during the public comment period.

Mr. Leung made a motion, seconded by Mr. Chupp, to expose amendment proposal 2020-11 (Attachment Twenty-Four) for a 60-day public comment period ending Feb. 4. The motion passed unanimously.

15. Discussed Experience Reporting Time Lag

Ms. Bahna-Nolan said that the reprieve from experience data reporting requirements in 2020 has resulted in a slowing of the SOA industry mortality development process. She asked the Task Force to consider reducing the two-year time lag for experience reporting to a one-year time lag to help alleviate the slowdown. Mr. Boerner said the Task Force will work to expose the possibility of using a one-year time lag for public comment and discuss comments during a future meeting.

16. Discussed the ESG Implementation Timeline and Overview of Treasury Model

Pat Allison (NAIC) reviewed the implementation timeline for the economic scenario generator (ESG) (Attachment Twenty-Five). She noted that the first three milestones have been completed and reminded the audience that the presentation given to the Task Force and the Life Risk-Based Capital (E) Working Group on Oct. 27 is posted on the groups’ web pages. She said there is ongoing development work on both the NAIC’s and Conning’s website to allow access to prescribed scenarios, documentation, training materials and tools. State insurance regulators can obtain access to Conning’s full documentation related to the basic dataset by requesting it directly from Conning. Interested parties will be able to obtain access to the documentation but must first sign a nondisclosure agreement.

Ms. Allison noted that there will be a single field test, unless the field test results indicate that a second field test is warranted. She said the NAIC has models remaining from the Oliver Wyman work on the yearly renewable term (YRT) field test that can be used in the ESG field test. She said the field test is still being designed but is expected to include comparisons of reserves and capital produced by the Conning GEMS Treasury Model against those produced by the Academy interest rate generator.

Ms. Allison said milestone 21, the July 2021 Life Insurance and Annuities (A) Committee adoption of the ESG-related Valuation Manual amendments, is a critical milestone that cannot be moved and cannot be missed if the project is to meet its January 2022 implementation target date. Mr. Boerner said the timeline will be adjusted as needed.
Daniel Finn (Conning) shared a slide presentation (Attachment Twenty-Six) on the GEMS model. Mr. Finn noted that while the Academy interest rate generator (AIRG) uses one-year and 20-year maturities to fit the yield curve, the GEMS model uses the three-month maturity and two other maturity points selected as part of an optimization routine that minimizes the gap between the actual and fitted curves. Mr. Finn discussed the following set of goals and the related Task Force decisions:

1. **Goals relating to the yield curve shape:**

   a. The model’s starting yield curve should match the actual yield curve as closely as possible.
   b. The model should produce a variety of yield curve shapes, and they should change over time.
   c. Interest rates can be negative.

   **Task Force Decisions:**
   - How fast should the actual vs. fitted curve discrepancies disappear?
   - Should the model produce negative interest rates?
     * If so, how low should rates be allowed to go, and how frequently should negative rates occur?
     * If not, how absolute is this? Should there be a floor?

2. **Goals relating to interest rate mean reversion:**

   a. The model should be capable of producing a reasonable range of results for very long simulations.
   b. The ESG should be capable of producing low interest rates for an extended period of time.

   **Task Force Decisions:**
   - What is the mean reversion target, and what methodology will be used to determine it?
   - What mean reversion speed is desired?
   - How many low for long scenarios are desired?
   - What sensitivities should be tested prior to field testing, and how should they be determined?

3. **Goals relating to interest rate volatility:**

   a. The model should produce interest rate levels that fluctuate significantly over long periods.

   **Task Force Decision:** No decision needed.

4. **Other goals:**

   a. The interest rate generator should be arbitrage-free.
   b. The ESG should be calibrated using an appropriate historical period.

   **Task Force Decision:**
   - The GEMS model is arbitrage-free. However, if a floor is introduced, it will no longer be arbitrage-free.

The audio of the timeline discussion and the overview of the GEMS Treasury Model will be posted on the Related Documents tab of the Task Force page.

Having no further business, the Life Actuarial (A) Task Force adjourned.
The Life Actuarial (A) Task Force met Nov. 12, 2020. The following Task Force members participated: Texas, Chair, represented by Mike Boerner and Rachel Hemphill (TX); Tynesia Dorsey, Vice Chair, represented by Peter Weber (OH); Jim L. Ridling represented by Steve Ostlund (AL); Ricardo Lara represented by Ben Bock and Perry Kupferman (CA); Michael Conway represented by Eric Unger (CO); Andrew N. Mais represented by Wanchin Chou (CT); Doug Ommen represented by Mike Yanacheak (IA); Robert H. Muriel represented by Vincent Tsang (IL); Vicki Schmidt represented by Nicole Boyd (KS); Grace Arnold represented by Fred Andersen and John Robinson (MN); Chlora Lindley-Myers represented by William Leung (MO); Bruce R. Ramge represented by Rhonda Ahrens (NE); Marlene Caride represented by Kevin Clarkson (NJ); Russell Toal represented by Anna Krylova (NM); Linda A. Lacewell represented by Bill Carmello and Amanda Fenwick (NY); Glen Mulready represented by Andrew Schallhorn (OK); Tanji J. Northrup represented by Tomasz Serbinowski (UT); and Scott A. White represented by Craig Chupp (VA).

1. Exposed the “Criteria to Assess VM-20 Solutions for Modeling Non-Guaranteed YRT Reinsurance”

Scott O’Neal (NAIC) discussed the questions submitted by John Hancock (Attachment One-A) on the principle-based reserves (PBR) yearly renewable term (YRT) field study. In response to the first question, he said the graphs in the “YRT Field Test and Interpretation Survey – Results Analysis” document (Attachment One-B) provide the ranges of possible interpretations, which encompass the scenarios posed in John Hancock’s question.

Chris Whitney (Oliver Wyman) said the data used to produce the ranges of interpretations is provided in the appendix of the document. He said using that data would allow someone to repeat the range of interpretations using an alternative rate scale.

Catherine Murphy (John Hancock) said it is important to clarify that a company’s results might differ from the baseline scenario results when the company uses its own experience and credibility data.

Mr. Boerner suggested that the remaining John Hancock questions might be addressed during the discussion of the “Criteria to Assess VM-20 Solutions for Modeling Non-Guaranteed YRT Reinsurance” (Attachment One-C), which was developed by a drafting group of state insurance regulators. The document provides initial criteria that are expected to help state insurance regulators determine a long-term solution for the appropriate YRT reinsurance reserve credit for agreements subject to a PBR.

Mr. Robinson asked if the “Modeling Complexity” criteria mandates that the amendment proposal chosen as the final solution include a “safe harbor.”

Ms. Hemphill said the document lists potential criteria for the Task Force’s consideration. She indicated that the criteria are not set until Task Force approval is received.

Ms. Fenwick suggested the label should be changed to indicate that the scope of the document is limited to YRT reinsurance.

Mr. O’Neal said criterion #6 includes consideration to reverse the current VM-20, Requirements for Principle-Based Reserves for Life Products, prohibition of the ceding company’s use of mortality improvement beyond the valuation date to preclude it from becoming a primary driver of a reduction in the aggregate reserve.

Ms. Hemphill said discussions on the development of future mortality improvement rates that would be applied to the final blended mortality rates for VM-20 have been initiated with the Society of Actuaries (SOA). She anticipates that a proposal could be adopted for inclusion in the 2022 Valuation Manual. She said, if the application of future mortality improvement is allowed for ceding companies, continuing to use $\frac{1}{2} c_x$ for the reserve credit may be the appropriate long-term YRT reinsurance reserve credit solution.

Mr. Boerner asked if any Task Force members objected to exposing the “Criteria to Assess VM-20 Solutions for Modeling Non-Guaranteed YRT Reinsurance” for a 30-day public comment period ending Dec. 11. There was no objection to exposing the document.

Having no further business, the Life Actuarial (A) Task Force adjourned.

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Hi Reggie,

John Hancock appreciates the opportunity to ask questions on the PBR YRT Field Study Results published and discussed at the 2020 Summer NAIC meetings on Aug 3rd and 6th.

Please see below. We look forward to more discussions on this topic in the subsequent LATF calls.

1. As illustrated on page 16, OW had six representative PBR models reflecting different combinations of YRT rate scales and mortality credibility. Throughout the report, they compared results leveraging their “Baseline” model (YRT scale without FMI and high mortality credibility). How would the interpretation survey graphs look if the results were based on different PBR models, for e.g., the “YRT scale with FMI and high mortality credibility” model? Would it be beneficial to demonstrate and examine survey results based on alternate scenarios that could also be realistic, i.e. low/(high) YRT rates with high/(low) credibility?

2. Under a Principle-based reserving regime, we should expect a reasonable level of variability, reflecting different companies’ risk profiles and YRT treaties characteristics. What are the regulators’ criteria on the level of variability? How much “reasonable variability” is expected? How much is deemed as “excessive variability” that the regulators are looking to control or eliminate?

3. Page 8 shows a comparison of proposed solutions. Can regulators discuss how they would define success for the YRT long-term solution?

Thank you!

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LONG-TERM SOLUTION
(YRT & VM-20)

Results and analysis for field test and interpretation survey

August 2020

QUALIFICATIONS, ASSUMPTIONS, AND LIMITING CONDITIONS

Oliver Wyman was engaged by the American Council of Life Insurers, the American Academy of Actuaries and the National Association of Insurance Commissioners to support an industry field test being conducted to aid the NAIC Life Actuarial (A) Task Force in the selection of a long-term solution for the treatment of non-guaranteed reinsurance under PBR.

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Executive summary

OVERVIEW
This report contains results and additional analysis for the industry field test and interpretation survey which will aid the NAIC Life Actuarial (A) Task Force ("LATF") in the selection of a longer-term solution for the treatment of non-guaranteed reinsurance under PBR.

Education and analysis
- Prepared an initial report which focused on the design of a representative PBR model and initial insights gleaned.
- Produced a supplement to the initial report expanding analysis to cover an assuming reinsurer’s perspective.

Field test and interpretation survey
- Developed and co-administered survey covering interpretation of potential solutions.
- Assisted in the compilation and review of results for field test and interpretation survey.

Focus of report (and upcoming LATF meetings)
- Refined granularity in representative PBR model informed by responses to the field test.
- Performed additional analysis in representative PBR model to better understand results from field test and interpretation survey.

Education and analysis
- Compiled results of interpretation survey and performed additional analysis in light of the range of responses received.

Field test and interpretation survey
- Compiled results of field test submissions and identified drivers of variation across companies and potential solutions.

Initial education and support for industry field test

Following the delivery of this report, Oliver Wyman and NAIC staff are available to answer questions and perform additional analysis requested by LATF members to assist in decisions for the long-term treatment of non-guaranteed reinsurance under PBR.

REPORT OBJECTIVES

Section | Contents and objectives
--- | ---
02 Review of proposed solutions | Contains a description and representative language from the three amendment proposal forms ("APFs") evaluated in the field test and interpretation survey (APF 2019-40, 41 and 42).
| Objective is to review the key details of the solutions under consideration.

03 Field test results and analysis | Contains results of industry field test and additional analysis performed using representative PBR model to confirm the integrity of submissions and understand the range of variation in results.
| Objectives are to build understanding of field test scenarios and detail the refinements made to the representative PBR model informed by field test responses.

04 Interpretation survey results and additional analysis | Contains results of interpretation survey and additional analysis performed using representative PBR model in light of the range of responses received. Analysis includes both direct writers and reinsurers as well as the potential for asymmetries in reserves due to differences in interpretation and application of the APFs.
| Objectives are to provide a broader view of long-term solutions on a consistent basis (e.g., using the representative PBR model) from both a direct writer and assuming reinsurers perspective.
Executive summary

**KEY TAKEAWAYS**

Key takeaways from analysis of field test and interpretation survey results are highlighted below in addition to those previously established

<table>
<thead>
<tr>
<th>Takeaway</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reinsurer reaction scenarios can produce reserve credits in excess of ( \frac{1}{2} Cx )</td>
</tr>
<tr>
<td>2</td>
<td>It is important to look at long-term projections of reserves when evaluating the impact of reinsurance modeling approaches</td>
</tr>
<tr>
<td>3</td>
<td>Differences in reserve credits and assumed reserves under PBR are likely to occur for multiple reasons</td>
</tr>
<tr>
<td>4</td>
<td>Differences in modeled reserves are primarily driven by the relationship between the current scale of YRT premiums and PBR mortality (anticipated experience and the level of margin)</td>
</tr>
<tr>
<td>5</td>
<td>Variation in surveyed approaches points to several considerations including level of prescription, modeling complexity, variation in results and others in a long-term solution</td>
</tr>
<tr>
<td>6</td>
<td>Differences in ceded &quot;reserve credits&quot; and assumed reserves are minimized when a mechanical approach to reinsurance is used by both parties</td>
</tr>
</tbody>
</table>

Additional details for each key takeaway can be found in this report in the sections listed

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**COMPARISON OF PROPOSED SOLUTIONS**

This comparison is informed by results and analysis contained in this report

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Level of prescription</td>
<td></td>
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<tr>
<td>Modeling complexity</td>
<td></td>
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<tr>
<td>Variation in results</td>
<td></td>
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<tr>
<td>Potential for asymmetry between assumed and ceded interpretation</td>
<td></td>
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<tr>
<td>Defined level of risk sharing</td>
<td></td>
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<tr>
<td>Potential APF revisions</td>
<td></td>
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</tr>
</tbody>
</table>

1. Multiple mortality improvement scenarios were included with APF 2019-41 and 42

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REVIEW OF PROPOSED SOLUTIONS

YRT premiums

- Model YRT premiums using anticipated experience with margins based on clarified modeling principles/guidance and actuarial judgment

Representative language

The company shall base its company and counterparty action assumptions relating to YRT reinsurance consistent with the moderately adverse environment as applicable to the valuation of all life policyholders (APF 2019-40, Section 8.5)

The assuming company shall not be assumed to incur indefinite losses if treaty terms allow adjustment of the underlying economics (APF 2019-40, Section 8.7)

The company shall base its company and counterparty action assumptions relating to YRT reinsurance treaty changes reflecting that, in general, there is no relevant company or industry experience currently available upon which to base the anticipated experience assumption (APF 2019-40, Section 8.6)

Note: VM-20 Section 9.B.2 applies such that greater uncertainty in the anticipated experience requires a larger margin

Companies are responsible for developing their own margin used in the projection of future non-guaranteed reinsurance premiums
### YRT premiums and claims
- Premiums determined using **current YRT premium scale with projected adjustments** based on what the company actually expects will occur.
- Claims determined using the **company’s anticipated experience mortality** assumptions including mortality improvement.

### Representative language (APF 2019-41 section 8.C.8)
The company shall use best estimate assumptions with no implicit or explicit margins, except margins pursuant to Section 8.C.16 through Section 8.C.18, as the prudent estimate assumptions for YRT reinsurance premiums paid and YRT reinsurance Claim settlements received, using the following procedure:

a. Use the reinsurance rates and provisions from the relevant reinsurance agreement as the initial prudent estimate assumption for YRT reinsurance premiums paid, and project future reinsurance rate increases and recaptures using what the company actually expects will occur, based on treaty provisions, past reinsurance rate increase experience, and ongoing relationship with the reinsurer.

b. The mortality rates used to determine the prudent estimate assumptions for YRT reinsurance claim settlements shall equal the company’s anticipated experience assumptions adjusted to reflect the company’s best estimate of mortality improvement.

Non-guaranteed reinsurance premiums are based on the relationship between the current premium scale and the company’s anticipated experience mortality, with consideration for treaty provisions, historical rate increases and/or relationship with reinsurer.

### YRT premiums
- Use current YRT premium rates, plus a prescribed margin for non-guaranteed rates based on the difference between “baseline credibility” prudent estimate mortality and company experience mortality.
- Baseline credibility assumes a minimum level of credibility\(^1\) and sufficient data period to avoid bias against small companies.

### Reinsurance premium margin development
The formula for the prescribed margin (additive to current rates) from APF 2019-42 is summarized below:

\[
f(x) = \lambda \times (\text{anticipated experience assumption for YRT premium rates})
\]

\[
= \frac{(i - ii)}{ii} \times (\text{current YRT rate})
\]

\(i = \text{prudent estimate mortality calculated using a minimum of 80% credibility and a sufficient data period of at least 10 years} \)

\(ii = \text{company experience mortality reflecting industry mortality improvement beyond the valuation date} \)

Non-guaranteed reinsurance premiums are modeled as the current scale plus a margin, which is developed based on prescribed inputs, with some flexibility to make adjustments to reflect contract provisions.

---

\(^1\) Companies that have greater than the minimum credibility/SDP will use their own credibility, but companies with lower credibility/SDP will use the minimum.
03
FIELD TEST RESULTS AND ANALYSIS

OVERVIEW
Sophisticated modeling, extensive analysis and resource constraints led to low participation in the field test. However, participating companies are broadly distributed as highlighted below.

Submission requirements
• Compute point-in-time and projected reserves for Term and/or ULSG products, using the 2020 Valuation Manual with modifications to the treatment of non-guaranteed reinsurance
• Produce modeled results and detailed disclosures for two baseline runs and each proposed solution with modification per testing scenarios (see below)

Participation
187 entities invited to participate
11 participating entities
0 participating reinsurers
7 submissions for Term¹
8 submissions for ULSG²

Field test scenarios
Baseline
• Interim solution (½ Cx)
• No change to current YRT rates

2019-40
• Action A – No change in YRT rates and counterparty actions
• Action B – Prudent estimate YRT rates and counterparty actions
• Action C – Prudent estimate YRT rates after reaching a Loss Trigger
• Action D – Prudent estimate YRT rates after consecutive years of Loss Trigger

2019-41
• Anticipated experience mortality includes 15 years of future mortality improvement at rates of:
  — 0%, 0.5% and 1.0%

2019-42
• Anticipated experience mortality includes future mortality improvement for a specified number of years:
  — 5, 10, 15 and 20 years

¹. One Term submission and one ULSG submission did not include projected reserves
². Source: 2018 individual life insurance sales

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REFINEMENTS TO REPRESENTATIVE PBR MODEL

Field test submissions were used to refine the granularity of certain methodology analysis dimensions in the representative PBR model. The refined model was used to confirm the integrity of submissions and provide insights into the variability in results.

### Initial model design

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Field test submissions</th>
<th>Detailed refinements to representative PBR model</th>
</tr>
</thead>
</table>
| Reinsurance (Current YRT Scale) | • Utilized own company YRT rate scales  
• Relationship between current scale of YRT rates and anticipated mortality experience was examined based on information provided in field test submissions | • Developed three separate rate scales for each product based on analysis of field test submissions; the following relationships between the current scale of YRT rates and anticipated mortality experience were developed:  
  -- Baseline YRT scale: Current scale of YRT rates is in line with anticipated mortality experience excluding FMI  
  -- Lower YRT scale: Current scale of YRT rates is in line with anticipated mortality experience including FMI (i.e. utilizes declining durational multiples applied to “Baseline YRT scale”)  
  -- Higher YRT scale: Current scale of YRT rates is greater than anticipated mortality experience without FMI |
| Mortality (Credibility) | • Credibility of underlying mortality assumption ranged between 40–100% (See table on page 14 for further details) | • Developed two credibility scenarios based on analysis of field test responses:  
  -- High Credibility: 100% credibility (Limited Fluctuation method)  
  -- Low Credibility: 50% credibility (Limited Fluctuation method) |
| Reserves (Unlocking) | • Only one participant included unlocking of the mortality assumption (sufficient data period, credibility and improvement) up to future valuation dates | • Turned off dynamic assumption unlocking |

### Properties of reinsurance

**Observation:** Submissions reflected a range of underlying YRT reinsurance parameters; in particular the portion of business reinsured and the relationship between the current scale of rates and anticipated mortality.

**Model refinements:**
- Normalize reinsurance reserve credits per 1,000 of ceded NAAR.
- Adjust YRT rate scales to reflect key relationships observed in participant submissions.

### Mortality

**Observation:** Submissions reflect a range of anticipated mortality experience assumptions and underlying levels of credibility.

**Model refinements:**
- Model YRT scales based on relationships to anticipated mortality experience observed in field test submissions.
- Utilize two credibility scenarios in representative PBR model, reflecting the range in levels of credibility observed in field test submissions.

### Reserves

**Observation:** A majority of submissions (all but one participant) did not reflect unlocking of mortality up to future valuation dates in their reserve projections.

**Model refinements:**
- Turn off mortality assumption unlocking.
**BASELINE | ULSG RESULTS**

The representative PBR model explains the variance in impacts of reinsurance on modeled reserves observed in field test submissions

3.1 Gross DR – Net DR (per 1000 of projected ceded NAAR)
No change to YRT rates

![Graph showing Gross DR – Net DR (per 1000 of projected ceded NAAR) for No change to YRT rates]

**Commentary**
- Shaded blue range represents the range combinations of rate scales and levels of credibility (all else equal)
- Upper bound of results (largest “reserve credit”) from representative PBR model is “Lower YRT scale” with low credibility; lower bound is “Higher YRT scale” with high credibility (negative “reserve credit”)
- Mid-point of results from representative PBR model is “Baseline YRT scale” with high credibility (dark blue line)

Derivations of the unitized reduction to DR can be found in Appendix A

3.2 Gross DR – Net DR (per 1000 of projected ceded NAAR)
1/2 Cx

![Graph showing Gross DR – Net DR (per 1000 of projected ceded NAAR) for 1/2 Cx]

**Field test results legend**
- 25th percentile (Field test)
- 75th percentile (Field test)
- Coverage range (Representative PBR model)
- “Baseline YRT scale” with high credibility

**Commentary**
- Deviation driven primarily by attained age and issue month
- Lower bound = 1/2 Cx
- Upper bound = 1/24 Cx
- Derivations of the unitized reduction to DR can be found in Appendix A

**APF 2019-40 (ACTION A) | ULSG RESULTS**

Action A produces only a slight shift in the impact of reinsurance on modeled reserves relative to the baseline, as it is limited to the inclusion of anticipated counterparty actions such as default, recapture and other terminations

3.3 Gross DR – Net DR (per 1000 of projected ceded NAAR)
No change to YRT rates

![Graph showing Gross DR – Net DR (per 1000 of projected ceded NAAR) for No change to YRT rates]

**Commentary**
- Action A is to model current YRT rates for all projection years; apply the APF only with regards to other counterparty actions such as default, recapture or other terminations
- Range of results is wider compared to other field test scenarios, as there are no adjustments to YRT rates
- Representative PBR model results (“Baseline YRT scale” line and analysis coverage range) assumes no counterparty reactions for Action A and therefore results are the same as the baseline
- Some field test results reflected recapture in later years which reduced reserve credits in later durations

Field test results and analysis

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**APF 2019-40 (ACTION B) | ULSG RESULTS**

The impact of reinsurance on modeled reserves is dependent on the range of participant prudent estimates used in modeling counterparty actions.

3.5 Gross DR – Net DR (per 1000 of projected ceded NAAR)

No change to YRT rates

![Graph showing Gross DR – Net DR](image)

**Commentary**

- Action B is to model a prudent estimate of all counterparty actions (which includes changes to YRT rates); apply the APF with no additional restrictions or guidance.
- The representative PBR model includes a margin to reinsurance premiums equal to the difference between best estimate mortality (including future mortality improvement) and valuation mortality.
- Various approaches in field test submissions to incorporate margins to YRT premiums were observed, resulting in higher DR “reserve credits” compared to the representative PBR model. Approaches included grading to an increased premium over time, increasing premiums after a certain duration, and increasing premiums after a loss ratio is triggered.

3.6 Gross DR – Net DR (per 1000 of projected ceded NAAR)

Action B

![Graph showing Gross DR – Net DR](image)

**APF 2019-40 (ACTION C) | ULSG RESULTS**

Applying a “loss ratio” trigger to determine the timing of reinsurer reaction leads to a narrower range of DR reserve credits relative to the baseline but may be inconsistent with contractual terms.

3.7 Gross DR – Net DR (per 1000 of projected ceded NAAR)

No change to YRT rates

![Graph showing Gross DR – Net DR](image)

**Commentary**

- Action C is to model a prudent estimate of rate changes only after reaching a “loss ratio” trigger equal to 115%. The loss ratio is calculated by reviewing cumulative projected reinsurance cash flows from the assuming company perspective.
- In the representative PBR model, margins were applied based on the difference between the valuation mortality and best estimate mortality after reaching the loss ratio trigger.
- The “loss ratio” trigger is reached earlier in the projection for “Lower YRT scale” (upper bound) compared to “Baseline YRT scale” and the trigger is never reached for the “Higher YRT scale” (lower bound).
- The lower bound of the coverage range is similar compared to the baseline, but upper bound is substantially reduced.
APF 2019-40 (ACTION D) | ULSG RESULTS

Applying a "consecutive losses" approach to determine the timing of reinsurer reaction reduces variability in the impact that reinsurance has on modeled reserves relative to the baseline, albeit to a lesser extent than the application of a "loss ratio" trigger.

3.9 Gross DR – Net DR (per 1000 of projected ceded NAAR)
No change to YRT rates

3.10 Gross DR – Net DR (per 1000 of projected ceded NAAR)
Action D

Commentary

- Action D is to model prudent estimate of rate changes only after reaching "consecutive years of loss" trigger equal to 5 years. The losses are calculated by reviewing annual projected reinsurance cash flows from the assuming company perspective.
- Similar to Action C, application of prudent estimates are driven by the relationship between YRT rates and valuation mortality during the projection.
- Prudent estimate margins are not applied ubiquitously, therefore the results are less dependent on the relationship of current YRT rates and valuation mortality compared to other solutions.

APF 2019-41 | ULSG RESULTS

Introducing future mortality improvement to the projected claims reduces reinsurance gains, given the current scale of reinsurance premiums is held constant.

3.11 Gross DR – Net DR (per 1000 of projected ceded NAAR)
0.0% FMI

3.12 Gross DR – Net DR (per 1000 of projected ceded NAAR)
0.5% FMI

3.13 Gross DR – Net DR (per 1000 of projected ceded NAAR)
1.0% FMI

Commentary

- Variation in YRT rate scales and credibility impact results in a similar manner.
- Mortality improvement is applied for 15 years.
- 50bps of incremental mortality improvement reduces the DR "reserve credit" to close to zero in initial projection years for the "Baseline YRT scale".
- The representative PBR model included margins in addition to YRT premiums as a modeling simplification rather than a pure interpretation of the APF.
### APF 2019-42 | ULSG RESULTS

Similar to APF 2019-41, increasing the level of future mortality improvement decreases reserve credits

<table>
<thead>
<tr>
<th>3.14 Gross DR – Net DR (per 1000 of projected ceded NAAR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 years FMI</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3.15 Gross DR – Net DR (per 1000 of projected ceded NAAR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 years FMI</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3.16 Gross DR – Net DR (per 1000 of projected ceded NAAR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 years FMI</td>
</tr>
</tbody>
</table>

### Commentary

- APF 2019-41 and APF 2019-42 produce similar results, with main variations driven by the application of mortality improvement (magnitude and length)
- 5-years of incremental mortality improvement reduces the DR “reserve credit” by roughly 50% (relative to DR “reserve credit” with no future mortality improvement)
- When a margin is defined as the relationship between anticipated experience and best estimate mortality, “Higher YRT rate scales” lead to negative reserve credits

### KEY TAKEAWAYS

Additional key takeaways from analysis of field test results are highlighted below in addition to those previously established

<table>
<thead>
<tr>
<th>Takeaway</th>
<th>Details</th>
</tr>
</thead>
</table>
| 1 | Reinsurer reaction scenarios can produce reserve credits in excess of \( \frac{1}{2} \text{Cx} \)  
  - \( \frac{1}{2} \text{Cx} \) represents the cost of reinsurance that corresponds to the period for which the reinsurance premium has been paid, but not yet earned by the reinsurer, with no provision for reinsurance beyond the paid to date  
  - Full reinsurer reaction scenarios tested allow for  

| 2 | It is important to look at long-term projections of reserves when evaluating the impact of reinsurance modeling approaches  
  - The level of margin in mortality as compared to best estimate changes at future valuation dates, due to unlocking of mortality improvement and extending the sufficient data period  
  - As the business ages, higher mortality and shorter projection horizons will change the impact of reinsurance on reserves at future valuation dates  |
| 3 | Differences in reserve credits and assumed reserves under PBR are likely to occur for multiple reasons  
  - Reserves between direct writers and reinsurers will not be mirrored, primarily due to differences in valuation assumptions (including changes to non-guaranteed YRT premiums)  
  - Other drivers include the mechanics of computing final PBR reserves, and reinsurers aggregating results across multiple treaties and multiple cedants  
  - Differences between ceded and assumed reserves are reduced when adjustments to YRT premiums are based on the level of mortality margin specific to each party  |
| 4 | Differences in modeled reserves are primarily driven by the relationship between the current scale of YRT premiums and PBR mortality (anticipated experience and the level of margin)  
  - Observed differences in the relationship between the current scale of reinsurance premiums and anticipated mortality as well as the level of mortality margin explain the degree of variability in impacts of reinsurance on modeled reserves across field test participants  
  - The prescription of triggers (APF 2019-40) and levels of future mortality improvement (APF 2019-41 and 2019-42) reduce differences between the scale of reinsurance premiums and mortality and can be thought of as mechanisms which can be used to define the level of risk shared between parties in the modeled reserve  
  - Triggers based on measures of loss to the reinsurer (i.e. “Loss ratio” and “Consecutive years of loss” trigger) serve to align projected reinsurance premiums with mortality, reducing the degree of variability in impacts of reinsurance on modeled reserves across companies  
  - When reinsurance premium margins are based on the level of mortality margin, the application of future mortality improvement to anticipated experience increases the reinsurance premium margin and decreases reinsurance reserve credits  
  - Adjusting the level of risk sharing through triggers or mortality improvement allow potential for deviation from company practice and/or contractual agreements  |
INTERPRETATION SURVEY RESULTS AND ADDITIONAL ANALYSIS

BACKGROUND AND PURPOSE
The interpretation survey asked participants to detail how they would implement each of the proposed solutions.

**Survey purpose**
- Poll companies on the modeling approach they would use to implement APFs 2019-40, 2019-41, and 2019-42
- Supplement and broaden range of practice outside of the participation of field test responses

**High level description of questions**
- Several options were provided for projecting changes to YRT rates. Participants were asked to select the option that best fits their intended approach. Options included:
  - No change to YRT premiums
  - Increasing rates by a specified amount of the prescribed mortality margin after a specified period of time and every X years thereafter, with and without future mortality improvement
  - Increasing rates by the difference between current scale and prudent estimate (i.e. PBR) mortality, with specified parameters
- Collected separate responses for different treatment by treaty type

**Survey usage**
- We used the results of the survey to develop criteria to compare the APFs
  - Refer to slide 41 for additional detail on comparison criteria

**Survey covered approximately 55% of the industry measured by total face amount on new business**

51 RESPONSES from legal entities spanning 36 separate direct writers and reinsurers
### SUMMARY OF OPTIONS

For each group of reinsurance agreements, participants were asked to provide standardized responses on how YRT premium rates would be adjusted based on language presented in each proposal.

<table>
<thead>
<tr>
<th>Survey option</th>
<th>Reinsurer reaction</th>
<th>Assumption for projected YRT premium rate increases</th>
<th>Parameters requested</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>None</td>
<td>Maintain current scale throughout the projection</td>
<td>N/A</td>
</tr>
</tbody>
</table>
| 2             | Reactive          | Increase by percent of prescribed mortality margin where the prescribed mortality margin is defined as:  
- Prescribed margins on company and industry mortality  
- Grading from company to industry experience, and  
- Future mortality improvement (“FMI”), incorporated as follows:  
  - Including implicit FMI margin (option 2)  
  - Excluding implicit FMI margin (option 3)  
  - Including implicit FMI margin after a specified number of years by applying improvement for an initial period and then no improvement beyond (option 4)  | Frequency of rate changes  
  - Initial trigger  
  - Mortality improvement |
| 3             | Break-even        | Increase by percent of difference between PBR mortality and current scale of YRT rates | Frequency of rate changes  
  - Initial trigger |
| 4             | Other             | Modeling approach not adequately captured by other choices | Open-ended response |

### APF 2019-40 | SURVEY RESULTS

#### Reinsurer reaction

- **None** 19%
- **Reactive** 40%
- **Break-even** 25%
- **Other** 16%

#### Modeling approaches illustrated

- **Increase YRT premiums by**
  - 100% of the difference between current YRT premium and prescribed mortality immediately and every year thereafter
- **Increase YRT premiums by**
  - 100% of prescribed mortality margin after 1 year and every year thereafter
  - Include implicit future mortality improvement margin

#### SURVEY COMMENTARY

- **Range of responses**
  - APF with largest variance across survey options
  - Largest percentage selecting “Other”
    - Examples: recapture at certain periods, utilize a loss trigger to determine when rates are raised, grading into a prudent estimate rate over a period of time
- **Complexity**
  - Responses ranged from straightforward (reactive or break-even) to complex
  - Complex responses were often associated with None and Other and tended to reflect modeling solutions used for other applications or adjustments to cash flows other than YRT premiums
**APF 2019-40 | ULSG**

A fully reactive reinsurance margin produces the largest post-reinsurance DR relative to other options

4.1 Pre-reinsurance DR (projected reserve amount)
High credibility

4.2 Post-reinsurance DR (projected reserve amount)
"Baseline YRT scale" and high credibility

4.3 Pre-reinsurance DR – Post-reinsurance DR (projected reserve amount)
"Baseline YRT scale" and high credibility

- Pre-reinsurance DR
- NPR (gross and net)
- No change in rates (option 1)
- Fully reactive after 1 year (option 2)
- Break even after 1 year (option 5)
- 1/2 Cx

**APF 2019-40 | TERM**

No change in rates scenario produces the highest modeled “reserve credit” for Term but is smaller than ½ cx for most valuation dates due to a higher baseline YRT scale than ULSG

4.4 Pre-reinsurance DR (projected reserve amount)
High credibility

4.5 Post-reinsurance DR (projected reserve amount)
"Baseline YRT scale" and high credibility

4.6 Pre-reinsurance DR – Post-reinsurance DR (projected reserve amount)
"Baseline YRT scale" and high credibility

- Pre-reinsurance DR
- NPR (gross and net)
- No change in rates (option 1)
- Fully reactive after 1 year (option 2)
- Break even after 1 year (option 5)
- 1/2 Cx
Reinsurer reaction

<table>
<thead>
<tr>
<th>Reaction</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>55%</td>
</tr>
<tr>
<td>Reactive</td>
<td>17%</td>
</tr>
<tr>
<td>Break-even</td>
<td>18%</td>
</tr>
<tr>
<td>Other</td>
<td>10%</td>
</tr>
</tbody>
</table>

**Modeling approaches illustrated**

- Reinsurance cash flows (premiums and claims) projected separately using best estimate mortality including future mortality improvement
- Increase YRT premiums by
  - 100% of the difference between current YRT premium and prescribed mortality immediately and each year thereafter

**SURVEY COMMENTARY**

**Range of responses**

- Most responses were either None or Break-even
- These responses generally included a comment regarding intent to adjust claims in lieu of premiums

**Complexity**

- Many responses indicated the need for multiple models or model runs to apply this APF to reflect best estimate mortality for reinsurance cash flows and VM-20 mortality for all other cash flows
- Some respondents expressed concern with consistency between using one projection using prudent estimate assumptions and a separate one using best estimate assumptions

**APF 2019-41 | ULSG**

The relationship between YRT rates and anticipated mortality minimizes the impact of interpretation differences. This is because Option 1 uses anticipated experience assumptions, and reinsurance premiums are closely aligned with benefits (nearly break-even) and reinsurance is break-even under Option 5.

**4.7 Pre-reinsurance DR (projected reserve amount)**

The current scale of YRT rates is in line with anticipated mortality experience in the “Baseline YRT scale”.

**4.8 Post-reinsurance DR (projected reserve amount)**

“Baseline YRT scale” and high credibility

**4.9 Pre-reinsurance DR – Post-reinsurance DR (projected reserve amount)**

“Baseline YRT scale” and high credibility

- Pre-reinsurance DR
- NPR (gross and net)
- No change in rates (option 1)
- Break even after 1 year (option 5)
- 1/2 Cx
**APF 2019-41 | TERM**

Similar to ULSG, the no change in rate scenario produces the largest “reserve credit”, but it is considerably smaller than for ULSG and ½ Cx

4.10 Pre-reinsurance DR (projected reserve amount)

*High credibility*

4.11 Post-reinsurance DR (projected reserve amount)

*“Baseline YRT scale” and high credibility*

4.12 Pre-reinsurance DR – Post-reinsurance DR (projected reserve amount)

*“Baseline YRT scale” and high credibility*

---

**APF 2019-42 | SURVEY RESULTS**

**Reinsurer reaction**

<table>
<thead>
<tr>
<th>Reaction</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>1%</td>
</tr>
<tr>
<td>Reactive</td>
<td>64%</td>
</tr>
<tr>
<td>Break-even</td>
<td>29%</td>
</tr>
<tr>
<td>Other</td>
<td>6%</td>
</tr>
</tbody>
</table>

**Survey Commentary**

**Range of responses**

- Most responses were reactive and incorporate 100% of the prescribed margin
- Variation in reactive responses was the number of years of mortality improvement included in the margin

**Modeling approaches illustrated**

- Increase YRT premiums by
  - 100% of prescribed mortality margin after 1 year and every year thereafter
  - Include implicit future mortality improvement margin
  - 100% of the difference between current YRT premium and prescribed mortality immediately and each year thereafter
- Include 10 years of future mortality improvement in implicit margin

**Complexity**

- Some responses pointed out that the prescribed solution will require a company to develop multiple sets of mortality assumptions to determine the prescribed margin
- Given that over 35% of responses were something other than a reactive margin, the prescribed margin formula may be difficult to interpret and understand
**APF 2019-42 | ULSG**

Reducing the amount of implicit margin due to future mortality improvement in the development of the prescribed mortality margin decreases the net DR and increases the “reserve credit”

4.13 Pre-reinsurance DR (projected reserve amount)
High credibility

4.14 Post-reinsurance DR (projected reserve amount)
“Baseline YRT scale” and high credibility

4.15 Pre-reinsurance DR – Post-reinsurance DR (projected reserve amount)
“Baseline YRT scale” and high credibility

- Pre-reinsurance DR
- NPR (gross and net)
  - Fully reactive after 1 year (option 2)
  - Fully reactive after 1 year, including 10 yr MI (option 4)
  - Break even after 1 year (option 5)
- 1/2 Cx

**APF 2019-42 | TERM**

Reducing the amount of implicit margin due to future mortality improvement in the development of the prescribed mortality margin decreases the net DR and increases the “reserve credit”

4.16 Pre-reinsurance DR (projected reserve amount)
High credibility

4.17 Post-reinsurance DR (projected reserve amount)
“Baseline YRT scale” and high credibility

4.18 Pre-reinsurance DR – Post-reinsurance DR (projected reserve amount)
“Baseline YRT scale” and high credibility

- Pre-reinsurance DR
- NPR (gross and net)
  - Fully reactive after 1 year (option 2)
  - Fully reactive after 1 year, including 10 yr MI (option 4)
  - Break even after 1 year (option 5)
- 1/2 Cx
**IMPACT ON DR RELATIVE TO INTERIM SOLUTION (ULSG)**
DR “reserve credit” from preceding slides with all APFs displayed on the same page

4.19 Pre-reinsurance DR – Post-reinsurance DR (projected reserve amount)
2019-40 “Baseline YRT scale” and high credibility

4.20 Pre-reinsurance DR – Post-reinsurance DR (projected reserve amount)
2019-41 “Baseline YRT scale” and high credibility

4.21 Pre-reinsurance DR – Post-reinsurance DR (projected reserve amount)
2019-42 “Baseline YRT scale” and high credibility

- No change in rates (option 1)
- Fully reactive after 1 year (option 2)
- Fully reactive after 1 year, including 10 yr MI (option 4)
- Break even after 1 year (option 5)
- 1/2 Cx

**IMPACT ON DR RELATIVE TO INTERIM SOLUTION (TERM)**
DR “reserve credit” from preceding slides with all APFs displayed on the same page

4.22 Pre-reinsurance DR – Post-reinsurance DR
2019-40 “Baseline YRT scale” and high credibility

4.23 Pre-reinsurance DR – Post-reinsurance DR
2019-41 “Baseline YRT scale” and high credibility

4.24 Pre-reinsurance DR – Post-reinsurance DR
2019-42 “Baseline YRT scale” and high credibility

- No change in rates (option 1)
- Fully reactive after 1 year (option 2)
- Fully reactive after 1 year, including 10 yr MI (option 4)
- Break even after 1 year (option 5)
- 1/2 Cx
KEY TAKEAWAYS
Additional key takeaways from analysis of range of interpretation survey results are highlighted below in addition to those previously established

<table>
<thead>
<tr>
<th>Takeaway</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td>Reinsurer reaction scenarios can produce reserve credits in excess of ½ Cx</td>
</tr>
<tr>
<td></td>
<td>• ½ Cx represents the cost of reinsurance that corresponds to the period for which the reinsurance premium has been paid, but not yet earned by the reinsurer, with no provision for reinsurance beyond the paid to date</td>
</tr>
<tr>
<td></td>
<td>• Full reinsurer reaction scenarios tested allow for</td>
</tr>
<tr>
<td></td>
<td>– Differences between evolution of mortality and reinsurance premium payment dates, contractual provisions around return of unearned reinsurance premium and other mechanical differences due to VM-20 requirements (e.g., differences in starting assets and resulting earned rate)</td>
</tr>
<tr>
<td><strong>2</strong></td>
<td>It is important to look at long-term projections of reserves when evaluating the impact of reinsurance modeling approaches</td>
</tr>
<tr>
<td></td>
<td>• The level of margin in mortality as compared to best estimate changes at future valuation dates, due to unlocking of mortality improvement and extending the sufficient data period</td>
</tr>
<tr>
<td></td>
<td>• As the business ages, higher mortality and shorter projection horizons will change the impact of reinsurance on reserves at future valuation dates</td>
</tr>
<tr>
<td><strong>3</strong></td>
<td>Differences in reserve credits and assumed reserves under PBR are likely to occur for multiple reasons</td>
</tr>
<tr>
<td></td>
<td>• Reserves between direct writers and reinsurers will not be mirrored, primarily due to differences in valuation assumptions (including changes to non-guaranteed YRT premiums)</td>
</tr>
<tr>
<td></td>
<td>• Other drivers include the mechanics of computing final PBR reserves, and reinsurers aggregating results across multiple treaties and multiple cedants</td>
</tr>
<tr>
<td></td>
<td>• Differences between ceded and assumed reserves are reduced when adjustments to YRT premiums are based on the level of mortality margin specific to each party</td>
</tr>
<tr>
<td><strong>4</strong></td>
<td>Differences in modeled reserves are primarily driven by the relationship between the current scale of YRT premiums and PBR mortality (anticipated experience and the level of margin)</td>
</tr>
<tr>
<td></td>
<td>• Observed differences in the relationship between the current scale of reinsurance premiums and anticipated mortality as well as the level of mortality margin explain the degree of variability in impacts of reinsurance on modeled reserves across field test participants</td>
</tr>
<tr>
<td></td>
<td>• The prescription of triggers (APF 2019-40) and levels of future mortality improvement (APF 2019-41 and 2019-42) reduce differences between the scale of reinsurance premiums and mortality and can be thought of as mechanisms which can be used to define the level of risk shared between parties in the modeled reserve</td>
</tr>
<tr>
<td><strong>5</strong></td>
<td>Variation in surveyed approaches points to several considerations including level of prescription, modeling complexity, variation in results and others in a long-term solution</td>
</tr>
<tr>
<td></td>
<td>• APF 2019-42 has the highest level of prescription. APF 2019-40 allows for more flexibility; however, measures to reduce the variation in results (e.g., “loss ratio” trigger) add additional prescription.</td>
</tr>
<tr>
<td></td>
<td>• APF 2019-41 has the most complexity (modeling and theoretical) as it requires projecting YRT premium and claim settlement cashflows using a separate mortality assumption</td>
</tr>
<tr>
<td></td>
<td>• APF 2019-40 has the widest variation in modeled range of interpretation “reserve credits” primarily due to survey respondents modeling no change to their current scale. APF 2019-41 has the smallest variation in modeled “reserve credits” but could have larger variations in practice due differences in model implementation.</td>
</tr>
</tbody>
</table>

EVALUATION OF TOTAL IMPACT ON DR (CEDED AND ASSUMED)
Most common responses and responses resulting in the largest reduction in aggregate DR from reinsurers and direct writers were compared, removing impact of ancillary differences between reserve credits and assumed reserves driven by assumptions for modeled reserves and PBR methodology

Drivers of differences in reserve credits and assumed reserves

<table>
<thead>
<tr>
<th>01</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation: Differences in assumptions between cedant and assuming perspective for modeled reserves are the primary driver of differences between reserve credits and assumed reserves</td>
<td></td>
</tr>
<tr>
<td>Analytical adjustment: Use consistent assumptions for both perspectives to isolate the impact of interpretation in regards to the treatment of non-guaranteed reinsurance</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>02</th>
<th>PBR calculation methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation from prior analysis: Differences in assumed reserve compared to reserve credit can be driven by PBR methodology and asymmetries caused by the formulaic floor on reserves (i.e. NPR)</td>
<td></td>
</tr>
<tr>
<td>Analytical adjustment: Analysis focused on the impact of reinsurance on the DR to remove potential impacts driven by asymmetries caused by the NPR floor</td>
<td></td>
</tr>
</tbody>
</table>

Assumed reserves in the following slides are developed using the ceded pre and post reinsurance DR, an approach which captures reinsurance cash flows in determining the assumed reserve with some simplification (i.e., excludes reinsurers expenses and uses ceding company asset assumptions)
**APF 2019-40 | Ceded and Assumed**

Combined impact to DR from both ceding and assuming companies for the most common surveyed reactions is positive; combinations of other surveyed reactions could lead to a reduction in total DR

### Reinsurer reaction – Ceding company

<table>
<thead>
<tr>
<th>Reaction</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>18%</td>
</tr>
<tr>
<td>Reactive</td>
<td>42%</td>
</tr>
<tr>
<td>Break-even</td>
<td>22%</td>
</tr>
<tr>
<td>Other</td>
<td>17%</td>
</tr>
</tbody>
</table>

### Reinsurer reaction – Assuming company

<table>
<thead>
<tr>
<th>Reaction</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>20%</td>
</tr>
<tr>
<td>Reactive</td>
<td>20%</td>
</tr>
<tr>
<td>Break-even</td>
<td>60%</td>
</tr>
<tr>
<td>Other</td>
<td>0%</td>
</tr>
</tbody>
</table>

### Commentary

- Differences in modeling approach result in differences between reserve credit and assumed reserve
- Some assuming companies noted that they may raise their rates to more than 100% of difference between current YRT premiums and VM-20 mortality to cover expenses and contribute to profit margin, which decreases the assuming reserves displayed in 4.25 and increases the likelihood that the NPR will dominate (i.e. ½ Cx)
- Largest reduction to aggregate reserves based on responses is driven by direct writers applying no prudence to YRT premiums

**APF 2019-41 | Ceded and Assumed**

Impact of reinsurance to combined DR based on most common responses is smaller than APF 2019-40

### Reinsurer reaction – Ceding insurer

<table>
<thead>
<tr>
<th>Reaction</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>59%</td>
</tr>
<tr>
<td>Reactive</td>
<td>19%</td>
</tr>
<tr>
<td>Break-even</td>
<td>15%</td>
</tr>
<tr>
<td>Other</td>
<td>7%</td>
</tr>
</tbody>
</table>

### Reinsurer reaction – Assuming reinsurer

<table>
<thead>
<tr>
<th>Reaction</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>20%</td>
</tr>
<tr>
<td>Reactive</td>
<td>0%</td>
</tr>
<tr>
<td>Break-even</td>
<td>40%</td>
</tr>
<tr>
<td>Other</td>
<td>40%</td>
</tr>
</tbody>
</table>

### Commentary

- “None” reaction refers to no adjustments to premium, underlying claims are adjusted to reflect anticipated experience
- Reinsurers had similar comments as direct companies regarding the need to model reinsurance cash flows separately to properly reflect the guidance in the APF
- Largest reduction to DR is smaller than APF 2019-40 since responses did not reflect “no adjustment”
- Differences in modeling approach result in differences between reserve credit and assumed reserve
**Reinsurer reaction – Ceding insurer**

<table>
<thead>
<tr>
<th>Reaction</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>1%</td>
</tr>
<tr>
<td>Reactive</td>
<td>64%</td>
</tr>
<tr>
<td>Break-even</td>
<td>28%</td>
</tr>
<tr>
<td>Other</td>
<td>7%</td>
</tr>
</tbody>
</table>

**Reinsurer reaction – Assuming reinsurer**

<table>
<thead>
<tr>
<th>Reaction</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>0%</td>
</tr>
<tr>
<td>Reactive</td>
<td>60%</td>
</tr>
<tr>
<td>Break-even</td>
<td>40%</td>
</tr>
<tr>
<td>Other</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Commentary**

- A reactive approach was the most common for both ceding companies and assuming companies.
- “Reserve credits” are exactly opposite assumed reserves in this scenario, resulting in offsetting impacts.
- Largest reduction to DR is shown as fully reactive with 10 years of mortality improvement included in the margin, versus fully reactive excluding future mortality improvement for the assuming company.

---

**KEY TAKEAWAYS**

**Additional key takeaways from evaluation of total impact on DR (ceded and assumed) are highlighted below in addition to those previously established**

<table>
<thead>
<tr>
<th>Takeaway</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong> Reinsurer reaction scenarios can produce reserve credits in excess of ½ Cx</td>
<td>• ½ Cx represents the cost of reinsurance that corresponds to the period for which the reinsurance premium has been paid, but not yet earned by the reinsurer, with no provision for reinsurance beyond the paid to date.</td>
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<td></td>
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<tr>
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<tr>
<td></td>
<td>• As the business ages, higher mortality and shorter projection horizons will change the impact of reinsurance on reserves at future valuation dates.</td>
</tr>
<tr>
<td><strong>3</strong> Differences in reserve credits and assumed reserves under PBR are likely to occur for multiple reasons</td>
<td>• Reserves between direct writers and reinsurers will not be mirrored, primarily due to differences in valuation assumptions (including changes to non-guaranteed YRT premiums).</td>
</tr>
<tr>
<td></td>
<td>• Other drivers include the mechanics of computing final PBR reserves, and reinsurers aggregating results across multiple treaties and multiple cedants.</td>
</tr>
<tr>
<td></td>
<td>• Differences between ceded and assumed reserves are reduced when adjustments to YRT premiums are based on the level of mortality margin specific to each party.</td>
</tr>
<tr>
<td><strong>4</strong> Differences in modeled reserves are primarily driven by the relationship between the current scale of YRT premiums and PBR mortality (anticipated experience and the level of margin)</td>
<td>• Observed differences in the relationship between the current scale of reinsurance premiums and anticipated mortality as well as the level of mortality margin explain the degree of variability in impacts of reinsurance on modeled reserves across field test participants.</td>
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<td></td>
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</tr>
<tr>
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<td>• APF 2019-40 has the widest variation in modeled range of interpretation “reserve credits” primarily due to survey respondents modeling no change to their current scale. APF 2019-41 has the smallest variation in modeled “reserve credits” but could have larger variations in practice due differences in model implementation.</td>
</tr>
<tr>
<td><strong>6</strong> Differences in ceded “reserve credits” and assumed reserves are minimized when a mechanical approach to reinsurance is used by both parties</td>
<td>• When both ceding companies and assuming companies have the same assumptions and methodologies, a reactive approach under APF 2019-42 can result in mirrored deterministic “reserve credits”.</td>
</tr>
<tr>
<td></td>
<td>• Other solutions allow for more differences between ceded and assumed reserves through reinsurance premium modeling, outside of variance driven by assumption differences and PBR methodology.</td>
</tr>
</tbody>
</table>
### FIELD TEST SOLUTIONS

Dimensions for comparison were established over the course of the project

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Description and comments</th>
<th>Key supporting analysis</th>
</tr>
</thead>
</table>
| Level of prescription              | • Judgement allowed by the potential solution  
  • Prescribed solutions provide more uniformity but may not fully account for the unique contract provisions, relationships, and risks associated with the underlying reinsurance agreements | • Proposed solutions                               |
| Modeling complexity                | • Complexity of implementing solution in valuation system and process                     | • Field test                                        |
| Variation in results               | • Potential for variability in results given interpretation of requirements  
  • Controlled for other drivers of variation (i.e., variation in reinsurance rates and credibility) | • Field test                                        |
| Potential for asymmetry between assumed and ceded interpretation | • Propensity for variance between reserve credits and assumed reserves  
  • Asymmetries could result in increases or decreases to total reserves | • Interpretation survey and representative analysis |
| Defined level of risk sharing      | • Well defined amount of excess mortality experience that is shared with the assuming reinsurer (e.g., prescribed reserve/credit, mortality improvement, “loss ratio” trigger, etc.)  
  • Prescribing a single level of risk sharing between all ceding companies and reinsurers may not account for individual treaty provisions, reinsurer rate increase practices, etc. | • Interpretation survey and representative analysis |
| Potential APF revisions            | • Amount of revisions required to current proposal language before LATF exposure         | • “Field tested” APFs                               |

Some dimensions have clear ideal outcomes (e.g., modeling complexity) while other dimensions will need to be weighed

### FIELD TEST SOLUTIONS

Comparison of potential long-term solutions based on results of the field test and interpretation survey

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of prescription</td>
<td></td>
<td>Less</td>
<td>Less</td>
<td>More</td>
<td>More</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modeling complexity</td>
<td></td>
<td>Less</td>
<td>More</td>
<td>Less</td>
<td>More</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variation in results</td>
<td></td>
<td>Less</td>
<td>More</td>
<td>Less</td>
<td>More</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potential for asymmetry between assumed and ceded interpretation</td>
<td></td>
<td>Less</td>
<td>More</td>
<td>Less</td>
<td>More</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defined level of risk sharing</td>
<td></td>
<td>Less</td>
<td>Less</td>
<td>More</td>
<td>More</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potential APF revisions</td>
<td></td>
<td>Less</td>
<td>More</td>
<td>Less</td>
<td>More</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Multiple mortality improvement scenarios were included with APF 2019-41 and 42
APPENDIX A
Supporting reports and presentations

APPENDIX A.1
ACADEMY REPORTS
FIELD TEST RESULTS
Compiled and documented by the American Academy of Actuaries

Detailed reports published by the Academy are posted to the NAIC website with this report

Academy reports

FIELD TEST RESULTS
Compiled and documented by the American Academy of Actuaries

Detailed reports published by the Academy are posted to the NAIC website with this report

Academy reports

INTERPRETATION SURVEY RESULTS
Compiled and documented by the American Academy of Actuaries

Detailed reports published by the Academy are posted to the NAIC website with this report

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APPENDIX A.2
PRIOR REPORTS

Prior reports

2019 NAIC FALL MEETING LATF PRESENTATION (DECEMBER 2019)
Initial presentation focused on education of modeling reinsurance under PBR, initial representative PBR model design and analysis of the APFs

Prior presentations are posted to the NAIC website along with Academy reports and this report
Prior presentations are posted to the NAIC website along with Academy reports and this report.

APPENDIX B

Model design and assumptions
## LIABILITY ASSUMPTIONS (ULSG)
The assumptions used in the analysis are below, including assumed PBR margins

<table>
<thead>
<tr>
<th>Assumption</th>
<th>Anticipated experience assumption</th>
<th>Prudent estimate assumption (e.g. margin)</th>
</tr>
</thead>
</table>
| **Mortality** | - 2015 VBT gender distinct, smoker distinct ANB  
- Relative Risk varies by risk class  
- A/E factors vary by high/low band  
- Future mortality improvement of .50% | - Prescribed margins applied to company mortality  
- Industry table: 2015 VBT with prescribed margins and mortality improvement scale  
- Grading and margins assumes 100% Limited Fluctuation method credibility |
| **Lapse** | - 3% annual lapse rate | - 2% annual lapse rate  
- 0% lapse rate when the secondary guarantee is in-the-money (i.e. CSV < 0) |
| **Expenses** | - $100 per policy (annual)  
- 2.5% premium tax  
- 2% inflation | - 105% margin on expenses  
- 2.5% inflation |

## LIABILITY ASSUMPTIONS (TERM)
The assumptions used in the analysis are below, including assumed PBR margins

<table>
<thead>
<tr>
<th>Assumption</th>
<th>Anticipated experience assumption</th>
<th>Prudent estimate assumption (e.g. margin)</th>
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</thead>
</table>
| **Mortality** | - 2015 VBT gender distinct, smoker distinct ANB  
- Relative Risk varies by risk class  
- A/E factors vary by high/low band  
- Future mortality improvement of .50% | - Prescribed margins applied to company mortality  
- Industry table: 2015 VBT with prescribed margins and mortality improvement scale  
- Grading and margins assumes 100% Limited Fluctuation method credibility |
| **Lapse** | - 6.5% during level term period  
- 100% shock lapse after level term period | - 95% margin on lapses |
| **Expenses** | - $85 per policy (annual)  
- Additional yr 1 expense $200 per policy and $0.40 per $1000 face  
- 2.5% premium tax  
- 2% inflation | - 105% margin on expenses  
- 2.5% inflation |
APPENDIX C
Supplemental results

APPENDIX C.1
FIELD TEST RESULTS AND ANALYSIS
Field test results and analysis

**BASELINE | TERM RESULTS**

Similar to ULSG, the representative PBR model explains the variance in impacts of reinsurance on modeled reserves observed in field test submissions.

C.1 – Gross DR – Net DR (per 1000 of projected ceded NAAR)

No change to YRT rates

C.2 – Gross DR – Net DR (per 1000 of projected ceded NAAR)

1/2 Cx

Field test results and analysis

**APF 2019-40 | TERM RESULTS**

Application of prudent estimate margins in Action B lowers the impact to DR and including additional parameters to determine the application of margins (Action C and Action D) reduces the variation in field test results.

C.3 – Gross DR – Net DR (per 1000 of projected ceded NAAR)

Action A

C.4 – Gross DR – Net DR (per 1000 of projected ceded NAAR)

Action B

C.5 – Gross DR – Net DR (per 1000 of projected ceded NAAR)

Action C

C.6 – Gross DR – Net DR (per 1000 of projected ceded NAAR)

Action D
**APF 2019-41 | TERM RESULTS**

Similar to ULSG, introducing future mortality improvement to the projected claims reduces reinsurance gains, given the current scale of reinsurance premiums is held constant.

![Graph C.7](image)

**C.7 – Gross DR – Net DR (per 1000 of projected ceded NAAR)**

0.0% FMI

![Graph C.8](image)

**C.8 – Gross DR – Net DR (per 1000 of projected ceded NAAR)**

0.5% FMI

**Field test results legend**

- 25th percentile (Field test)
- 75th percentile (Field test)
- Coverage range (Representative PBR model)
- "Baseline YRT scale" with high credibility

**APF 2019-42 | TERM RESULTS**

Similar to ULSG, increasing the level of future mortality improvement has a similar impact on both APF 2019-41 and 2019-42.

![Graph C.9](image)

**C.9 – Gross DR – Net DR (per 1000 of projected ceded NAAR)**

1.0% FMI

![Graph C.10](image)

**C.10 – Gross DR – Net DR (per 1000 of projected ceded NAAR)**

5 years FMI

![Graph C.11](image)

**C.11 – Gross DR – Net DR (per 1000 of projected ceded NAAR)**

10 years FMI

![Graph C.12](image)

**C.12 – Gross DR – Net DR (per 1000 of projected ceded NAAR)**

20 years FMI

**Field test results legend**

- 25th percentile (Field test)
- 75th percentile (Field test)
- Coverage range (Representative PBR model)
- "Baseline YRT scale" with high credibility
### BASELINE | ULSG RESULTS

Development of unitized impact to DR for baseline YRT Rate scale and high credibility

**C.13 – No change to YRT rates**

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**Notes**

- Impact to DR is unitized as per 1000 of Ceded NAAR
- Unitized impact to DR for no changes to YRT rates = \[(a) – (b)] / (c) * 1000

### Field test results and analysis

### APF 2019-40 | ULSG RESULTS

Development of unitized impact to DR for baseline YRT Rate scale and high credibility

**C.14 – Action A**

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**C.16 – Action C**

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**Notes**

- Impact to DR is unitized as per 1000 of Ceded NAAR
- Unitized impact to DR = \[(a) – (b)] / (c) * 1000
### APF 2019-41 | ULSG RESULTS
Development of unitized impact to DR for baseline YRT Rate scale and high credibility

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<tr>
<td>Post-reinsurance DR (b)</td>
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<td>5.41</td>
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### Notes
- (c) reflects the outer-loop ceded NAAR used in each scenario which is adjusted to as a modeling technique for reinsurance margins
- (a) is adjusted to be consistent with each post reinsurance run
- Impact to DR is unitized as per 1000 of Ceded NAAR
- Unitized impact to DR = \((a) - (b)\) / (c) * 1000

### APF 2019-42 | ULSG RESULTS
Development of unitized impact to DR for baseline YRT Rate scale and high credibility

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<td><strong>C.21 – 5-years FMI</strong></td>
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### Notes
- (c) reflects the outer-loop ceded NAAR used in each scenario which is adjusted to as a modeling technique for reinsurance margins
- (a) is adjusted to be consistent with each post reinsurance run
- Impact to DR is unitized as per 1000 of Ceded NAAR
- Unitized impact to DR = \((a) - (b)\) / (c) * 1000

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### BASELINE | TERM RESULTS
Development of unitized impact to DR for baseline YRT Rate scale and high credibility

#### C.25 – No change in rates

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**Notes**

- Impact to DR is unitized as per 1000 of Ceded NAAR
- Unitized impact to DR = \( \frac{(a) - (b)}{c} \times 1000 \)

#### APF 2019-40 | TERM RESULTS
Development of unitized impact to DR for baseline YRT Rate scale and high credibility

#### C.26 – Action A

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#### C.28 – Action C

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**Notes**

- Impact to DR is unitized as per 1000 of Ceded NAAR
- Unitized impact to DR = \( \frac{(a) - (b)}{c} \times 1000 \)
### Field test results and analysis

#### APF 2019-41 | TERM RESULTS

Development of unitized impact to DR for baseline YRT Rate scale and high credibility

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<tr>
<td>Ceded NAAR (c)</td>
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<tr>
<td>Utilized impact to DR (d)</td>
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**Notes**
- (c) reflects the outer-loop ceded NAAR used in each scenario which is adjusted to as a modeling technique for reinsurance margins
- (a) is adjusted to be consistent with each post reinsurance run
- Impact to DR is unitized as per 1000 of Ceded NAAR
- Unitized impact to DR = [(a) – (b)] / (c) * 1000

#### APF 2019-42 | TERM RESULTS

Development of unitized impact to DR for baseline YRT Rate scale and high credibility

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**Notes**
- Impact to DR is unitized as per 1000 of Ceded NAAR
- Unitized impact to DR = [(a) – (b)] / (c) * 1000
## APPENDIX C.2

### INTERPRETATION SURVEY RESULTS AND ADDITIONAL ANALYSIS

**Interpretation survey results and additional analysis**

**APF 2019-40 | ULSG RESULTS**

Development of Net DR for illustrated interpretation scenarios

### C.37 – No change in rates

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<td>1,978</td>
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<td>4,903</td>
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### C.38 – Fully reactive after 1 year

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<td>4,903</td>
<td>3,183</td>
<td>1,627</td>
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<td>Post-reinsurance DR (b)</td>
<td>2,102</td>
<td>5,814</td>
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### C.39 – Break even after 1 year

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<td>4,903</td>
<td>3,183</td>
<td>1,627</td>
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**Notes**

- Impact to DR is (a) – (b)

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Development of Net DR for illustrated interpretation scenarios

**C.40 – No change in rates**

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**C.41 – Fully reactive after 1 year**

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**Notes**
- Impact to DR is (a) – (b)

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### APF 2019-41 | ULSG RESULTS
Development of Net DR for illustrated interpretation scenarios

**C.42 – Break even after 1 year**

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**C.44 – Break even after 1 year**

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**Notes**
- Impact to DR is (a) – (b)
### APF 2019-41 | TERM RESULTS
Development of Net DR for illustrated interpretation scenarios

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#### Notes
- Impact to DR is (a) – (b)

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### APF 2019-42 | ULSG RESULTS
Development of Net DR for illustrated interpretation scenarios

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#### Notes
- Impact to DR is (a) – (b)

---

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### APF 2019-42 | TERM RESULTS

Development of Net DR for illustrated interpretation scenarios

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</tbody>
</table>

### Notes
- Impact to DR is (a) – (b)

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APPENDIX D

Project team

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PROJECT TEAM AND GOVERNANCE

The consultant analysis will be overseen by NAIC Staff, the Academy, and the ACLI, as depicted in the following chart:

<table>
<thead>
<tr>
<th>Project oversight</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Academy of Actuaries</td>
</tr>
<tr>
<td>Steve Jackson</td>
</tr>
<tr>
<td>ACLU</td>
</tr>
<tr>
<td>Brian Bayerle</td>
</tr>
<tr>
<td>NAIC</td>
</tr>
<tr>
<td>Pat Allison</td>
</tr>
<tr>
<td>Oliver Wyman</td>
</tr>
<tr>
<td>Chris Whitney</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technical project team</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical lead</td>
</tr>
<tr>
<td>Dylan Strother</td>
</tr>
<tr>
<td>AXIS modeler</td>
</tr>
<tr>
<td>Katie van Ryn</td>
</tr>
<tr>
<td>AXIS modeler</td>
</tr>
<tr>
<td>Scott O’Neal</td>
</tr>
<tr>
<td>Support</td>
</tr>
<tr>
<td>Jennifer Frasier</td>
</tr>
<tr>
<td>Support</td>
</tr>
<tr>
<td>Sara Pineros</td>
</tr>
</tbody>
</table>

OLIVER WYMAN TEAM

<table>
<thead>
<tr>
<th>Contact information</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chris Whitney, FSA, MAAA Principal, Hartford</td>
<td>Engagement manager</td>
</tr>
<tr>
<td><a href="mailto:christopher.whitney@oliverwyman.com">christopher.whitney@oliverwyman.com</a></td>
<td></td>
</tr>
<tr>
<td>Dylan Strother, FSA, MAAA Senior Consultant, New York</td>
<td>Technical lead</td>
</tr>
<tr>
<td><a href="mailto:dylan.strother@oliverwyman.com">dylan.strother@oliverwyman.com</a></td>
<td></td>
</tr>
<tr>
<td>Katie van Ryn, FSA, MAAA Consultant, Toronto</td>
<td>AXIS model development</td>
</tr>
<tr>
<td><a href="mailto:katie.vanryn@oliverwyman.com">katie.vanryn@oliverwyman.com</a></td>
<td></td>
</tr>
<tr>
<td>Sara Pineros Consulting Intern, Toronto</td>
<td>Support</td>
</tr>
<tr>
<td><a href="mailto:sara.pineros@oliverwyman.com">sara.pineros@oliverwyman.com</a></td>
<td></td>
</tr>
</tbody>
</table>

The report and the findings herein are subject to the reliances and limitations outlined at the beginning of this report. This report is considered a statement of actuarial opinion under the guidelines promulgated by the American Academy of Actuaries. Chris Whitney, Dylan Strother and Katie van Ryn of Oliver Wyman developed this report and meet the qualification requirements of the American Academy of Actuaries to render the opinion contained herein.
QUALIFICATIONS, ASSUMPTIONS, AND LIMITING CONDITIONS

Oliver Wyman was engaged by the American Council of Life Insurers, the American Academy of Actuaries and the National Association of Insurance Commissioners to support an industry field test being conducted to aid the NAIC Life Actuarial (A) Task Force in the selection of a long-term solution for the treatment of non-guaranteed reinsurance under PBR.

Oliver Wyman shall not have any liability to any third party in respect of this report or any actions taken or decisions made as a consequence of the results, advice or recommendations set forth herein.

This report does not represent investment advice or provide an opinion regarding the fairness of any transaction to any and all parties. This report does not represent legal advice, which can only be provided by legal counsel and for which you should seek advice of counsel. The opinions expressed herein are valid only for the purpose stated herein and as of the date hereof. Information furnished by others, upon which all or portions of this report are based, is believed to be reliable but has not been verified. No warranty is given as to the accuracy of such information. Public information and industry and statistical data are from sources Oliver Wyman deems to be reliable; however, Oliver Wyman makes no representation as to the accuracy or completeness of such information and has accepted the information without further verification. No responsibility is taken for changes in market conditions or laws or regulations and no obligation is assumed to revise this report to reflect changes, events or conditions, which occur subsequent to the date hereof.
Criteria to Assess VM-20 Solutions for Modeling Non-guaranteed YRT Reinsurance

Below is a list of potential criteria that could be used to assess proposed VM-20 amendments regarding non-guaranteed YRT reinsurance.

<table>
<thead>
<tr>
<th>Consideration</th>
<th>Potential APF selection criteria and other requirements</th>
</tr>
</thead>
</table>
| 1. Level of prescription                               | o The APF should be principles-based, as defined in VM Section I, Overview of Reserve Concepts:  
  ▪ Uses one or more methods, or one or more assumptions, determined by the insurer pursuant to requirements of Model #820 and the Valuation Manual  
  ▪ Reflects risks that are associated with the policies being valued capable of materially affecting the reserve  
  Note: The definition above does not preclude the use of appropriate guardrails or the use of a formulaic component. |
| 2. Modeling complexity                                 | o The APF should be practical to implement  
  o The APF should be auditable  
  o The APF should allow simplified methods  
  o The APF should provide a safe harbor (e.g. use ½ c, if a company has a de minimis amount of YRT reinsurance or the product type (e.g. term) produces a small modeled reserve credit). This is in the spirit of the definition of PBR as reflecting risks that are “capable of materially impacting the reserve.” |
| 3. Variation in interpretations leading to variation in results | o The APF should contain an appropriate degree of alignment between the modeled reinsurance premiums paid by the ceding company and the modeled death claims paid by the assuming company.  
  o The APF should allow for variations in results due to treaty differences  
  o The APF should allow for variations in results from established relationships between a reinsurer and the ceding company that can be supported in the PBR Actuarial Report, and there should be appropriate application of ASOP 56 Section 3.1.6 (Assumptions used as Input)  
  o The APF should contain clear and unambiguous language  
  o The wording of the APF should not result in a wide range of company interpretations (i.e., there are clear requirements). It should produce similar reserve credits for two identical companies, (i.e. companies with the same products, inforce, mortality experience, reinsurance treaties, etc.). |
| 4. Potential for asymmetry between assumed and ceded interpretation | o Although mirror reserving is not a VM-20 requirement (VM-20 Section 8.C.1), the APF should provide guidance on modeling non-guaranteed reinsurance features to be considered by both ceding companies and assuming companies that promotes a reasonable relationship between 1) the ceding company’s pre-reinsurance reserves vs. 2) the ceding company’s post reinsurance ceded reserve + the reserve held by the assuming company.  
  VM-20 Section 8.C.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. |
### 5. Defined level of risk sharing
- The APF should contain provisions for appropriate risk sharing between reinsurance counterparties such that the level of assuming company loss acceptance produced is realistic and consistent with the projected scenario and treaty provisions.
- The approach for setting assumptions for non-guaranteed reinsurance elements under the APF should be consistent with the considerations in VM-20 Section 8.C.7. In addition to the economic environment considered in 8.C.7.b, the NGE assumptions should reflect other relevant moderately adverse conditions – including a moderately adverse mortality scenario.
- The APF should reflect that assumptions used in determining the modeled reserve should account for any actions that the counterparty has taken or is likely to take (VM-20 Sections 8.C.8 and 8.C.10)

VM-20 8.C.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.

VM-20 8.C.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.

VM-20 8.C.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.

### 6. Consideration of mortality improvement beyond the valuation date
- Differences between the future mortality improvement assumption in the VM-20 prudent estimate mortality (currently not allowed) and any future mortality improvement assumption embedded in the current scale of YRT premiums should not be the primary driver to an undue reduction in the aggregate reserve for the business, that is the sum of the ceding company’s post-reinsurance reserve and the assuming company’s reserve.

### 7. Requirements outside the Valuation Manual
- The APF must coordinate and align with the Accounting Practices and Procedures Manual (APPM), or if needed, acknowledge that changes would be required:
  - The APF should consider SSAP No. 61R
  - The APF should consider APPM Appendix A-791

### 8. Other considerations not shown above
- The APF should promote a level playing field (e.g. not favor large companies over small companies, not favor companies with YRT reinsurance over companies without YRT reinsurance)
- The APF should not encourage the use of captives
- The APF should not lead to market disruption (e.g. discouraging use of YRT reinsurance; greatly increasing cost to consumers)
- The APF should not discourage innovation
- The APF should handle all existing types of non-guaranteed reinsurance. While the most commonly considered non-guaranteed reinsurance feature
is future YRT premium rates, other non-guaranteed features are also to be considered, such as non-guaranteed expense allowances.

- The APF should ideally contain language flexible enough to address emerging reinsurance structures that have not yet been seen in the marketplace.

| 9. Outstanding Questions | Should negative reserve credits be avoided, i.e. should there be a floor on the reserve credit (such as $\frac{1}{2} Cx$)? |
The Life Actuarial (A) Task Force met Nov. 5, 2020. The following Task Force members participated: Texas, Chair, represented by Mike Boerner and Rachel Hemphill (TX); Tynesia Dorsey, Vice Chair, represented by Peter Weber (OH); Jim L. Ridling represented by Steve Ostlund (AL); Ricardo Lara represented by Ben Bock and Perry Kupferman (CA); Michael Conway represented by Eric Unger (CO); Andrew N. Mais represented by Wanchin Chou (CT); Doug Ommen represented by Mike Yanacheak (IA); Robert H. Muriel represented by Vincent Tsang (IL); Stephen W. Robertson represented by Karl Knable (IN); Vicki Schmidt represented by Nicole Boyd (KS); Grace Arnold represented by Fred Andersen and John Robinson (MN); Chlora Lindley-Myers represented by William Leung (MO); Bruce R. Ramge represented by Rhonda Ahrens (NE); Marlene Caride represented by Kevin Clarkson (NJ); Russell Toal represented by Anna Krylova (NM); Linda A. Lacewell represented by Bill Carmello and Amanda Fenwick (NY); Glen Mulready represented by Andrew Schallhorn (OK); Tanji J. Northrup represented by Tomasz Serbinowski (UT); and Scott A. White represented by Craig Chupp (VA).

1. Adopted Amendment Proposal 2020-09

Mr. Boerner said amendment proposal 2020-09 (Attachment Two-A) seeks to amend the life principle-based reserving (PBR) exemption for new policies resulting from conversions mostly from policies in runoff that were not subject to PBR. He said Task Force adoption of the amendment proposal will provide companies guidance prior to the NAIC adoption of the amendment proposal for the 2022 Valuation Manual. John Brady (Talcott Resolution) said the Talcott Resolution comment letter (Attachment Two-B) explains that the company stopped writing business in 2013, but it would be subject to PBR requirements because of one policy conversion. He said the adoption of the amendment proposal would allow the company an exemption from the PBR requirements, allowing it to focus on other business segments. John C. Michael (Genworth Financial) said the Genworth Financial comment letter (Attachment Two-C) supports the adoption of the amendment proposal. He said the company has ceased writing business in some of its entities. He said the only new business in those entities result from conversions. He said while the company is prepared to comply with PBR, it would prefer to focus on managing its runoff in-force business and not have to spend time on PBR compliance for those entities.

Mr. Robinson said he is concerned that the scope of the proposal is too narrow. His comment letter (Attachment Two-D) proposes addressing the issue broadly by revising the Valuation Manual, outside of the life PBR exemption, to give companies the option to exempt any or all conversion policies. He expressed concern about continuing to change the life PBR exemption, because some states have the exemption written into their law. He also questioned the necessity of replacing the annual exemption process with a multi-year exemption. He has not found the annual exemption process onerous. He suggested surveying Task Force members to get feedback on the efforts required to file and approve the exemption. Ms. Hemphill noted that several changes to the proposal were made based on Mr. Robinson’s comments. She said the narrow issue of exempting conversion for companies in runoff should not be addressed with a broad response that would open opportunities for gamesmanship. She noted that conversions to universal life with secondary guarantee (ULSG) policies and other policies requiring a PBR approach should continue to not qualify for exemption. Mr. Chupp said he shares some of Ms. Hemphill’s concerns with broadening the scope of the proposal. He also recommended an editorial change revising the term “one of the conditions” in subsection D.1 to “at least one of the conditions.”

Mr. Chupp said the current wording of the amendment proposal and its expected 2022 effective date would not include exemption of 2020 and 2021 conversions for which companies might have received a permitted practice or one-year special commissioner discretion exemption. He suggested removing the final sentence in subsection D.2.b. Mr. Leung said he is concerned that companies must perpetually issue a permitted practice for the exemption of 2020 and 2021 conversions. He said he supports the broader approach suggested by Mr. Robinson. Mr. Ostlund said it is necessary to adopt the amendment proposal in its current form to provide guidance to companies for year-end 2020. Ms. Hemphill said the issue raised by Mr. Chupp, and any other refinements that may be necessary, can be addressed prior to the Life Insurance and Annuities (A) Committee consideration of the amendment proposal next summer.

Mr. Ostlund made a motion, seconded by Mr. Chou, to adopt amendment proposal 2020-09, including the editorial change suggested by Mr. Chupp. The motion passed unanimously.

Having no further business, the Life Actuarial (A) Task Force adjourned.
Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

1. Identify yourself, your affiliation and a very brief description (title) of the issue.

**Identification:**
Rachel Hemphill, Texas Department of Insurance

**Title of the Issue:**
1. Modify Life PBR Exemption to not require annual exemption requests if the company continues to meet the premium thresholds and does not have any ULSG with material SG.
2. Not require VM-20 when all new issues arise due to policyholders exercising guarantees or options (e.g. for conversion) in existing policies valued under VM-A/VM-C.

2. Identify the document, including the date if the document is “released for comment,” and the location in the document where the amendment is proposed:

Valuation Manual Section II, Subsection 1.D

January 1, 2020 NAIC *Valuation Manual*

3. Show what changes are needed by providing a red-line version of the original verbiage with deletions and identify the verbiage to be deleted, inserted or changed by providing a red-line (turn on “track changes” in Word®) version of the verbiage. (You may do this through an attachment.)

See attached.

4. State the reason for the proposed amendment? (You may do this through an attachment.)

Reduce filing burden for companies and state regulators by making the Life PBR Exemption a one-time filing until conditions for the exemption change. Allow exemption for companies that do not meet the premium thresholds, but are only issuing new policies that would be subject to VM-20 due to policyholders exercising guarantees or options (e.g. for conversion) from existing policies being valued under the pre-PBR framework.

* This form is not intended for minor corrections, such as formatting, grammar, cross-references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

**NAIC Staff Comments:**

W:\National Meetings\2010\...\TF\LHA\
Valuation Manual Section II, Subsection 1.D

D. Life PBR Exemption

1. A company meeting the one of the conditions in D.2 below may file a statement of exemption for ordinary life insurance policies, except for policies in D.3 below, issued directly or assumed during the current calendar year, that would otherwise be subject to VM-20. If a company has no business issued directly or assumed during the current calendar year that would otherwise be subject to VM-20, a statement of exemption is not required. For a filed statement of exemption, Such statement must be filed with the domiciliary commissioner prior to July 1 of that year certifying that one of the two conditions in D.2 was met based on premiums from the prior calendar year annual statement and t. The statement of exemption must also be included with the NAIC filing for the second quarter of that year.

The domiciliary commissioner may reject such statement prior to Sept. 1 and require the company to follow the requirements of VM-20 for the ordinary life policies covered by the statement.

If a filed statement of exemption is not rejected by the domiciliary commissioner, the filing of subsequent statements of exemption is not required as long as the company continues to qualify for the exemption; rather, ongoing statements of exemption for each new calendar year will be deemed to not be rejected, unless: 1) the company fails to meet either condition in D.2 below, 2) the policies contain those in D.3 below, or 3) the domiciliary commissioner contacts the company prior to Sept. 1 and notifies them that the statement of exemption is rejected. If any of these three events occur, then the statement of exemption for the current calendar year is rejected and a new statement of exemption must be filed and not rejected in order for the company to exempt additional policies. In the case of an ongoing statement of exemption, rather than include a statement of exemption with the NAIC filing for the second quarter of that year, the company should enter “SEE EXPLANATION” in response to the Life PBR Exemption supplemental interrogatory and provide as an explanation that the company is utilizing an ongoing statement of exemption.

2. Conditions for Exemption:
   a. The company has less than $300 million of ordinary life premiums
   or
   b. The only new policies subject to VM-20 being issued or assumed by the company are due to election of policy benefits or features from existing policies that are being valued under VM-A and VM-C and the company was exempted from, or otherwise not subject to, the requirements of VM-20 in the prior year.

3. Policies Excluded from the Life PBR Exemption:
   a. Universal life with secondary guarantee (ULSG) policies with a secondary guarantee that does not meet the VM-01, Definitions for Terms in Requirements, definition of a “non-material secondary guarantee.”

4. Each exemption, or lack of an exemption, applies only to policies issued or assumed in the current year, and it applies to all future valuation dates for those policies. The minimum reserve requirements for the ordinary life policies subject to the exemption are those pursuant to applicable methods required in VM-A and VM-C using the mortality as defined in VM-20 Section 3.C.1 and VM-M Section 1.H.

Valuation Manual Section II, Subsection 1.D - Footnote

1 Premiums are measured as total (first year, single, and renewal) direct plus total (first year, single, and renewal) reinsurance assumed from an unaffiliated company from the ordinary life line of business reported in the prior calendar year life/health annual financial statement, Exhibit 1, Part 1, Column 3, “Ordinary Life Insurance” excluding premiums for guaranteed issue policies and preneed life contracts and excluding amounts that represent the transfer of reserves in force as of the effective date of a reinsurance assumed
transaction and are reported in Exhibit 1 Part 1, Column 3 as ordinary life insurance premium. Preneed is as defined in VM-01.
October 28, 2020

Mr. Mike Boerner
Chair, NAIC Life Actuarial Task Force (LATF)

Re: APF 2020-09

Dear Mr. Boerner:

Talcott Resolution would like to thank you for considering modification of the VM-20 exemption requirements.

In 2013 Talcott stopped writing new individual life business and ceded virtually all its individual life business to a third party. A small block of business was retained, and the company expects to see some conversions from this block as it runs off. Talcott does not meet the current VM-20 exemption requirements due to the gross premium limits (vs net premiums).

From 2013 through 2019 there were no conversions from the retained block. As for 2020 to date, Talcott has one conversion. An exemption for conversion policies would allow the company to avoid the time needed complying with VM-20, VM-31, and VM-G and spend more time on other (material) business segments.

Talcott supports APF 2020-09 and recommends that it be adopted.

Sincerely,

[Signature]

John Brady, FSA, MAAA
Chief Actuary
john.brady@talcottresolution.com
806.791.0522

Cc: Reggie Mazyck
October 27, 2020

Mr. Mike Boerner  
Chair, NAIC Life Actuarial Task Force (LATF)

Dear Mr. Boerner:

Genworth appreciates the opportunity to provide comments on Amendment Proposal Form 2020-09. We are in support of expanding the Life PBR Exemption in cases where the Company is only issuing revised contracts to existing policyholders exercising their contract options which were purchased prior to the enactment of Life PBR requirements. This proposal benefits our affiliated companies that no longer solicit new Life business, but still contractually provide Whole Life Conversion and Re-entry Term products from existing Term plans and riders. This exemption will allow Genworth and its regulators to focus on the in-force blocks in these companies, rather than putting time and expense into PBR compliance and review for the relatively minor number of contracts resulting from these contract options.

We appreciate the Task Force addressing this issue, which has been of interest to Genworth and others in the industry for the last few years.

Sincerely,

Scott Goodman  
VP & Appointed Actuary  
Genworth Life Insurance Company  
Genworth Life and Annuity Insurance Company  
Genworth Life Insurance Company of New York

Cc: Reggie Mazyck, NAIC  
Rachel Hemphill, Texas Department of Insurance  
Craig Chupp, Virginia Bureau of Insurance
Comments on APF2020-09

John Robinson – Minnesota

October 2, 2020

Thank you for the opportunity to comment on this APF.

The proposed amendment is meant to address

1. Modifying the need for filing the statement of exemption annually; and
2. Allowing for certain blocks of term conversions to not be subject to VM-20.

I will address each of these in turn.

Response to 1:

This is the first year of exemption filings, and I am not convinced that the process is particularly onerous, either for the company or the regulator. However, the proposal seems acceptable, with the following revisions:

(a) The term “initial” has been introduced, as if initial statements of exemption are to be treated differently from subsequent statements of exemption. I don’t think this has to be the case. Therefore, I suggest removing the qualifier “initial”.

(b) Please use the term “statement of exemption” consistently throughout Subsection 1.D.

(c) The condition in D.2 speaks for itself and does not need to be characterized elsewhere.

(d) Having the company provide essentially the same information in the Life PBR Exemption supplementary interrogatory may be simply adding back the work that has been saved.

With these revisions, paragraph 1 would read as follows:

1. A company meeting the condition in D.2 below may file a statement of exemption for ordinary life insurance policies, except for policies in D.3 below, issued directly or assumed during the current calendar year, that would otherwise be subject to VM-20. If a company has no business issued directly or assumed during the current calendar year that would otherwise be subject to VM-20, a statement of exemption is not required. For an initial exemption, such a statement must be filed with the domiciliary commissioner prior to July 1 of that year certifying that the condition in D.2 was met based on premiums in force from the prior calendar year annual statement. The statement of exemption must also be included with the NAIC filing for the second quarter of that year.

The domiciliary commissioner may reject such statement prior to Sept. 1 and require the company to follow the requirements of VM-20 for the ordinary life policies covered by the statement.

If an initial filed statement of exemption is not rejected by the domiciliary commissioner, the filing of such a statement is not required in future a statement of exemption need not be filed in the following or any subsequent calendar year, calendar years, as long as provided that the company continues to meet the conditions in D.2 below, except for policies in D.3 below for exemption; rather, ongoing exemptions for each new calendar year will be deemed to not be rejected, unless:
1) the company fails to meet the condition in D.2 below, 2) the policies contain those in D.3 below, or 3) the domiciliary commissioner contacts the company prior to Sept. 1 and notifies them that the statement of exemption is rejected. If any of these three criteria events occurs, then the current ongoing statement of exemption currently in effect is rejected and a new initial statement of exemption must be actively filed and not rejected in order for the company to exempt additional policies. In the case of an ongoing exemption, rather than include the statement of exemption with the NAIC filing for the second quarter of that year, the company should enter “SEE EXPLANATION” in response to the Life PBR Exemption supplemental interrogatory and provide an explanation, including the calendar year that the company actively filed and was granted the Life PBR Exemption and confirmation that none of the following apply: 1) the company fails to meet the condition in D.2 below, 2) the policies exempted contain those in D.3 below, or 3) the domiciliary commissioner contacted the company and notified them that the statement of exemption was rejected.

Response to 2:

The situation where a company issues only term conversions is somewhat unique. Addressing unique situations narrowly will only lead to more unique situations needing to be addressed. To avoid this, I suggest that they be addressed more broadly, when possible.

In the case of term conversions generally, it seems reasonable to me to consider whether there is a clear need to subject them to VM-20. Unless it is deemed that, for term conversions, reserves under VM-20 have a clear regulatory advantage over reserves calculated under VM-A or VM-C, then I propose that companies be allowed the option to elect whether or not to apply VM-20.

The purpose of the Life PBR Exemption is to exempt the company from applying VM-20 to all life insurance policies except ULSG. Instead of modifying this exemption, I suggest a revision to Subsection 1.B as follows:

B. Minimum reserve requirements for variable and nonvariable individual life contracts, excluding

1) guaranteed issue life contracts,
2) preneed life contracts,
3) industrial life contracts,
4) at the option of the company, policies issued pursuant to term conversion privileges, and
5) policies of companies exempt pursuant to the life PBR exemption in paragraph D below—are provided by VM-20, Requirements for Principle-Based Reserves for Life Products, except for election of the transition period in paragraph C below. For this purpose, joint life policies are considered individual life.

Thank you.

John Robinson FSA, FCA, MAAA
Director PBR – Valuation Actuary, Minnesota
The Life Actuarial (A) Task Force met Oct. 29, 2020. The following Task Force members participated: Doug Slape, Chair, represented by Mike Boerner and Rachel Hemphill (TX); Tynesia Dorsey, Vice Chair, represented by Peter Weber (OH); Jim L. Ridling represented by Steve Ostlund (AL); Ricardo Lara represented by Ben Bock and Perry Kupferman (CA); Michael Conway represented by Eric Unger (CO); Andrew N. Mais represented by Wanchin Chou (CT); Doug Ommen represented by Mike Yanacheak (IA); Robert H. Muriel represented by Vincent Tsang (IL); Stephen W. Robertson represented by Karl Knable (IN); Vicki Schmidt represented by Nicole Boyd (KS); Grace Arnold represented by Fred Andersen and John Robinson (MN); Chlora Lindley-Myers represented by William Leung (MO); Bruce R. Ramge represented by Rhonda Ahrens (NE); Marlene Caride represented by Kevin Clarkson (NJ); Russell Toal (NM); Linda A. Lacewell represented by Bill Carmello and Amanda Fenwick (NY); Glen Mulready represented by Andrew Schallhorn (OK); Tanji J. Northrup represented by Tomasz Serbinowski (UT); and Scott A. White represented by Craig Chupp (VA).

1. **Adopted Revisions to AG 49**

Mr. Boerner said that *Actuarial Guideline XLIX—The Application of the Life Illustrations Model Regulation to Policies With Index-Based Interest* (AG 49) (Attachment Three-A) was re-exposed for a seven-day public comment period to consider revisions proposed by Birny Birnbaum (Center for Economic Justice—CEJ). He said the CEJ revisions allow companies the option of applying *Actuarial Guideline XLIX-A—The Application of the Life Illustrations Model Regulation to Policies With Index-Based Interest Sold On or After November 25, 2020* (AG 49-A) to new in-force illustrations for policies issued prior to the effective date of AG 49-A. Brian Bayerle (American Council of Life Insurers—ACLI) suggested two editorial changes to the CEJ recommended language. The first suggested change was to revise the phrase “for new illustrations on policies issued prior to the effective date of AG 49-A” to read “for new illustrations on policies sold prior to the effective date of AG 49-A” to be consistent with existing AG 49 language. The second suggested change, later in the same paragraph, was to insert the word “new” in prior to the words “product illustrations” to clarify that AG 49-A cannot be applied retroactively to in-force illustrations produced prior to the AG 49-A effective date.

Mr. Andersen made a motion, seconded by Mr. Ostlund, to adopt AG 49, including the ACLI editorial changes. The motion passed, with Ms. Fenwick dissenting.

2. **Adopted Amendment Proposal 2020-02**

Mr. Bayerle said the ACLI comment letter (Attachment Three-B) addresses their concern that for immaterial blocks of business, for which a company uses a conservative reserving approach, the demonstration required by amendment proposal 2020-02 (Attachment Three-C) may be unnecessary. He suggested that perhaps a robust conversation between the company and the state insurance regulator would better serve both parties. Ms. Hemphill said the requirements in Section 2.G of VM-20, Requirements for Principle-Based Reserves for Life Products, and the guidance note that follows, are consistent with the approach the ACLI suggests in its comment letter. She also noted that the requirement in VM-31, PBR Actuarial Report Requirements for Business Subject to a Principle-Based Valuation, that the demonstration be provided upon request regulator request, provides the opportunity for the company and its state insurance regulator to have the discussion the ACLI advocates in its comment letter. Mr. Bayerle said the fact that there are existing requirements makes the proposal unnecessary. Pat Allison (NAIC) said the proposal addresses areas of reporting where reviewers have noted that mandated steps are being skipped. She said the proposal assists companies by providing examples that help clarify the requirements.

Mr. Bock made a motion, seconded by Mr. Chou, to adopt amendment proposal 2020-02. The motion passed unanimously.

Having no further business, the Life Actuarial (A) Task Force adjourned.
Actuarial Guideline XLIX

THE APPLICATION OF THE LIFE ILLUSTRATIONS MODEL REGULATION TO POLICIES WITH INDEX-BASED INTEREST

Background

The Life Insurance Illustrations Model Regulation (#582) was adopted by the NAIC in 1995. Since that time there has been continued evolution in product design, including the introduction of benefits that are tied to an external index or indices. Although these policies are subject to Model #582, not all of their features are explicitly referenced in the model, resulting in a lack of uniform practice in its implementation. In the absence of uniform guidance, two illustrations that use the same index and crediting method often illustrated different credited rates. The lack of uniformity can be confusing to potential buyers and can cause uncertainty among illustration actuaries when certifying compliance with Model #582.

This guideline provides uniform guidance for policies with index-based interest. In particular, this guideline:

1. Provides guidance in determining the maximum crediting rate for the illustrated scale and the earned interest rate for the disciplined current scale.
2. Limits the policy loan leverage shown in an illustration.
3. Requires additional consumer information (side-by-side illustration and additional disclosures) that will aid in consumer understanding.

Text

1. Effective Date

This Actuarial Guideline shall be effective as follows:

i. Sections 4 and 5 shall be effective for all new business and in force life insurance illustrations on policies sold on or after September 1, 2015.

ii. Effective March 1, 2017, Section 4 and Section 5 shall be effective for all in-force life insurance illustrations on policies within the scope of this actuarial guideline, regardless of the date the policy was sold.

iii. Sections 6 and 7 shall be effective for all new business and in force life insurance illustrations on policies sold on or after March 1, 2016.

iv. This actuarial guideline shall not apply for any new business or in force life insurance illustrations on policies sold on or after December 14, 2020.

v. Notwithstanding part iv of this section, an insurer may choose to utilize AG-49A guidance for new illustrations on policies sold prior to the effective date of AG49A provided that, one, the insurer utilizes AG-49A guidance for all new product illustrations subject to AG49, and, two, the insurer does not revert back to the AG-49 guidance.
1. Scope

This Actuarial Guideline shall apply to any life insurance illustration that meets both (i) and (ii), below:

   i. The policy is subject to Model #582.
   
   ii. Interest credits are linked to an external index or indices.

3. Definitions

A. **Alternate Scale**: A scale of non-guaranteed elements currently being illustrated such that:

   i. The credited rate for each Index Account does not exceed the lesser of the maximum credited rate for the illustrated scale less 100 basis points and the credited rate for the Fixed Account. If the insurer does not offer a Fixed Account with the illustrated policy, the credited rate for each Index Account shall not exceed the average of the maximum credited rate for the illustrated scale and the guaranteed credited rate for that account. However, the credited rate for each Index Account shall never be less than the guaranteed credited rate for that account.

   ii. If the illustration includes a loan, the illustrated rate credited to the loan balance does not exceed the illustrated loan charge.

   iii. All other non-guaranteed elements are equal to the non-guaranteed elements for the illustrated scale.

B. **Benchmark Index Account**: An Index Account with the following features:

   i. The interest calculation is based on the percent change in S&P 500® Index value only, over a one-year period using only the beginning and ending index values. (S&P 500® Index ticker: SPX)

   ii. An annual cap is used in the interest calculation.

   iii. The annual floor used in the interest calculation shall be 0%.

   iv. The participation rate used in the interest calculation shall be 100%.

   v. Interest is credited once per year.

   vi. Account charges do not exceed the account charges for any corresponding Index Accounts within the policy in any policy year. If Index Accounts with different levels of account charges are offered with the illustrated policy, more than one Benchmark Index Account may be used in determining the maximum illustrated crediting rates for the policy’s Index Accounts, subject to the requirements of 5.D.. However, for each Index Account within the policy, only one Benchmark Index Account shall apply. Any rate calculated in 4 (B) shall not apply for an Index Account if the account charges for the applicable Benchmark Index Account exceed the account charges for that Index Account in any policy year. Account charges include all charges applicable to an Index Account, whether deducted from policy values or from premiums or other amounts transferred into such Index Account.

   vii. Additional amounts credited are not less than the additional amounts credited for any corresponding Index Accounts within the policy in any policy year. Any rate calculated in 4 (B) shall not apply for an Index Account if the additional amounts credited for the applicable Benchmark Index Account are less than the additional amounts credited for that Index Account in any policy year. Additional amounts include all credits that increase policy values, including but not limited to experience refunds or bonuses.

   viii. There are no limitations on the portion of account value allocated to the account.

C. **Fixed Account**: An account where the credited rate is not tied to an external index or indices.
4. Illustrated Scale

The credited rate for the illustrated scale for each Index Account shall be limited as follows:

A. Calculate the geometric average annual credited rate for each applicable Benchmark Index Account for the 25-year period starting on 12/31 of the calendar year that is 66 years prior to the current calendar year (e.g., 12/31/1949 for 2015 illustrations) and for each 25-year period starting on each subsequent trading day thereafter, ending with the 25-year period that ends on 12/31 of the prior calendar year.

i. If the insurer offers an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use the current annual cap for the applicable Benchmark Index Account in 4 (A).

ii. If the insurer does not offer an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use actuarial judgment to determine a hypothetical, supportable current annual cap for a hypothetical, supportable Index Account that meets the definition of a Benchmark Index Account, and shall use that cap in 4 (A).

B. For each applicable Benchmark Index Account, the arithmetic mean of the geometric average annual credited rates calculated in 4 (A) shall be the maximum credited rate(s) for the illustrated scale.

C. For other Index Accounts using other equity, bond, and/or commodity indexes, and/or using other crediting methods, the illustration actuary shall use actuarial judgment to determine the maximum credited rate for the illustrated scale. The determination shall reflect the fundamental characteristics of the Index Account and the parameters shall have the appropriate relationship to the expected risk and return of the applicable Benchmark Index Account. In no event shall the credited rate for the illustrated scale exceed the applicable rate calculated in 4 (B).

D. At the beginning of each calendar year, the insurer shall be allowed up to three (3) months to update the credited rate for each Index Account in accordance with 4 (B) and 4 (C).

5. Disciplined Current Scale

The earned interest rate for the disciplined current scale shall be limited as follows:

A. If an insurer engages in a hedging program for index-based interest, the assumed earned interest rate underlying the disciplined current scale shall not exceed 145% of the annual net investment earnings rate (gross portfolio earnings less provisions for investment expenses and default costs) of the general account assets (excluding hedges for index-based credits) allocated to support the policy.

B. If an insurer does not engage in a hedging program for index-based interest, the assumed earned interest rate underlying the disciplined current scale shall not exceed the annual net investment earnings rate of the general account assets allocated to support the policy.

C. These experience limitations shall be included when testing for self-support and lapse-support under Model #582, accounting for all benefits including illustrated bonuses.

D. If more than one Benchmark Index Account is used for an illustrated policy, each set of Index Accounts that correspond to each Benchmark Index Account must independently pass the self-support and lapse-support tests under Model #582, subject to the limitations in 5 (A), (B), and (C). All experience assumptions that do not directly relate to the Index Accounts as to expenses, mortality, investment earnings rate of the general account assets, lapses, and election of any Fixed Account shall equal the assumptions used in the testing for the entire policy.

6. Policy Loans
If the illustration includes a loan, the illustrated rate credited to the loan balance shall not exceed the illustrated loan charge by more than 100 basis points.

7. Additional Standards

The basic illustration shall also include the following:

A. A ledger using the Alternate Scale shall be shown alongside the ledger using the illustrated scale with equal prominence.

B. A table showing the minimum and maximum of the geometric average annual credited rates calculated in 4 (A).

C. For each Index Account illustrated, a table showing actual historical index changes and corresponding hypothetical interest rates using current index parameters for the most recent 20-year period.
October 15, 2020

Mr. Mike Boerner
Chair, NAIC Life Actuarial Task Force (LATF)

Re: APF 2020-02

Dear Mr. Boerner:

The American Council of Life Insurers (ACLI) appreciates the opportunity to submit the following comments on APF 2020-02.

ACLI remains concerned about the need for this amendment. ACLI agrees there should not be inappropriate simplifications, approximations, and modeling efficiency techniques (“simplifying approaches”). At the same time, we question the need for demonstrations where the simplifying approach on its face is reasonable. For example, an immaterial block using a conservative reserving method under VM-A and VM-C should be considered a reasonable simplifying approach without the need for a deterministic reserve demonstration. If a regulator has a concern, it would be appropriate to have a discussion with the company who can explain the rationale behind the simplifying approach. We believe these concerns would be better addressed through discussions with individual companies rather than additional Valuation Manual requirements.

We appreciate the consideration of our comments, and look forward to discussing on a future LATF call. Thank you.

Sincerely,

Brian Bayerle
Senior Actuary

cc: Reggie Mazyck, NAIC
Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force Amendment Proposal Form

1. Identify yourself, your affiliation and a very brief description (title) of the issue.

Joint submission by NAIC staff and Staff of Office of Principle-Based Reserving, California Department of Insurance – Clarify areas of confusion relating to the topic of materiality.

2. Identify the document, including the date if the document is “released for comment,” and the location in the document where the amendment is proposed:


3. Show what changes are needed by providing a red-line version of the original verbiage with deletions and identify the verbiage to be deleted, inserted or changed by providing a red-line (turn on “track changes” in Word®) version of the verbiage. (You may do this through an attachment.)

See attached Appendix.

4. State the reason for the proposed amendment? (You may do this through an attachment.)

See attached Appendix.

NAIC Staff Comments:

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ISSUE:

Skipping steps in VM-20 is not allowed on grounds of immateriality. Some companies are skipping some VM-20 requirements altogether, without providing a simplification, approximation, or modeling technique that satisfies the VM-20 Section 2.G requirement that such simplifications neither materially understate nor downwardly bias the reserves. Simply skipping portions of the requirements, such as not computing an NPR, or not computing the DR and/or SR when exclusion tests have not been performed, inherently bias the reserve downward since their omission can only be neutral or decrease the resulting reserve. Without computing even a simplified model for Section 2.G analysis that shows there is not a decrease in the final reserve, this makes the skipping of the step violate Section 2.G. This APF clarifies that these types of omissions are not allowed. This has always been the case, but perhaps needs more emphasis in the Valuation Manual.

SECTION:

VM-20 Section 2.H and new Section 2.I, and VM-20 Section 7.E.1.g

REDLINE:

VM-20 Section 2.H

H. The company shall establish, for the DR and SR, a standard containing the criteria for determining whether an assumption, risk factor or other element of the principle-based valuation has a material impact on the size of the reserve. This standard shall be applied when identifying material risks under VM-20 Section 9.B.1. Such a standard shall also apply to the NPR with respect to VM-20 Section 2.G.

Guidance Note:

For example, the standard may be expressed as an impact of more than X dollars or Y% of the reserve, whichever is greater, where X and Y are chosen in a manner that is meant to stand the test of time and not need periodic revision.

The standard is based on the impact relative to the size of the NPR, DR and SR as opposed to the impact relative to the overall financial statement (e.g., total company reserves or surplus). Reviewing items that may lead to a material misstatement of the financial statement in the current year is appropriate in its own context, but it is not appropriate for identifying material risks for PBR, which itself is an emerging risk.

Note that the criteria apply to the NPR, DR and SR, and not just the final reported reserve. For example, if the DR is less than the NPR, the criteria still apply to the DR.

The standard also applies to exclusion tests, as they are an element of the principle-based valuation.
VM-20 Section 2.1

I. Section 2.G and Section 2.H provide companies some flexibility in assumption setting and modeling methodologies, but they do not allow for skipping mandated steps without providing a valid approximation, simplification, or modeling technique under Section 2.G that neither materially understates nor downwardly biases the reserve.

Examples of omissions that would not satisfy VM-20 Section 2.G: not computing even a simplified NPR, not computing even a simplified DR or SR without having passed the relevant exclusion test(s), omitting prescribed mortality margins, not establishing any lapse margins, not building even a simplified asset model for the DR, using the alternative investment strategy without first determining that it produces a higher reserve than the company investment strategy, and ignoring post-level term losses.

**Guidance Note:** The issue here is not the use of approximations; it is about skipping mandated VM-20 requirements. Thus, for example, this does not rule out the use of a relatively simple asset model that is acceptable pursuant to VM-20 Section 7.E.1.a, nor the judicious use of the previous year’s assumption development work to save time and effort.

VM-20 Section 7.E.1.g Guidance Note

**Guidance Note:** VM-31 requires a demonstration of compliance with VM-20 Section 7.E.1.g. In many cases, particularly if the model investment strategy does not involve callable assets, it is expected that the demonstration of compliance will not require running the reserve calculation twice. For example, an analysis of the weighted average net reinvestment spread on new purchases by projection year (gross spread minus prescribed default costs minus investment expenses) of the model investment strategy compared to the weighted average net reinvestment spreads by projection year of the alternative strategy may suffice. The assumed mix of asset types, asset credit quality or the levels of non-prescribed spreads for other fixed income investments may need to be adjusted to achieve compliance. Or, the company may be able to rely on a previous year’s determination as to which strategy produces a higher reserve, if the assets and strategy have not changed very substantially since then.
REASONING:

Some companies have mistakenly believed that it was permissible to skip certain significant steps outlined in VM-20, without using a valid approximation or simplification that they have shown does not materially understate or bias reserves in a downward direction.

Note: Comment letters were received on an earlier draft of this APF, in response to which this newer version has eliminated any mention of PIMR and has made it clearer that a simplified asset model may in some circumstances be acceptable and that a full-blown run of both the actual investment strategy and the alternative investment strategy is not necessarily something that has to be done every year.
The Life Actuarial (A) Task Force met Oct. 27, 2020, in joint session with the Life Risk-Based Capital (E) Working Group. The following Task Force members participated: Doug Slape, Chair, represented by Mike Boerner and Rachel Hemphill (TX); Tynesia Dorsey, Vice Chair, represented by Peter Weber (OH); Jim L. Ridling represented by Steve Ostlund (AL); Ricardo Lara represented by Ben Bock and Perry Kupferman (CA); Michael Conway represented by Eric Unger (CO); Andrew N. Mais represented by Wanchin Chou (CT); Doug Ommen represented by Eric Yanacheak (IA); Robert H. Muriel represented by Vincent Tsang (IL); Stephen W. Robertson represented by Karl Knable (IN); Vicki Schmidt represented by Nicole Boyd (KS); Grace Arnold represented by Fred Andersen and John Robinson (MN); Chlora Lindley-Myers represented by William Leung (MO); Bruce R. Ramge represented by Rhonda Ahrens (NE); Marlene Caride represented by Seong-min Eom (NJ); Russell Toal (NM); Linda A. Lacewell represented by Bill Carmello (NY); Glen Mulready represented by Andrew Schallhorn (OK); Tanji J. Northrup represented by Tomasz Serbinowski (UT); and Scott A. White represented by Craig Chupp (VA). The following Working Group members participated: Philip Barlow, Chair; Steve Ostlund (AL); Perry Kupferman (CA); Eric Unger (CO); Wanchin Chou (CT); Sean Collins (FL); Vincent Tsang (IL); John Robinson (MN); William Leung (MO); Rhonda Ahrens (NE); Seong-min Eom (NJ); Bill Carmello (NY); Andrew Schallhorn (OK); Mike Boerner (TX); and Tomasz Serbinowski (UT).

1. **Heard an ESG Implementation Project Update**

Pat Allison (NAIC) provided a presentation (Attachment Four-A) on the implementation project for the new economic scenario generator (ESG). The presentation focused on the scope of work for the selected ESG vendor, Conning & Company (Conning). Ms. Allison provided background information on the events that led the NAIC to consider purchasing an ESG, the development and initiation of the request for proposal (RFP), the selection process, and the choice of Conning as the selected vendor. She said that a detailed timeline supporting the January 2022 target implementation date is under development.

Ms. Allison said Conning will be involved in the initial training made available to NAIC staff, state insurance regulators and insurance companies. She noted that risk-neutral scenarios are not within the scope of the project. She said any company desiring to purchase access to risk-neutral scenarios should contact Conning for pricing information. The ESG is customizable, which allows state insurance regulators to create a “basic data set” of ESG scenarios that will be prescribed for statutory reporting. The “basic data set” will be available on the NAIC website for all users. Ms. Allision said the NAIC does not currently envision charging a fee to access the “basic data set,” but reserves the right to do so in the future. She said that Conning also offers a “robust data set, which non-regulators can purchase directly from Conning. There is no charge for state insurance regulators to access the “robust data set.” Ms. Allison said that state insurance regulators will determine the frequency of parameter updates Conning will make as part of its ongoing ESG support. Other services and tools available from Conning are detailed in the presentation, including requiring vendor support of field testing.

Having no further business, the Life Actuarial (A) Task Force adjourned.
ESG Implementation Project:
Background and Deliverables

Pat Allison, FSA, MAAA - NAIC Staff Support

October 27, 2020

Agenda

• Background
• Conning’s Scope of Work
  o Initial Deliverables
  o Ongoing Production, Maintenance and Support
• Summary of Optional Offerings
• Next Steps
### Background

**2017**
The Academy notified the Life Actuarial (A) Task Force (LATF) that it did not have the resources to maintain the ESGs, except in their current form until a suitable replacement could be found.

**7/16/19**
- LATF and the Life RBC Working Group (LRBC WG) requested that NAIC staff consider issuing a Request for Proposal (RFP).
- A group of regulators, NAIC staff, and subject-matter experts was formed to develop an RFP.

**3/4/20**
The NAIC issued an RFP to solicit proposals from ESG vendors to provide, maintain, and support an ESG producing real-world interest and equity scenarios to be prescribed for use in calculations of life and annuity Statutory reserves and capital.

**5/1/20**
Six proposals were reviewed by NAIC staff and regulators involved in drafting the RFP. Selection criteria included:
1. Qualifications of staff,
2. Professional reputation,
3. Ability to deliver requested items,
4. Capability to perform updates to ESG features, parameters, and tools in a timely manner,
5. Flexibility to work through the NAIC process to customize ESG features, parameters, and tools,
6. Robustness of documentation,
7. Quality of training materials and other support,

**9/30/20**
- NAIC Executive Committee approved the selection of Conning as the ESG vendor, along with funding
- NAIC executed a contract with Conning

**1/1/22**
Target Implementation date

### Conning’s Scope of Work: Initial Deliverables
Existing ESG, prior to regulator modifications

A. An existing ESG capable of producing real-world interest rate, equity, and bond fund return scenarios to be prescribed for use in calculations of life and annuity Statutory reserves according to the *Valuation Manual* (e.g., VM-20, VM-21) and capital under the NAIC RBC requirements (e.g., C3 Phase 1, C3 Phase 2).

- Conning’s GEMS® ESG was selected as the existing ESG. Potential modifications are to be determined.
- Risk-neutral scenarios are out of scope for this project; however, they are available (contact Conning for pricing).

Open meetings to discuss potential modifications

B. Meetings/initial training with NAIC staff, state regulators, and End Users as needed to discuss the ESG, related tools (see items D-H), and potential modifications.

- “End User” means the NAIC, state regulators, insurance companies, third-party consultants retained by state regulators, insurance companies, and any other person who makes use of the services.
- Joint open meetings of LATF and LRBC WG will be scheduled for educational purposes and discussions on potential modifications.
- Comparisons to the current prescribed ESG and tools will be necessary as part of this process.

*Note: Interested parties will have the opportunity to express their views regarding the ESG, parameters, tools, etc. during open LATF and/or LRBC WG meetings as regulators discuss these items and consider potential modifications. Please do not contact Conning directly for this purpose.*
Basic Data Set, to be prescribed for statutory reporting

C. Customization of ESG to reflect any modifications adopted by state regulators. The final ESG scenarios will be referred to as the Basic Data Set. **These scenarios will be prescribed for statutory reporting.**

- The RFP did not dictate specifications on model type, calibration, or parameters. Conning’s existing ESG will be customized as desired by regulators. The extent to which the output differs from the Academy ESG is to be determined.

- For the Basic Data Set, the following data are available:
  - Treasury Yields – 1M, 3M, 6M, 1Y – 30Y by year; Spot and Coupon Yields.
  - All Returns will be split between Total, Income and Price.

- A link to the Basic Data Set will be provided on the NAIC website. This may be accessed by any End User.

- The NAIC does not currently envision charging for the Basic Data Set. However, the NAIC reserves the right to do so in the future.

Optional Robust Data Set

- The RFP requested information on any additional functionality available beyond the minimum RFP requirements.

- Conning has a Robust Data Set that expands on the Basic Data Set to include the following additional data fields:
  - Corporate Yields by Rating: AAA, AA, A, BBB and High Yield; same items as Treasury Yields.
  - Transition probabilities between each of these ratings and Default.
  - Default recovery percentages by Rating.
  - Fixed Income Returns – MBS, ABS, CMBS, CLOs, Commercial Paper.
  - Alternative Investments – Hedge Funds, Private Equities, Real Estate.
  - All Returns will be split between Total, Income and Price.

- The Robust Data Set will produce the same interest rate, equity, and bond fund return scenarios as the Basic Data Set (the scenarios in the Basic Data Set are a subset of those in the Robust Data Set).

- **The Robust Data Set is optional.** Please contact Conning for pricing. This is included free of charge for regulators.
Conning’s Scope of Work:
Ongoing Production, Maintenance and Support

Tools and Calibration Criteria

D. A scenario reduction tool to allow companies to choose a specific number of representative scenarios (e.g. 100, 500, 1000, etc.) from a universe of 10,000 scenarios.
   
   • Scenario subsets provided by the tool as of a valuation date must contain the same scenarios for all users of the tool.

E. Calibration criteria used to determine whether stratified scenario subsets are sufficiently dispersed relative to the universe of 10,000 scenarios.

F. A tool to generate scenarios for the VM-20 Stochastic Exclusion Ratio Test.

G. A tool to generate the VM-21 Company-Specific Market Path method scenarios.

H. A tool to generate statistics, to be determined, on the output of the NAIC Economic Scenario Files. Validation reports will be provided which summarize the key characteristics of the Basic Data Set (and the Robust Data Set, if purchased).
Documentation and Training

I. Conning will provide full documentation on specifications, calibration, and tools. This will include:

1. Full documentation of the necessary components used to develop the Basic Data Set.
2. Documentation for all related tools described in items D-H.

J. Conning will provide robust training materials for End Users.

Note:

• A link to the documentation and training materials will be provided on the NAIC website. This may be accessed by any End User.
• End Users who choose to purchase the Robust Data Set will have access to Conning’s Software Documentation Library.

Ongoing Production and Maintenance

K. Conning will run the Basic Data Set (and Robust Data Set, if purchased) as of each month-end and produce the required scenarios and related tools described in items D-H.

• This process must be completed in time to post scenarios and related tools by 4:00 PM Central Time on the first business day of the following month.

• Validation reports for the Basic Data Set (and the Robust Data Set, if purchased), and additional statistics are expected to be delivered simultaneously with the scenario files.

• A link to the scenario files, validation reports, statistics, related tools in items D-H, documentation, and training materials will be provided on the NAIC website. Access will be provided for End Users regardless of whether they have licensed Conning’s software.
Ongoing Production and Maintenance

L. Conning will develop parameter updates at a frequency determined by the state regulators. The process will include the following steps:

1. Perform research on potential changes as requested by state regulators.

2. Document and present potential changes to state regulators for exposure and adoption. Attend regulator meetings as needed to respond to questions/comments received during the exposure period. Materials to be provided for consideration of changes should include: a) discussion on how changes were vetted for complex interactions between parameters, b) attribution analysis showing the impact of each change, and c) documentation on the above in sufficient detail to allow independent review.

3. Reflect final adopted updates in a timely manner and provide evidence to the NAIC that they were made appropriately.

4. Update documentation impacted by any changes.

M. Conning will update training materials for End Users.

Ongoing Support

N. Conning will provide full support to End Users who have licensed the Software.

O. Conning will provide help desk support to End Users who have not licensed the software. This will include phone support as well as an e-mail address to allow End Users to submit questions.

P. Conning will provide necessary support for field testing under regulatory reserving and capital frameworks.

Q. Conning will provide the following information annually:

1. Back-testing report comparing the projected results to what actually happened over the previous year.

2. Summary information of the number and types of questions submitted to Conning via the support e-mail address; and steps taken to address these concerns (e.g., additional documentation created).
Summary of Optional Offerings
(contact Conning for pricing)

• The RFP requested information on any additional items offered by the vendor beyond the RFP minimum requirements. The NAIC’s contract with Conning includes pricing for the following optional items, and states that the prices quoted will be held for 5 years.
  o Robust Dataset* (see slide 8 for details) - Prices are lower if produced quarterly instead of monthly.
  o ESG software licensing
  o Application Programming Interface (API) tool
    ▪ Conning can assist users in the implementation of the API (at a one-time cost)
    ▪ With the API, companies will be able to generate their selected data directly. As part of this option, Conning will deliver the necessary calibration parameters this code needs to generate the monthly files being delivered to the NAIC. When used with these parameters, this code will produce the exact same results, on a scenario by scenario basis, as the ones delivered to the NAIC. However, it will also allow clients to produce data sets that meet their own needs: more scenarios, more periods, altered starting conditions, etc.

• Risk neutral scenarios are also available

• The NAIC has not entered into a revenue-sharing agreement with Conning

*Included free of charge for regulators

Next Steps

• Please send any questions on this presentation to RMazyck@naic.org

• A Joint LATF / LRBC WG open meeting will be scheduled for Conning to provide an overview of the ESG
Life Actuarial (A) Task Force
Virtual Meeting
October 22, 2020

The Life Actuarial (A) Task Force met Oct. 22, 2020. The following Task Force members participated: Doug Slape, Chair, represented by Mike Boerner and Rachel Hemphill (TX); Tynesia Dorsey, Vice Chair, represented by Peter Weber (OH); Ricardo Lara represented by Ben Bock and Perry Kupferman (CA); Michael Conway represented by Eric Unger (CO); Andrew N. Mais represented by Wanchin Chou (CT); Doug Ommen represented by Mike Yanacheak (IA); Robert H. Muriel represented by Vincent Tsang (IL); Stephen W. Robertson represented by Karl Knable (IN); Vicki Schmidt represented by Nicole Boyd (KS); Grace Arnold represented by Fred Andersen and John Robinson (MN); Chlora Lindley-Myers represented by William Leung (MO); Bruce R. Ramge represented by Rhonda Ahrens (NE); Marlene Caride represented by Kevin Clarkson (NJ); Russell Toal (NM); Linda A. Lacewell represented by Bill Carmello (NY); Glen Mulready represented by Andrew Schallhorn (OK); Tanji J. Northrup represented by Tomasz Serbinowski (UT); and Scott A. White represented by Craig Chupp (VA).

1. Adopted the AG 49-A Technical Amendment

Mr. Leung made a motion, seconded by Mr. Weber, to adopt the technical amendment to Actuarial Guideline XLIX-A—The Application of the Life Illustrations Model Regulation to Policies With Index-Based Interest Sold On or After November 25, 2020 (AG 49-A) (Attachment A). The motion passed, with Mr. Carmello dissenting.

2. Re-Exposed Revisions to AG 49

Mr. Boerner said that an editorial change will be made to Actuarial Guideline XLIX—The Application of the Life Illustrations Model Regulation to Policies With Index-Based Interest (AG 49) to have its effective date coincide with the effective date of AG 49-A. Jennifer Webb (Pacific Life), representing the IUL Coalition, supported adoption of the AG 49 revisions and agreed with the change in the effective date. Birny Birnbaum (Center for Economic Justice—CEJ) said the CEJ comment letter (Attachment B) requests a revision to the guideline that would allow companies the option of applying AG 49-A to new in-force illustrations for policies issued prior to the effective date of AG 49-A. Mr. Andersen said the AG 49-A requirements are more strict than the current AG 49 requirements. He suggested that companies can currently apply the AG 49-A requirements and still comply with AG 49. He said that makes the revisions proposed by the CEJ unnecessary. Mr. Birnbaum responded that it is not clear that AG 49-A will provide an improved illustration in all cases. He also said the revisions clarify the guideline and do not allow companies opportunities to cherry-pick. Mr. Andersen said the revision is unnecessary, but it does not do any harm.

Mr. Sartain made a motion, seconded by Mr. Yanacheak, to expose the CEJ revisions to AG 49 (Attachment C) for a seven-day public comment period ending Oct. 28. The motion passed unanimously.

3. Re-Exposed Amendment Proposal 2020-09

Ms. Hemphill said revisions to amendment proposal 2020-09 allows the life principle-based reserving (PBR) exemption for companies not meeting the required premium thresholds for exemption from VM-20, Requirements for Principle-Based Reserves for Life Products, but that generate new business only from term conversions or the exercising of other policyholder options guaranteed in the policy. She said the proposal also removes the requirement for companies to file the statement of exemption annually. She noted that a referral will be sent to the Blanks Working (E) Group recommending modification of the VM-20 Supplement to reflect the changes to the life PBR exemption.

Ms. Ahrens made a motion, seconded by Mr. Robinson, to expose amendment proposal 2020-09 (Attachment D) and the accompanying blanks referral (Attachment E), for a 10-day public comment period ending Nov. 2. The motion passed unanimously.

Having no further business, the Life Actuarial (A) Task Force adjourned.
Life Actuarial (A) Task Force  
Technical Amendment to AG 49-A

Purpose: This amendment is intended to revise the regulation, adopted by the Executive (EX) Committee and Plenary on Aug. 14, to coordinate its effective date with the anticipated adoption of proposed revisions to *Actuarial Guideline XLIX—The Application of the Life Illustrations Model Regulation to Policies With Index-Based Interest (AG 49)*, to be considered for adoption by the Executive (EX) Committee and Plenary at the Fall National Meeting.

Background: *Actuarial Guideline XLIX-A—The Application of the Life Illustrations Model Regulation to Policies With Index-Based Interest Sold On or After November 25, 2020* (AG 49A) applies to illustrations on applicable policies sold on or after Nov. 25. The Life Actuarial (A) Task Force recently exposed a revision to the existing AG 49 requirements to limit its application to in-force illustrations on policies sold before Nov. 25.

The Nov. 25 effective date of AG 49-A was chosen in anticipation of the Executive (EX) Committee and Plenary adoption of the revisions to AG 49 at the Fall National Meeting, initially scheduled for mid-November. Due to the impact of the corona virus, the meeting was moved to early December, delaying the adoption of the AG 49 revisions and necessitating this amendment for changes to the effective date for AG 49-A.

Amendments:

- The date reference in the title of the regulation is changed from “on or after November 25” to “on or after December 14,” reflecting the new anticipated adoption date of the proposed revisions to AG 49 due to the shift in the Fall National Meeting dates.
- Language in the effective date paragraph is changed to make the guideline effective on or after Dec. 14.
Comments for the Center for Economic Justice

To the NAIC Life Actuarial Task Force

Proposed Revisions to AG 49

September 15, 2020

The Center for Economic Justice (CEJ) offers the following comments on the June 25, 2020 exposure draft of revisions to the effective date of AG49.

The NAIC has unfortunately decided to apply AG49-A only to illustrations for policies sold on or after the effective date of AG49-A. This means that current AG49 continues to apply to new illustrations on policies sold prior to the effective date of AG49-A. The proposed revisions to AG49 are an addition to the Effective Date section stating:

iv. This actuarial guideline shall not apply for any new business or in force life insurance illustrations on policies sold on or after [greater of 5 months after LATF adoption and 3 months after EX/Plenary Adoption of AG 49-A].

This proposed revision would therefore forbid an insurer who wants to provide more realistic and less deceptive new illustrations on in-force policies issued before the effective date of AG49-A from providing those new illustrations consistent with the consumer protections of AG49-A. Further, some insurers may wish to utilize the AG49-A methodologies on all new illustrations to avoid having to maintain separate illustration platforms for policies issued before and after the effective date of AG49-A.

We request that the following additional revision be added to AG49:

v. Notwithstanding part iv of this section, an insurer may choose to utilize AG-49A guidance for new illustrations on policies issued prior to the effective date of AG49A provided that, one, the insurer utilizes AG-49A guidance for all product illustrations subject to AG49, and, two, the insurer does not revert back to the AG-49 guidance.
THE APPLICATION OF THE LIFE ILLUSTRATIONS MODEL REGULATION TO POLICIES WITH INDEX-BASED INTEREST

Background

The *Life Insurance Illustrations Model Regulation* (#582) was adopted by the NAIC in 1995. Since that time there has been continued evolution in product design, including the introduction of benefits that are tied to an external index or indices. Although these policies are subject to Model #582, not all of their features are explicitly referenced in the model, resulting in a lack of uniform practice in its implementation. In the absence of uniform guidance, two illustrations that use the same index and crediting method often illustrated different credited rates. The lack of uniformity can be confusing to potential buyers and can cause uncertainty among illustration actuaries when certifying compliance with Model #582.

This guideline provides uniform guidance for policies with index-based interest. In particular, this guideline:

(1) Provides guidance in determining the maximum crediting rate for the illustrated scale and the earned interest rate for the disciplined current scale.

(2) Limits the policy loan leverage shown in an illustration.

(3) Requires additional consumer information (side-by-side illustration and additional disclosures) that will aid in consumer understanding.

Text

1. Effective Date

This Actuarial Guideline shall be effective as follows:

i. Sections 4 and 5 shall be effective for all new business and in force life insurance illustrations on policies sold on or after September 1, 2015.

ii. Effective March 1, 2017, Section 4 and Section 5 shall be effective for all in-force life insurance illustrations on policies within the scope of this actuarial guideline, regardless of the date the policy was sold.

iii. Sections 6 and 7 shall be effective for all new business and in force life insurance illustrations on policies sold on or after March 1, 2016.

iv. This actuarial guideline shall not apply for any new business or in force life insurance illustrations on policies sold on or after December 14, 2020.

v. Notwithstanding part iv of this section, an insurer may choose to utilize AG-49A guidance for new illustrations on policies issued prior to the effective date of AG49A provided that, one, the insurer utilizes AG-49A guidance for all product illustrations subject to AG49, and, two, the insurer does not revert back to the AG-49 guidance.
1. **Scope**

This Actuarial Guideline shall apply to any life insurance illustration that meets both (i) and (ii), below:

i. The policy is subject to Model #582.

ii. Interest credits are linked to an external index or indices.

3. **Definitions**

A. **Alternate Scale**: A scale of non-guaranteed elements currently being illustrated such that:

i. The credited rate for each Index Account does not exceed the lesser of the maximum credited rate for the illustrated scale less 100 basis points and the credited rate for the Fixed Account. If the insurer does not offer a Fixed Account with the illustrated policy, the credited rate for each Index Account shall not exceed the average of the maximum credited rate for the illustrated scale and the guaranteed credited rate for that account. However, the credited rate for each Index Account shall never be less than the guaranteed credited rate for that account.

ii. If the illustration includes a loan, the illustrated rate credited to the loan balance does not exceed the illustrated loan charge.

iii. All other non-guaranteed elements are equal to the non-guaranteed elements for the illustrated scale.

B. **Benchmark Index Account**: An Index Account with the following features:

i. The interest calculation is based on the percent change in S&P 500® Index value only, over a one-year period using only the beginning and ending index values. (S&P 500® Index ticker: SPX)

ii. An annual cap is used in the interest calculation.

iii. The annual floor used in the interest calculation shall be 0%.

iv. The participation rate used in the interest calculation shall be 100%.

v. Interest is credited once per year.

vi. Account charges do not exceed the account charges for any corresponding Index Accounts within the policy in any policy year. If Index Accounts with different levels of account charges are offered with the illustrated policy, more than one Benchmark Index Account may be used in determining the maximum illustrated crediting rates for the policy’s Index Accounts, subject to the requirements of 5.D. However, for each Index Account within the policy, only one Benchmark Index Account shall apply. Any rate calculated in 4 (B) shall not apply for an Index Account if the account charges for the applicable Benchmark Index Account exceed the account charges for that Index Account in any policy year. Account charges include all charges applicable to an Index Account, whether deducted from policy values or from premiums or other amounts transferred into such Index Account.

vii. Additional amounts credited are not less than the additional amounts credited for any corresponding Index Accounts within the policy in any policy year. Any rate calculated in 4 (B) shall not apply for an Index Account if the additional amounts credited for the applicable Benchmark Index Account are less than the additional amounts credited for that Index Account in any policy year. Additional amounts include all credits that increase policy values, including but not limited to experience refunds or bonuses.

viii. There are no limitations on the portion of account value allocated to the account.

C. **Fixed Account**: An account where the credited rate is not tied to an external index or indices.
4. Illustrated Scale

The credited rate for the illustrated scale for each Index Account shall be limited as follows:

A. Calculate the geometric average annual credited rate for each applicable Benchmark Index Account for the 25-year period starting on 12/31 of the calendar year that is 66 years prior to the current calendar year (e.g., 12/31/1949 for 2015 illustrations) and for each 25-year period starting on each subsequent trading day thereafter, ending with the 25-year period that ends on 12/31 of the prior calendar year.

i. If the insurer offers an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use the current annual cap for the applicable Benchmark Index Account in 4 (A).

ii. If the insurer does not offer an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use actuarial judgment to determine a hypothetical, supportable current annual cap for a hypothetical, supportable Index Account that meets the definition of a Benchmark Index Account, and shall use that cap in 4 (A).

B. For each applicable Benchmark Index Account, the arithmetic mean of the geometric average annual credited rates calculated in 4 (A) shall be the maximum credited rate(s) for the illustrated scale.

C. For other Index Accounts using other equity, bond, and/or commodity indexes, and/or using other crediting methods, the illustration actuary shall use actuarial judgment to determine the maximum credited rate for the illustrated scale. The determination shall reflect the fundamental characteristics of the Index Account and the parameters shall have the appropriate relationship to the expected risk and return of the applicable Benchmark Index Account. In no event shall the credited rate for the illustrated scale exceed the applicable rate calculated in 4 (B).

D. At the beginning of each calendar year, the insurer shall be allowed up to three (3) months to update the credited rate for each Index Account in accordance with 4 (B) and 4 (C).

5. Disciplined Current Scale

The earned interest rate for the disciplined current scale shall be limited as follows:

A. If an insurer engages in a hedging program for index-based interest, the assumed earned interest rate underlying the disciplined current scale shall not exceed 145% of the annual net investment earnings rate (gross portfolio earnings less provisions for investment expenses and default costs) of the general account assets (excluding hedges for index-based credits) allocated to support the policy.

B. If an insurer does not engage in a hedging program for index-based interest, the assumed earned interest rate underlying the disciplined current scale shall not exceed the annual net investment earnings rate of the general account assets allocated to support the policy.

C. These experience limitations shall be included when testing for self-support and lapse-support under Model #582, accounting for all benefits including illustrated bonuses.

D. If more than one Benchmark Index Account is used for an illustrated policy, each set of Index Accounts that correspond to each Benchmark Index Account must independently pass the self-support and lapse-support tests under Model #582, subject to the limitations in 5 (A), (B), and (C). All experience assumptions that do not directly relate to the Index Accounts as to expenses, mortality, investment earnings rate of the general account assets, lapses, and election of any Fixed Account shall equal the assumptions used in the testing for the entire policy.

6. Policy Loans
If the illustration includes a loan, the illustrated rate credited to the loan balance shall not exceed the illustrated loan charge by more than 100 basis points.

7. Additional Standards

The basic illustration shall also include the following:

A. A ledger using the Alternate Scale shall be shown alongside the ledger using the illustrated scale with equal prominence.

B. A table showing the minimum and maximum of the geometric average annual credited rates calculated in 4 (A).

C. For each Index Account illustrated, a table showing actual historical index changes and corresponding hypothetical interest rates using current index parameters for the most recent 20-year period.
Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

1. Identify yourself, your affiliation and a very brief description (title) of the issue.

Identification:
Rachel Hemphill, Texas Department of Insurance

Title of the Issue:
1. Modify Life PBR Exemption to not require annual exemption requests if the company continues to meet the premium thresholds and does not have any ULSG with material SG.
2. Not require VM-20 when all new issues are conversions.

2. Identify the document, including the date if the document is “released for comment,” and the location in the document where the amendment is proposed:

Valuation Manual Section II, Subsection 1.D
January 1, 2020 NAIC Valuation Manual

3. Show what changes are needed by providing a red-line version of the original verbiage with deletions and identify the verbiage to be deleted, inserted or changed by providing a red-line (turn on “track changes” in Word®) version of the verbiage. (You may do this through an attachment.)

See attached.

4. State the reason for the proposed amendment? (You may do this through an attachment.)

Reduce filing burden for companies and state regulators by making the Life PBR Exemption a one-time filing until conditions for the exemption change. Allow exemption for companies that do not meet the premium thresholds, but are only issuing new policies that would be subject to VM-20 due to conversions from existing policies being valued under the pre-PBR framework.

* This form is not intended for minor corrections, such as formatting, grammar, cross-references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:
W:\National Meetings\2010...\TF\LHA
Valuation Manual Section II, Subsection 1.D

D. Life PBR Exemption

1. A company meeting the condition in D.2 below may file a statement of exemption for ordinary life insurance policies, except for policies in D.3 below, issued directly or assumed during the current calendar year, that would otherwise be subject to VM-20. If a company has no business issued directly or assumed during the current calendar year that would otherwise be subject to VM-20, a statement of exemption is not required. For an initial exemption, such a statement must be filed with the domiciliary commissioner prior to July 1 of that year certifying that condition D.2 was met based on premiums in force from the prior calendar year annual statement. The statement of exemption must also be included with the NAIC filing for the second quarter of that year.

The domiciliary commissioner may reject such statement prior to Sept. 1 and require the company to follow the requirements of VM-20 for the ordinary life policies covered by the statement.

If an initial filed statement is not rejected by the domiciliary commissioner, the filing of such a statement is not required in future calendar years, as long as the company continues to meet the condition in D.2 below; rather, ongoing exemptions for each new calendar year will be deemed to not be rejected, unless: 1) the company fails to meet the condition in D.2 below, 2) the policies contain those in D.3 below, or 3) the domiciliary commissioner notifies the company prior to Sept. 1 and notifies them that the statement of exemption is rejected. If any of these three criteria occur, then the current ongoing exemption is rejected and a new initial statement of exemption must be actively filed and not rejected in order for the company to exempt additional policies. In the case of an ongoing exemption, rather than include the statement of exemption with the NAIC filing for the second quarter of that year, the company should enter “SEE EXPLANATION” in response to the Life PBR Exemption supplemental interrogatory and provide an explanation, including the calendar year that the company actively filed and was granted the Life PBR Exemption and confirmation that none of the following apply: 1) the company fails to meet the condition in D.2 below, 2) the policies exempted contain those in D.3 below, or 3) the domiciliary commissioner contacted the company and notified them that the statement of exemption was rejected.

2. Condition for Exemption:
   a. The company has less than $300 million of ordinary life premiums, and if the company is a member of an NAIC group of life insurers, the group has combined ordinary life premiums of less than $600 million; or
   b. The only new policies subject to VM-20 being issued or assumed by the company are conversions from existing policies that are being valued under VM-A and VM-C and the company was exempted from, or otherwise not subject to, the requirements of VM-20 in the prior year.

3. Policies Excluded from the Life PBR Exemption:
   a. Universal life with secondary guarantee (ULSG) policies with a secondary guarantee that does not meet the VM-01, Definitions for Terms in Requirements, definition of a “non-material secondary guarantee.”

4. Each exemption, or lack of an exemption, applies only to policies issued or assumed in the current year, and it applies to all future valuation dates for those policies. The minimum reserve requirements for the ordinary life policies subject to the exemption are those pursuant to applicable methods required in VM-A and VM-C using the mortality as defined in VM-20 Section 3.C.1 and VM-M Section 1.H.

Valuation Manual Section II, Subsection 1.D - Footnote

1 Premiums are measured as total in force direct plus reinsurance assumed from an unaffiliated company from the ordinary life line of business reported in the prior calendar year life/health annual financial statement, Exhibit 1, Part 1, Column 3, “Ordinary Life Insurance” excluding premiums for guaranteed issue.
policies and preneed life contracts and excluding amounts that represent the transfer of reserves in force as of the effective date of a reinsurance assumed transaction and are reported in Exhibit 1 Part 1, Column 3 as ordinary life insurance premium. Preneed is as defined in VM-01.
NAIC BLANKS (E) WORKING GROUP

Blanks Agenda Item Submission Form

<table>
<thead>
<tr>
<th>BLANK(S) TO WHICH PROPOSAL APPLIES</th>
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<tbody>
<tr>
<td>[ X ] ANNUAL STATEMENT</td>
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<tr>
<td>[ ] QUARTERLY STATEMENT</td>
</tr>
<tr>
<td>[ X ] INSTRUCTIONS</td>
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<tr>
<td>[ ] CROSSCHECKS</td>
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<td>[ X ] Life, Accident &amp; Health/Fraternal</td>
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<td>[ ] Property/Casualty</td>
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<td>[ ] Health</td>
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Anticipated Effective Date: Annual 2022

IDENTIFICATION OF ITEM(S) TO CHANGE

See next page for details of changes to the VM-20 Reserves Supplement.

REASON, JUSTIFICATION FOR AND/OR BENEFIT OF CHANGE**

Changing the reporting for the Life PBR Exemption, corresponding to changes in the Life PBR Exemption in the Valuation Manual.

NAIC STAFF COMMENTS

Comment on Effective Reporting Date:

Other Comments:

** This section must be completed on all forms.

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IDENTIFICATION OF ITEM(S) TO CHANGE

VM-20 Reserves Supplement Blank:
- Part 2: Add Question 3, a disclosure of the year that the Life PBR Exemption was actively filed and a confirmation of the eligibility criteria in the case of ongoing exemptions. Also, correct references to a state “granting” an exemption, when it is really a state not rejecting the exemption.

VM-20 Reserves Supplement Instructions:
- Add instructions for the new disclosure item, Question 3. Also, correct references to a state “granting” an exemption, when it is really a state not rejecting the exemption.
This section of the Supplement should be completed by a company that has filed and been granted a Life PBR Exemption from that has not been rejected by its state of domicile.

If a company has filed a Life PBR Exemption that has not been rejected by its state of domicile, been granted a Life PBR Exemption, the company must indicate the source of the Life PBR Exemption, which could be defined in a state statute, a state regulation or in the NAIC-adopted Valuation Manual. If the source of the granted Life PBR Exemption is not the NAIC-adopted Valuation Manual, the company must disclose the criteria of the state’s Life PBR Exemption that the company has met, and the company must disclose the minimum reserve requirements that are required by the state of domicile. If the minimum reserve requirements of the state of domicile are the same as those specified in the NAIC-adopted Valuation Manual, the company may indicate: “Same as NAIC VM”. The company must also disclose the calendar year that the Life PBR Exemption was actively filed with and not rejected by its state of domicile and if it is prior to the year of the annual statement the company must confirm that they meet the criteria for an ongoing exemption that is deemed not to be rejected.

Companies whose individual ordinary life business is exempted from the requirements of VM-20 pursuant to a Life PBR Exemption are not required to complete Part 1 of this VM-20 Supplement.
<table>
<thead>
<tr>
<th>Question</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Yes</td>
<td>Has the company filed and been granted a Life PBR Exemption from the reserve requirements of VM-20 of the Valuation Manual that has not been rejected by their state of domicile?</td>
</tr>
<tr>
<td>2. Yes</td>
<td>If the response to Question 1 is &quot;Yes&quot;, then check the source of the granted &quot;Life PBR Exemption&quot; definition? (Check either 2.1, 2.2 or 2.3)</td>
</tr>
<tr>
<td>2.1 Yes</td>
<td>NAIC Adopted VM</td>
</tr>
<tr>
<td>2.2 Yes</td>
<td>State Statute (SVL)</td>
</tr>
<tr>
<td>2.3 Yes</td>
<td>State Regulation</td>
</tr>
<tr>
<td>3. Yes</td>
<td>If the response to Question 1 is &quot;Yes&quot;, then provide the calendar year that the company filed a Life PBR Exemption from the reserve requirements of VM-20 of the Valuation Manual that was not rejected by their state of domicile (as opposed to the exemption being deemed not to be procedurally proper).</td>
</tr>
</tbody>
</table>

Life PBR Exemption as defined in the NAIC adopted Valuation Manual (VM)

1. Has the company filed and been granted a Life PBR Exemption from the reserve requirements of VM-20 of the Valuation Manual that has not been rejected by their state of domicile? Yes [ ] No [ ]

2. If the response to Question 1 is "Yes", then check the source of the granted “Life PBR Exemption” definition? (Check either 2.1, 2.2 or 2.3)

2.1 NAIC Adopted VM [ ] Complete items “a” and “b”, as appropriate.
   a. Is the criteria in the State Statute (SVL) different from the NAIC adopted VM? Yes [ ] No [ ]
   b. If the answer to “a” above is “Yes”, provide the criteria the state has used to grant/reject the Life PBR Exemption (e.g., Group/Legal Entity criteria) and the minimum reserve requirements that are required by the state of domicile (if the minimum reserve requirements are the same as the Adopted VM, write SAME AS NAIC VM:)

2.2 State Statute (SVL) [ ] Complete items “a” and “b”, as appropriate.
   a. Is the criteria in the State Statute (SVL) different from the NAIC adopted VM? Yes [ ] No [ ]
   b. If the answer to “a” above is “Yes”, provide the criteria the state has used to grant/reject the Life PBR Exemption (e.g., Group/Legal Entity criteria) and the minimum reserve requirements that are required by the state of domicile (if the minimum reserve requirements are the same as the Adopted VM, write SAME AS NAIC VM:)

2.3 State Regulation [ ] Complete items “a” and “b”, as appropriate.
   a. Is the criteria in the State Regulation different from the NAIC adopted VM? Yes [ ] No [ ]
   b. If the answer to “a” above is “Yes”, provide the criteria the state has used to grant/reject the Life PBR Exemption (e.g., Group/Legal Entity criteria) and the minimum reserve requirements that are required by the state of domicile (if the minimum reserve requirements are the same as the Adopted VM, write SAME AS NAIC VM:)

3. If the response to Question 1 is "Yes", then provide the calendar year that the company filed a Life PBR Exemption from the reserve requirements of VM-20 of the Valuation Manual that was not rejected by their state of domicile (as opposed to the exemption being deemed not to be procedurally proper). If such calendar year is not the current calendar year for this statement, also provide confirmation that none of the following apply: 1) the company fails to meet the condition in VM Section II, Subsection 1.D.2, 2) the policies exempted contain those in VM Section II, Subsection 1.D.3 or 3) the domiciliary commissioner contacted the company prior to Sept. 1 and notified them that the statement of exemption was rejected.

...
Life Actuarial (A) Task Force  
Virtual Meeting  
October 8, 2020

The Life Actuarial (A) Task Force met Oct. 8, 2020. The following Task Force members participated: Doug Slape, Chair, represented by Mike Boerner and Rachel Hemphill (TX); Tynesia Dorsey, Vice Chair, represented by Peter Weber (OH); Jim L. Ridling represented by Steve Ostlund (AL); Ricardo Lara represented by Ben Bock and Perry Kupferman (CA); Michael Conway represented by Eric Unger (CO); Andrew N. Mais represented by Wanchin Chou (CT); Doug Ommen represented by Mike Yanacheak (IA); Robert H. Muriel represented by Vincent Tsang (IL); Vicki Schmidt represented by Nicole Boyd (KS); Grace Arnold represented by Fred Andersen and John Robinson (MN); Chlora Lindley-Myers represented by William Leung (MO); Bruce R. Ramge represented by Rhonda Ahrens (NE); Marlene Caride represented by Kevin Clarkson (NJ); Russell Toal (NM); Linda A. Lacewell represented by Bill Carmello and Mona Bhalla (NY); Glen Mulready represented by Andrew Schallhorn (OK); Tanji J. Northrup represented by Tomasz Serbinowski (UT); and Scott A. White represented by Craig Chupp (VA).

1. Adopted the AG 49-A Technical Amendment Letter

Reggie Mazyck (NAIC) explained that *Actuarial Guideline XLIX-A—The Application of the Life Illustrations Model Regulation to Policies With Index-Based Interest Sold On or After November 25, 2020* (AG 49-A) was adopted with a Nov. 25 effective date at the Summer National Meeting, under the assumption that a corresponding version of *Actuarial Guideline XLIX—The Application of the Life Illustrations Model Regulation to Policies With Index-Based Interest* (AG 49), which sunsets AG 49 for new issues, would also be adopted with a Nov. 25 effective date at the Fall National Meeting. He said that the rescheduling of the Fall National Meeting from mid-November to early December has delayed the anticipated adoption date of AG 49 and deferred its effective date to Dec. 14, 2020. He said that given the need for coordination of the effective dates of the two guidelines, the Task Force chair exposed a technical amendment (Attachment Six-A) that changes the effective date of AG 49-A to Dec. 14 for a public comment period ending Oct. 20. NAIC staff have written a letter explaining the reasons for the technical amendment and notifying state insurance regulators and industry members of the proposed change in the effective date of AG 49-A. The letter also clarifies that companies will not be required to comply with AG 49-A on Nov. 25.

Mr. Weber made a motion, seconded by Mr. Toal, to adopt the AG 49-A technical letter (Attachment Six-B). The motion passed, with Mr. Carmello dissenting.

2. Adopted Edits to Model #805

Mr. Boerner reminded Task Force members that the exposure (Attachment Six-C) of potential changes to the *Standard Nonforfeiture Law for Individual Deferred Annuities* (#805) provided 0.15%, 0.25%, 0.35% and 0.50% as options for the new minimum nonforfeiture interest rate floor. Mr. Leung said that indexed annuities already have a 1% reduction in their minimum nonforfeiture formula, which allows the policyholder to purchase additional elective benefits such as guaranteed minimum withdrawal benefits (GMWBs). He said that a similar benefit is not available to the purchaser of a traditional deferred annuity. He suggested that the nonforfeiture rate floor should vary by product. Mr. Mazyck said that Mr. Leung’s suggestion is outside of the scope of the Request for NAIC Model Law Development. Ms. Bhalla said the New York Financial Services Department opposes lowering the rate to 0.15% because it does not strike the correct balance between solvency concerns and consumer interests. Mr. Andersen noted that companies can offer rates in excess of the minimum nonforfeiture interest rate. He said the competitiveness of the annuity market will lead companies to provide rates reflective of their interest environment. Ms. Bhalla and Mr. Toal expressed their desire to retain the current 1% rate. Mr. Leung said he prefers 1% but is willing to vote for 0.50%. Mr. Boerner said the companies he conferred with said 0.50% would be a strain for both indexed and traditional deferred annuities.

Mr. Weber made a motion, seconded by Ms. Ahrens, to adopt 0.15% as the new minimum nonforfeiture interest rate floor for Model #805. The motion passed via a 14–3 roll call vote, with Mr. Carmello, Mr. Toal and Mr. Leung dissenting.

3. Exposed Amendment Proposal 2020-08

Tim Cardinal (Cardinalis 1 Consulting) said amendment proposal 2020-08 (Attachment Six-D) proposes a third methodology for aggregating company mortality experience, which allows a company to start in the middle, as opposed to using a top down or bottom up approach. Ms. Hemphill said the proposal is necessary because the *Valuation Manual* currently requires that a company exclusively use either a top down or bottom up approach. She said the proposal provides the language necessary to give a company
the option of using an approach that starts at an intermediate level. She cautioned that while the approach makes sense actuarially, the Task Force should consider its auditability.

Mr. Toal made a motion, seconded by Mr. Leung, to expose amendment proposal 2020-08 and the accompanying aggregation demonstration spreadsheet (Attachment Six-E) for a 30-day public comment period ending Nov. 10. The motion passed unanimously.

4. Adopted its 2020 Summer Meeting Minutes

Mr. Ostlund made a motion, seconded by Mr. Weber, to adopt the Task Force’s 2020 Summer Meeting minutes (see NAIC Proceedings – Summer 2020, Life Actuarial (A) Task Force). The motion passed unanimously.

Having no further business, the Life Actuarial (A) Task Force adjourned.

W:\National Meetings\2020\Fall\TF\LA\LATF Calls\10-08\Oct 08 Minutes.docx
Life Actuarial (A) Task Force
Technical Amendment to AG 49-A

Purpose: This amendment is intended to revise the regulation, adopted by the Executive (EX) Committee and Plenary on Aug. 14, to coordinate its effective date with the anticipated adoption of proposed revisions to Actuarial Guideline XLIX—The Application of the Life Illustrations Model Regulation to Policies With Index-Based Interest (AG 49), to be considered for adoption by the Executive (EX) Committee and Plenary at the Fall National Meeting.

Background: Actuarial Guideline XLIX-A—The Application of the Life Illustrations Model Regulation to Policies With Index-Based Interest Sold On or After November 25, 2020 (AG 49A) applies to illustrations on applicable policies sold on or after Nov. 25. The Life Actuarial (A) Task Force recently exposed a revision to the existing AG 49 requirements to limit its application to in-force illustrations on policies sold before Nov. 25.

The Nov. 25 effective date of AG 49-A was chosen in anticipation of the Executive (EX) Committee and Plenary adoption of the revisions to AG 49 at the Fall National Meeting, initially scheduled for mid-November. Due to the impact of the corona virus, the meeting was moved to early December, delaying the adoption of the AG 49 revisions and necessitating this amendment for changes to the effective date for AG 49-A.

Amendments:

- The date reference in the title of the regulation is changed from “on or after November 25” to “on or after December 14,” reflecting the new anticipated adoption date of the proposed revisions to AG 49 due to the shift in the Fall National Meeting dates.
- Language in the effective date paragraph is changed to make the guideline effective on or after Dec. 14.
Date: October 7, 2020

From: Mike Boerner, Chair, Life Actuarial (A) Task Force

To: Life Actuarial (A) Task Force Interested Parties

Subject: Technical Amendment to AG 49-A

Summary:

The Life Actuarial (A) Task Force is issuing a technical amendment to change the effective date of Actuarial Guideline XLIX-A—The Application of the Life Illustrations Model Regulation to Policies With Index-Based Interest Sold On or After November 25, 2020 (AG 49-A) from Nov. 25 to Dec. 14. This letter is intended to provide information on the technical amendment and to notify companies that they will not be required to comply with AG 49-A on November 25.

Background:

The Executive (EX) Committee and Plenary adopted AG 49-A on Aug. 14, with a Nov. 25 effective date in anticipation of the Executive (EX) Committee and Plenary adoption of corresponding edits to Actuarial Guideline XLIX—The Application of the Life Illustrations Model Regulation to Policies With Index-Based Interest (AG 49) at the Fall National Meeting, which was initially scheduled for mid-November. The Fall National Meeting has been moved to early December, delaying the adoption of the AG 49 revisions. If adopted at the Fall National Meeting, the AG 49 revisions will have a Dec. 14 effective date. To maintain the coordination between AG 49-A and AG 49, the Life Actuarial (A) Task Force is issuing a technical amendment to AG 49-A to change its effective date to Dec. 14.

The currently adopted version of AG 49-A applies to illustrations of indexed universal (IUL) life policies sold on or after Nov. 25. The AG 49 revisions limit its application to in-force illustrations on IUL policies sold prior to the effective date of AG 49-A. The Life Actuarial (A) Task Force has exposed the AG 49 revisions and plans to consider adoption of the revisions later this month, with a Dec. 14 effective date. The technical amendment issued by the Task Force avoids a time period where the AG 49-A guidance and the current AG 49 guidance conflict.

The AG 49-A technical amendment, exposed by the Life Actuarial (A) Task Force, revises the title and effective date of AG 49-A, as adopted by the Executive (EX) Committee and Plenary on Aug. 14, to coordinate its effective date with the effective date of AG 49 to be considered for adoption by the Executive (EX) Committee and Plenary at the Fall National Meeting. The technical amendment asks the Task Force to consider the changes to AG 49-A proposed below:

- Revise the date reference in the title of the AG 49-A from “on or after November 25” to “on or after December 14,” reflecting the anticipated adoption date of the proposed revisions to AG 49 due to the shift in the Fall National Meeting dates.
- Revise the effective date paragraph to make the guideline effective on or after Dec. 14.

Following Task Force adoption, the technical amendment to AG 49-A is expected to be adopted by the Life Insurance and Annuities (A) Committee in November, followed by the Executive (EX) Committee and Plenary at the Fall National Meeting.

Please send any questions to Reggie Mazyck (rmazyck@naic.org).
Model 805 Exposure

Comments should be sent to Reggie Mazyck (RMazyck@naic.org) by close of business Aug. 25, 2020.

The Life Actuarial (A) Task Force was asked by the Life Insurance and Annuities (A) Committee to review the Task Force decision to set the Model 805 Section 4B annuity nonforfeiture floor at 0% to reflect the low interest environment. The text below is being exposed for comment and subsequent Task Force consideration. For the purposes of the exposure, the X% variable is replaceable with a rate from the options posed in the footnote below:

Excerpted from Model 805 Section 4

B. The interest rate used in determining minimum nonforfeiture amounts shall be an annual rate of interest determined as the lesser of three percent (3%) per annum and the following, which shall be specified in the contract if the interest rate will be reset:

(1) The five-year Constant Maturity Treasury Rate reported by the Federal Reserve as of a date, or average over a period, rounded to the nearest 1/20th of one percent, specified in the contract no longer than fifteen (15) months prior to the contract issue date or redetermination date under Section 4B(4);

(2) Reduced by 125 basis points;

(3) Where the resulting interest rate is not less than X% percent (X%); and

(4) The interest rate shall apply for an initial period and may be redetermined for additional periods. The redetermination date, basis and period, if any, shall be stated in the contract. The basis is the date or average over a specified period that produces the value of the five-year Constant Maturity Treasury Rate to be used at each redetermination date.

The exposure considers whether the variable X should be set to one of the following rates, .15; .25; .35; .50, or if the variable X should remain at zero. The version of the Model adopted by the Task Force on June 11 is attached for reference.
This Act shall be known as the Standard Nonforfeiture Law for Individual Deferred Annuities.

Section 2. Applicability

A. This Act shall not apply to any reinsurance, group annuity purchased under a retirement plan or plan of deferred compensation established or maintained by an employer (including a partnership or sole proprietorship) or by an employee organization, or by both, other than a plan providing individual retirement accounts or individual retirement annuities under Section 408 of the Internal Revenue Code, as now or hereafter amended, premium deposit fund, variable annuity, investment annuity, immediate annuity, any deferred annuity contract after annuity payments have commenced, or reversionary annuity, nor to any contract which shall be delivered outside this state through an agent or other representative of the company issuing the contract.

B. Sections 3 through 8 shall not apply to contingent deferred annuities.

C. Notwithstanding Subsection B, the commissioner shall have the authority to prescribe, by regulation, nonforfeiture benefits for contingent deferred annuities that are, in the opinion of the commissioner, equitable to the policyholder, appropriate given the risks insured, and to the extent possible, consistent with general intent of this law.

Drafting Note: It is expected that any regulation prescribing specific nonforfeiture requirements for the CDAs and promulgated by the commissioner under Subsection C above would apply only to the CDA contracts issued subsequent to the effective date of such regulation.

Section 3. Nonforfeiture Requirements

A. In the case of contracts issued on or after the operative date of this Act as defined in Section 13, no contract of annuity, except as stated in Section 2, shall be delivered or issued for delivery in this state unless it contains in substance the following provisions, or corresponding provisions which in the opinion of the commissioner are at least as favorable to the contractholder, upon cessation of payment of considerations under the contract:

(1) That upon cessation of payment of considerations under a contract, or upon the written request of the contract owner, the company shall grant a paid-up annuity benefit on a plan stipulated in the contract of such value as is specified in Sections 5, 6, 7, 8 and 10;

(2) If a contract provides for a lump sum settlement at maturity, or at any other time, that upon surrender of the contract at or prior to the commencement of any annuity payments, the company shall pay in lieu of a paid-up annuity benefit a cash surrender benefit of such amount as is
specifying in Sections 5, 6, 8 and 10. The company may reserve the right to defer the payment of the cash surrender benefit for a period not to exceed six (6) months after demand therefor with surrender of the contract after making written request and receiving written approval of the commissioner. The request shall address the necessity and equitability to all policyholders of the deferral;

(3) A statement of the mortality table, if any, and interest rates used in calculating any minimum paid-up annuity, cash surrender or death benefits that are guaranteed under the contract, together with sufficient information to determine the amounts of the benefits; and

(4) A statement that any paid-up annuity, cash surrender or death benefits that may be available under the contract are not less than the minimum benefits required by any statute of the state in which the contract is delivered and an explanation of the manner in which the benefits are altered by the existence of any additional amounts credited by the company to the contract, any indebtedness to the company on the contract or any prior withdrawals from or partial surrenders of the contract.

B. Notwithstanding the requirements of this section, a deferred annuity contract may provide that if no considerations have been received under a contract for a period of two (2) full years and the portion of the paid-up annuity benefit at maturity on the plan stipulated in the contract arising from prior considerations paid would be less than $20 monthly, the company may at its option terminate the contract by payment in cash of the then present value of the portion of the paid-up annuity benefit, calculated on the basis of the mortality table, if any, and interest rate specified in the contract for determining the paid-up annuity benefit, and by this payment shall be relieved of any further obligation under the contract.

Section 4. Minimum Values

The minimum values as specified in Sections 5, 6, 7, 8 and 10 of any paid-up annuity, cash surrender or death benefits available under an annuity contract shall be based upon minimum nonforfeiture amounts as defined in this section.

A. (1) The minimum nonforfeiture amount at any time at or prior to the commencement of any annuity payments shall be equal to an accumulation up to such time at rates of interest as indicated in Subsection B of the net considerations (as hereinafter defined) paid prior to such time, decreased by the sum of Paragraphs (a) through (d) below:

(a) Any prior withdrawals from or partial surrenders of the contract accumulated at rates of interest as indicated in Subsection B;

(b) An annual contract charge of $50, accumulated at rates of interest as indicated in Subsection B;

(c) Any premium tax paid by the company for the contract, accumulated at rates of interest as indicated in Subsection B; and

(d) The amount of any indebtedness to the company on the contract, including interest due and accrued.

(2) The net considerations for a given contract year used to define the minimum nonforfeiture amount shall be an amount equal to eighty-seven and one-half percent (87.5%) of the gross considerations credited to the contract during that contract year.

B. The interest rate used in determining minimum nonforfeiture amounts shall be an annual rate of interest determined as the lesser of three percent (3%) per annum and the following, which shall be specified in the contract if the interest rate will be reset:
(1) The five-year Constant Maturity Treasury Rate reported by the Federal Reserve as of a date, or average over a period, rounded to the nearest 1/20th of one percent, specified in the contract no longer than fifteen (15) months prior to the contract issue date or redetermination date under Section 4B(4);

(2) Reduced by 125 basis points;

(3) Where the resulting interest rate is not less than one zero percent (10%); and

(4) The interest rate shall apply for an initial period and may be redetermined for additional periods. The redetermination date, basis and period, if any, shall be stated in the contract. The basis is the date or average over a specified period that produces the value of the five-year Constant Maturity Treasury Rate to be used at each redetermination date.

C. During the period or term that a contract provides substantive participation in an equity indexed benefit, it may increase the reduction described in Subsection B(2) above by up to an additional 100 basis points to reflect the value of the equity indexed benefit. The present value at the contract issue date, and at each redetermination date thereafter, of the additional reduction shall not exceed the market value of the benefit. The commissioner may require a demonstration that the present value of the additional reduction does not exceed the market value of the benefit. Lacking such a demonstration that is acceptable to the commissioner, the commissioner may disallow or limit the additional reduction.

D. The commissioner may adopt rules to implement the provisions of Section 4C and to provide for further adjustments to the calculation of minimum nonforfeiture amounts for contracts that provide substantive participation in an equity index benefit and for other contracts that the commissioner determines adjustments are justified.

Section 5. Computation of Present Value

Any paid-up annuity benefit available under a contract shall be such that its present value on the date annuity payments are to commence is at least equal to the minimum nonforfeiture amount on that date. Present value shall be computed using the mortality table, if any, and the interest rates specified in the contract for determining the minimum paid-up annuity benefits guaranteed in the contract.

Section 6. Calculation of Cash Surrender Value

For contracts that provide cash surrender benefits, the cash surrender benefits available prior to maturity shall not be less than the present value as of the date of surrender of that portion of the maturity value of the paid-up annuity benefit that would be provided under the contract at maturity arising from considerations paid prior to the time of cash surrender reduced by the amount appropriate to reflect any prior withdrawals from or partial surrenders of the contract, such present value being calculated on the basis of an interest rate not more than one percent (1%) higher than the interest rate specified in the contract for accumulating the net considerations to determine maturity value, decreased by the amount of any indebtedness to the company on the contract, including interest due and accrued, and increased by any existing additional amounts credited by the company to the contract. In no event shall any cash surrender benefit be less than the minimum nonforfeiture amount at that time. The death benefit under such contracts shall be at least equal to the cash surrender benefit.

Section 7. Calculation of Paid-up Annuity Benefits

For contracts that do not provide cash surrender benefits, the present value of any paid-up annuity benefit available as a nonforfeiture option at any time prior to maturity shall not be less than the present value of that portion of the maturity value of the paid-up annuity benefit provided under the contract arising from considerations paid prior to the time the contract is surrendered in exchange for, or changed to, a deferred paid-up annuity, such present value being calculated for the period prior to the maturity date on the basis of the interest rate specified in the contract for accumulating the net considerations to determine maturity value, and increased by any additional amounts credited by the company to the contract. For contracts that do not provide any death benefits prior to the commencement of any annuity payments, present values shall be calculated on the basis of such interest rate and the mortality table specified in the contract for determining the maturity value of the
paid-up annuity benefit. However, in no event shall the present value of a paid-up annuity benefit be less than the minimum nonforfeiture amount at that time.
Section 8.  Maturity Date

For the purpose of determining the benefits calculated under Sections 6 and 7, in the case of annuity contracts under which an election may be made to have annuity payments commence at optional maturity dates, the maturity date shall be deemed to be the latest date for which election shall be permitted by the contract, but shall not be deemed to be later than the anniversary of the contract next following the annuitant's seventieth birthday or the tenth anniversary of the contract, whichever is later.

Section 9.  Disclosure of Limited Death Benefits

A contract that does not provide cash surrender benefits or does not provide death benefits at least equal to the minimum nonforfeiture amount prior to the commencement of any annuity payments shall include a statement in a prominent place in the contract that such benefits are not provided.

Section 10.  Inclusion of Lapse of Time Considerations

Any paid-up annuity, cash surrender or death benefits available at any time, other than on the contract anniversary under any contract with fixed scheduled considerations, shall be calculated with allowance for the lapse of time and the payment of any scheduled considerations beyond the beginning of the contract year in which cessation of payment of considerations under the contract occurs.

Section 11.  Proration of Values; Additional Benefits

For a contract which provides, within the same contract by rider or supplemental contract provision, both annuity benefits and life insurance benefits that are in excess of the greater of cash surrender benefits or a return of the gross considerations with interest, the minimum nonforfeiture benefits shall be equal to the sum of the minimum nonforfeiture benefits for the annuity portion and the minimum nonforfeiture benefits, if any, for the life insurance portion computed as if each portion were a separate contract. Notwithstanding the provisions of Sections 5, 6, 7, 8 and 10, additional benefits payable in the event of total and permanent disability, as reversionary annuity or deferred reversionary annuity benefits, or as other policy benefits additional to life insurance, endowment and annuity benefits, and considerations for all such additional benefits, shall be disregarded in ascertaining the minimum nonforfeiture amounts, paid-up annuity, cash surrender and death benefits that may be required by this Act. The inclusion of such benefits shall not be required in any paid-up benefits, unless the additional benefits separately would require minimum nonforfeiture amounts, paid-up annuity, cash surrender and death benefits.

Section 12.  Rules

The commissioner may adopt rules to implement the provisions of this Act.

Section 13.  Effective Date

After the effective date of this Act, a company may elect to apply its provisions to annuity contracts on a contract form-by-contract form basis before the second anniversary of the effective date of this Act. In all other instances, this Act shall become operative with respect to annuity contracts issued by the company after the second anniversary of this Act.

Chronological Summary of Actions (all references are to the Proceedings of the NAIC).

2017 3rd Quarter (amended).
Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form

1. Identify yourself, your affiliation and a very brief description (title) of the issue.

Tim Cardinal, FSA, MAAA, CERA. Cardinalis 1 Consulting. Clarify and introduce a third permissible technique for the calculation of company experience rates.

2. Identify the document, including the date if the document is “released for comment,” and the location in the document where the amendment is proposed:


3. Show what changes are needed by providing a red-line version of the original verbiage with deletions and identify the verbiage to be deleted, inserted or changed by providing a red-line (turn on “track changes” in Word®) version of the verbiage. (You may do this through an attachment.)

See attached Appendix.

4. State the reason for the proposed amendment? (You may do this through an attachment.)

See attached Appendix and Excel file.
Appendix

SECTION:

REDLINE:
9.C.2.d.vi. If the company uses the aggregate company experience for a group of mortality segments when determining the company experience mortality rates for each of the individual mortality segments in the group, the company shall use one of the following methods:

a. Use techniques to further subdivide the aggregate experience into the various mortality segments (e.g., start with aggregate non-smoker and then use the conservation of total deaths principle, normalization or other approach to divide the aggregate mortality into super preferred, preferred and residual standard non-smoker class assumptions).

b. Use techniques to adjust the experience of each mortality segment in the group to reflect the aggregate company experience for the group (e.g., by credibility weighting the individual mortality segment experience with the aggregate company experience for the group).

c. Use a two-step sequential method, which

1) forms subgroups which are groups of mortality segments and are subsets of the aggregate class of mortality segments being aggregated,

2) uses techniques as in (b) to adjust the experience of each subgroup from (1) to reflect the aggregate company experience for the group and conserve deaths, and

3) finally, uses techniques as in (a) to further subdivide the subgroups’ adjusted experience from (2) into the various mortality segments while conserving each subgroup’s deaths determined in step (2)’s conservation of deaths.

For example, if mortality segments vary by sex, risk class, and face bands, then

1) segments that differ by face band are aggregated to form subgroups that vary just by sex and risk class,

2) the subgroups’ mortality experience is credibility weighted with the aggregate company experience for the group and normalized, and

3) the subgroups’ adjusted mortality experience are then subdivided into the various mortality segments based on credible, external face band relativities and conservation of deaths is applied to each subgroup’s normalized deaths determined in (2).

REASONING:
A minor point is clarity. “Either” can mean one or both. The intent is one of a) or b) but not both. The major issue is both a) and b) have weaknesses in contexts with high levels of granularity resulting in a large number of mortality segments such as 120 or 360 segments. For example consider a block with 360 mortality segments determined by 2 sexes × 6 risk classes × 5 face bands × 3 product types × 2 underwriting types (such as full and accelerated). A company may have very high credibility for each of 12 segments as determined by 2 sexes × 6 risk classes but have very low credibility for each of the 360 segments. Both a) and b) could produce company experience rates that negate the very reasons a company uses a high level of granularity. Using b) for example, all segment rates would be equal to the aggregate A/E rates, which is equivalent to no granularity. By applying b) to subgroups and applying a) to divide the subgroups, the proposed technique c) is more robust drawing upon a) and b)’s strengths.
while mitigating their weakness. If there is one subgroup which is the aggregate then a) is a special case of c). If each subgroup is a segment then b) is a special case of c). See the attached excel file that adds two examples to the NAIC examples for a) and b). Example 8 is an example of a correct way to apply c) and Example 9 is an incorrect way.
Step 0: In Rows 37-60, Columns 1-6 identify the segments and the segment's basis for E, E, A, and A/E. For illustrative purposes, values are derived from Example 5. Column 7 specifies the subgroup prescribed margins. The company applies the weighting method and relativistic method in a dependent sequence (sometimes called “two-step”).

Step 1: In Rows 71-83 aggregate segments that differ by face band to form subgroups that vary by just sex and risk class. In Columns 1-15 in Rows 71-83, the credibility-weighted A/E ratios are calculated for all subgroups using the subgroup's A/E ratio, the subgroup's credibility, the aggregate class A/E, and then normalized. Observe that Columns 1-14's formulas and values are identical to Example 5 except the rows are subgroups rather than mortality segments.

Step 2: In Rows 71-60, Columns 8-11 adjust or scale each segment’s experience to reflect its subgroup’s adjusted credibility-weighted experience from Step 1. Column 8-9 show the subgroups' adjusted credibility-weighted experience which are applied in Columns 13-14 to adjust each subgroups' segment experience. Column 12 shows the selected base segment and Column 13 shows the subgroup's base segment's external relativities based on the expected relationship between the segment and its subgroup's base segment. Column 14 is a derived theoretical, imputed “actual” A' that would result adjusted credibility-weighted experience which is used to adjust segment experience which is retained in applying relativity ratios. In this example, 5's bottom-up method is used. Example 5's outputs of adjusted credibility-weighted A', E, and A/E are then used as inputs in the second step which applies Example 3's relativistic methodology.

Step D: In Rows 71-60, Column 16 identify the segments and the segment's basis for E, E, A, and A/E. For illustrative purposes, values are derived from Example 5. Column 7 specifies the subgroup prescribed margins. The company applies the weighting method and relativistic method in a dependent sequence (sometimes called “two-step”).

### Step 1: Identify Segment, Basis for E, Calculate and sum each segment's variation As and Es

<table>
<thead>
<tr>
<th>Identifying Segments for Aggregation:</th>
<th>Calculate A/E:</th>
<th>Subgroup:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
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</table>

### Step 2: Reframe Segment E and A To Reflect Step 1's Subgroups' CW Adjusted Experience

<table>
<thead>
<tr>
<th>From Step 1 Col (14)</th>
<th>From Step 1 Col (13)</th>
<th>Col (4) subgroup total scaled to Col (9)</th>
<th>Col (8) * Col (10)</th>
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</thead>
</table>

### Step 3: Apply credibility techniques to subgroups formed by aggregating face bands for each sex and risk class combination

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Calculate A/E:</th>
<th>Calculate Credibility-Weighted A/E (CW-A/E):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1)</td>
<td>(2)</td>
<td></td>
</tr>
<tr>
<td>(3)</td>
<td>(4)</td>
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</tr>
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### Step 4: Determine the mortality table based on RR Tool:

<table>
<thead>
<tr>
<th>Mortality Table based on RR Tool: 2015 VBT ALB</th>
<th>Expected Claim Amounts Using (3)</th>
<th>Actual Claim Amounts</th>
<th>A/E</th>
<th>Subgroup</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td>(5)</td>
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</table>

### Credibility Complement:

<table>
<thead>
<tr>
<th>Credibility Complement</th>
<th>Subgroup</th>
</tr>
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<tr>
<td></td>
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</tr>
<tr>
<td>(6)</td>
<td></td>
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<tr>
<td>(7)</td>
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</table>

### Further Information:

- **Groups of Policies**: Describes the segments and their bases for E, E, A, and A/E.
- **Face Band**: Identifies the segments and the segment's basis for E, E, A, and A/E.
- **Mortality Table based on RR Tool**: 2015 VBT ALB
- **Expected Claim Amounts**: Using (3)
- **Actual Claim Amounts**: A/E

**Example 8 using Two-Step Sequential Method: Weighting Method followed by Relativistic Method (VM-20 Section 9.C.2.d.vi.c added by the proposed APS):**

In this example, a company has 24 mortality segments (shown in Rows 37-60 Columns 1 and 2) which vary by sex, risk class, and face band. Substandard business is not included in the analysis. Since the segments were subject to similar underwriting, the company intends to aggregate all mortality experience and will use the aggregate credibility (100% as shown in blue) to determine the prescribed margins. The company applies the weighting method and relativistic method in a dependent sequence (sometimes called “two-step”).

The company intends to set its anticipated experience assumption as scalar multiples of the 2015 VBT RR Tables which were selected as the industry tables for the segments based on their RR Tool results. In Rows 71-60, Column 3-6 show the tables indicated by the RR Tool, along with the expected claim amounts, actual claim amounts, and resulting A/E ratios. A credibility weighting approach is used to adjust the experience of subgroups formed by grouping mortality segments to reflect the aggregate company experience. In the second step, the starting point is the subgroups' credibility-weight adjusted experience which is used to adjust segment experience which is retained in applying relativity ratios. In this example, 5's bottom-up method is used. Example 5's outputs of adjusted credibility-weighted A', E, and A/E are then used as inputs in the second step which applies Example 3's relativistic methodology.
<table>
<thead>
<tr>
<th>Anchor Segment</th>
<th>Calculate Reliability-Based A’ and normalize</th>
<th>Segment Set</th>
<th>Normalized Segment RB A’/E divided by Normalized Base RA A’/E</th>
<th>Check for sham aggregation for top level step</th>
<th>Reliability before replacing CW with 100%</th>
<th>Sham?</th>
</tr>
</thead>
<tbody>
<tr>
<td>(12)</td>
<td>(13)</td>
<td>(14)</td>
<td>(15)</td>
<td>(16)</td>
<td>(17)</td>
<td>(18)</td>
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</table>

**Base Segment**

<table>
<thead>
<tr>
<th>Expected Reliability to Base</th>
<th>Reliability Based A’</th>
<th>Normalization Ratio</th>
<th>Normalized A’</th>
<th>Normalized A/E</th>
<th>Reliability to Base after Normalization</th>
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</thead>
<tbody>
<tr>
<td>Segment 1</td>
<td>100%</td>
<td>14.1</td>
<td>1.05</td>
<td>14.52</td>
<td>82.2%</td>
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<tr>
<td>Segment 2</td>
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<td>35.1</td>
<td>1.06</td>
<td>35.08</td>
<td>76.5%</td>
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<td>Segment 3</td>
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<td>114.6</td>
<td>1.03</td>
<td>118.23</td>
<td>85.8%</td>
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<tr>
<td>Segment 4</td>
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<td>176.2</td>
<td>1.03</td>
<td>181.77</td>
<td>81.5%</td>
</tr>
<tr>
<td>Segment 5</td>
<td>100%</td>
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The Life Actuarial (A) Task Force met via Webex Oct. 1, 2020. The following Task Force members participated: Doug Slape, Chair, represented by Mike Boerner and Rachel Hemphill (TX); Tynesia Dorsey, Vice Chair, represented by Peter Weber (OH); Jim L. Ridling represented by Steve Oslund (AL); Ricardo Lara represented by Ben Bock and Perry Kupferman (CA); Michael Conway represented by Eric Unger (CO); Andrew N.Mais represented by Wanchin Chou (CT); Doug Ommen represented by Mike Yanacheak (IA); Robert H. Muriel represented by Vincent Tsang (IL); Vicki Schmidt represented by Nicole Boyd (KS); Grace Arnold represented by Fred Andersen and John Robinson (MN); Chlora Lindley-Myers represented by William Leung (MO); Bruce R. Ramge represented by Rhonda Ahrens (NE); Marlene Caride represented by Kevin Clarkson (NJ); Russell Toal represented by Mark Hendrick (NM); Linda A. Lacewell represented by Bill Carmello (NY); and Glen Mulready represented by Andrew Schallhorn (OK).

1. **Discussed Edits to Model #805**

   Adam Brown (Allianz) said half of the fixed annuity business placed in 2019 included a guaranteed lifetime withdrawal benefit (GLWB), many of which had explicit charges. He said a number of companies have either reduced the value of the GLWB or removed the elective benefit from the marketplace in 2020 due to the inability to manage the GLWB given the current low interest rate environment and the existing 1% interest rate floor on nonforfeiture values. He showed a spreadsheet (Attachment Seven-A) demonstrating that the higher the nonforfeiture interest rate floor, the more difficult it is to support the GLWB charges. He said the Allianz comment letter (Attachment Seven-B) provided further explanation of the effect of the nonforfeiture interest rate floor on elective benefits.

   Mr. Leung suggested that the Task Force might consider determining a separate nonforfeiture floor for indexed annuities. Ms. Ahrens said the floor should remain the same for both indexed annuities and non-indexed annuities. Mr. Boerner said discussion of the issue will be continued on the next call.

2. **Adopted its 2021 Proposed Charges**

   The Task Force’s 2021 proposed charges remain consistent with its 2020 charges, except for changing the Indexed Universal Life (IUL) (A) Subgroup charge from an implementation status to a monitoring status, adding a charge for the implementation of a new economic scenario generator (ESG), and updating the charges for the Valuation Manual (VM)-22 (A) Subgroup and the Guaranteed Issue (GI) Life Valuation (A) Subgroup.

   Mr. Leung made a motion, seconded by Mr. Schallhorn, to adopt the Task Force’s 2021 proposed charges (Attachment Seven-C). The motion passed unanimously.

3. **Exposed Amendment Proposal 2020-09**

   Ms. Hemphill said amendment proposal 2020-09 (Attachment Seven-D) proposes several changes to the life principle-based reserving (PBR) exemption. She said the first proposed change removes the requirement for an annual filing of the life PBR statement of exemption if company circumstances have not materially changed. She said the second proposed change allows for the exemption of companies that are unable to meet the premium thresholds to qualify for the exemption, but for which the only source of new business premium income is from policies converted from existing policies that were subject to VM-A, Appendix A – Requirements and VM-C, Appendix C – Actuarial Guidelines. She said the third proposed change clarifies that the premium to be considered when evaluating the life PBR exemption premium threshold is in force premium, not new business premium.

   Ms. Boyd made a motion, seconded by Mr. Weber, to expose amendment proposal 2020-09 and the accompanying changes to the life, accident and health annual statement blank (Attachment Seven-E), for a 21-day public comment period ending Oct. 21. The motion passed unanimously.

Having no further business, the Life Actuarial (A) Task Force adjourned.
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September 30, 2020

Mr. Mike Boerner, Chairperson, Life Actuarial (A) Task Force (LATF)
National Association of Insurance Commissioners

Re: Model Law #805 Exposure

Mr. Boerner,

Thank you for the opportunity to provide additional comment on the Model Law #805 exposure. At your request, we have provided a spreadsheet to show how nonforfeiture values affect other, more dominant policy benefits at different nonforfeiture interest rates. We have also resubmitted our comment letter dated August 25, 2020, because it provides additional background on the mechanics of annuity nonforfeiture.

Nonforfeiture Value Tradeoffs

Nonforfeiture benefits provide a safety net for annuity consumers. As such, the nonforfeiture value protects consumers in worst-case scenarios, and nonforfeiture values rarely dominate consumer benefits in practice.

Nevertheless, nonforfeiture values have an impact on other, more dominant policy benefits because insurers reflect all scenarios in the pricing process. When the nonforfeiture interest rate is too high, insurers may need to decrease the more dominant policy benefits in order to support the nonforfeiture value. For example, annuities with lifetime income benefits may offer lower income amounts as a result of the higher nonforfeiture value.

Spreadsheet Demonstrations

We have provided a spreadsheet that allows users to compare two annuities side-by-side. The spreadsheet is pre-loaded with (1) a traditional fixed annuity, (2) a fixed indexed annuity, and (3) a fixed indexed annuity with a chargeable rider. You can use the spreadsheet to compare the impact of different minimum nonforfeiture rates on these pre-loaded annuities or you can choose to input your own assumptions in the shaded cells.

The spreadsheet illustrates how the nonforfeiture value can override rider charges in some product designs. When this happens, the amount available to support rider benefits decreases, so the policy benefits themselves must decrease.

<table>
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<th>Actuarial Present Value of Net Rider Charges</th>
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<tr>
<td>Rider Charge Percentage</td>
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<tr>
<td>Nonforfeiture Interest Rate</td>
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<tr>
<td>1.00%</td>
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<tr>
<td>0.25%</td>
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<tr>
<td>0.15%</td>
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<tr>
<td>0.00%</td>
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Assumes $100,000 premium, 3% discount rate.

Note: values shown in spreadsheet are not reduced by lifetime withdrawals.

The spreadsheet also illustrates how the account value interest rate and rider charge percentage affect whether the nonforfeiture value is the dominant policy benefit. When account value interest rates are changed from guarantees to best.
estimates, nonforfeiture values do not dominate. Similarly, nonforfeiture values do not dominate when rider charges are zero or low.

Results

At Allianz, the difference between a 1% floor and a 0% floor equates to a difference of approximately 25% to 35% of annual guaranteed income in our fixed indexed annuity policies, assuming the same investment risk and profitability targets. In a $100,000 policy, that difference is approximately $750 to $1,250 every year during income payout.

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<th>Nonforfeiture Interest Rate</th>
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Assumes $100,000 premium, 1.20% rider charge, issue age 55, income start age 65.
Source: Allianz full pricing model. Annual income rounded to the nearest $50.

The current 1% nonforfeiture interest rate floor is unsupportable in today’s low interest rate environment. Thus, we urge regulators to act swiftly to decrease the nonforfeiture interest rate floor to 0%, because insurers may otherwise need to decrease other, more dominant policy benefits in order to support the nonforfeiture value.

Thank you for the opportunity to provide these comments.

Regards,

Adam Brown, FSA, MAAA
Senior Vice President, Actuarial Product Development
Allianz Life Insurance Company of North America

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2021 Proposed Charges

LIFE ACTUARIAL (A) TASK FORCE

The mission of the Life Actuarial (A) Task Force is to identify, investigate and develop solutions to actuarial problems in the life insurance industry.

Ongoing Support of NAIC Programs, Products and Services

1. The Life Actuarial (A) Task Force will:
   A. Work to keep reserve, reporting and other actuarial-related requirements current. This includes principle-based reserving (PBR) and other requirements in the Valuation Manual, actuarial guidelines, and recommendations for appropriate actuarial reporting in blanks. Respond to charges from the Life Insurance and Annuities (A) Committee and referrals from other groups or committees, as appropriate.
   B. Report progress on all work to the Life Insurance and Annuities (A) Committee and provide updates to the Financial Condition (E) Committee on matters related to life insurance company solvency. This work includes the following:
      1. Work with the American Academy of Actuaries (Academy) and the Society of Actuaries (SOA) to develop new mortality tables for valuation and minimum nonforfeiture requirements, as appropriate, for life insurance and annuities.
      2. Provide recommendations for guidance and requirements for accelerated underwriting, as needed.
      3. Evaluate and provide recommendations regarding the VM-21/AG 43 Standard Projection Amount, which may include continuing as a required floor or providing as disclosure. This evaluation is to be completed prior to year-end 2023.
      4. Work with the SOA on the annual development of the Generally Recognized Expense Table (GRET) factors.
      5. Provide recommendations and changes, as appropriate, to other reserve and nonforfeiture requirements to address issues, and provide actuarial assistance and commentary to other NAIC committees relative to their work on actuarial matters.
      6. Work with the selected vendor to develop and implement a new economic scenario generator (ESG) for use in regulatory reserve and capital calculations.
      7. Monitor international developments regarding life and health insurance reserving, capital and related topics. Compare and benchmark with PBR requirements.

2. The Variable Annuities Capital and Reserve (E/A) Subgroup of the Life Risk-Based Capital (E) Working Group and the Life Actuarial (A) Task Force will:
   A. Monitor the impact of the changes to the variable annuities reserve framework and RBC calculation and determine if additional revisions need to be made.
   B. Develop and recommend appropriate changes, including those to improve accuracy and clarity of variable annuity (VA) capital and reserve requirements.

3. The Experience Reporting (A) Subgroup will:
   A. Continue development of the experience reporting requirements within the Valuation Manual. Provide input, as appropriate, for the process regarding the experience reporting agent, data collection, and subsequent analysis and use of experience submitted.

4. The Indexed Universal Life (IUL) Illustration (A) Subgroup will:
   A. Monitor the results and practices of IUL illustrations following implementation of Actuarial Guideline XLIX-A—The Application of the Life Illustrations Model Regulation to Policies with Index-Based Interest to Policies Sold On or After December 14, 2020 (AG 49-A). Provide recommendations for consideration of changes to Life Insurance Illustrations Model Regulation (#582) to the Life Actuarial (A) Task Force, as needed.

5. The Longevity Risk (E/A) Subgroup of the Life Actuarial (A) Task Force and the Life Risk-Based Capital (E) Working Group will:
A. Provide recommendations for recognizing longevity risk in statutory reserves and/or risk-based capital (RBC), as appropriate. Complete by the 2021 Summer National Meeting.

6. The Valuation Manual (VM)-22 (A) Subgroup will:
   A. Recommend requirements, as appropriate, for non-variable (fixed) annuities in the accumulation and payout phases for consideration by the Life Actuarial (A) Task Force. Continue working with the Academy on a PBR methodology for non-variable annuities.

7. The Guaranteed Issue (GI) Life Valuation (A) Subgroup will:
   A. Provide recommendations regarding valuation requirements for GI life business, including any appropriate mortality table(s) for valuation as well as nonforfeiture. Initial recommendations are to be provided to the Life Actuarial (A) Task Force by the 2021 Summer National Meeting.

NAIC Support Staff: Reggie Mazyck/Jennifer Frasier

W:\National Meetings\2020\Fall\TF\LA\2021 Charges\Draft 2021 LATF Charges.docx
Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

1. Identify yourself, your affiliation and a very brief description (title) of the issue.

Identification:
Rachel Hemphill, Texas Department of Insurance

Title of the Issue:
1. Modify Life PBR Exemption to not require annual exemption requests if the company continues to meet the premium thresholds and does not have any ULSG with material SG.
2. Not require VM-20 when all new issues are conversions.

2. Identify the document, including the date if the document is “released for comment,” and the location in the document where the amendment is proposed:

Valuation Manual Section II, Subsection 1.D
January 1, 2020 NAIC Valuation Manual

3. Show what changes are needed by providing a red-line version of the original verbiage with deletions and identify the verbiage to be deleted, inserted or changed by providing a red-line (turn on “track changes” in Word®) version of the verbiage. (You may do this through an attachment.)

See attached.

4. State the reason for the proposed amendment? (You may do this through an attachment.)

Reduce filing burden for companies and state regulators by making the Life PBR Exemption a one-time filing until conditions for the exemption change. Allow exemption for companies that do not meet the premium thresholds, but are only issuing new policies that would be subject to VM-20 due to conversions from existing policies being valued under the pre-PBR framework.

* This form is not intended for minor corrections, such as formatting, grammar, cross-references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.
Valuation Manual Section II, Subsection 1.D

D. Life PBR Exemption

1. A company meeting the condition in D.2 below may file a statement of exemption for ordinary life insurance policies, except for policies in D.3 below, issued directly or assumed during the current calendar year, that would otherwise be subject to VM-20. If a company has no business issued directly or assumed during the current calendar year that would otherwise be subject to VM-20, a statement of exemption is not required. For an initial exemption, such a statement must be filed with the domiciliary commissioner prior to July 1 of that year certifying that condition D.2 was met based on premiums in force from the prior calendar year annual statement and the statement of exemption must also be included with the NAIC filing for the second quarter of that year.

The domiciliary commissioner may reject such statement prior to Sept. 1 and require the company to follow the requirements of VM-20 for the ordinary life policies covered by the statement.

If an initial filed statement is not rejected by the domiciliary commissioner, the filing of such a statement is not required in future calendar years, as long as the company continues to meet the condition in D.2 below, except for policies in D.3 below; rather, ongoing exemptions for each new calendar year will be deemed to not be rejected, unless: 1) the company fails to meet the condition in D.2 below, 2) the policies contain those in D.3 below, or 3) the domiciliary commissioner contacts the company prior to Sept. 1 and notifies them that the statement of exemption is rejected. If any of these three criteria occur, then the current ongoing exemption is rejected and a new initial statement of exemption must be actively filed and not rejected in order for the company to exempt additional policies. In the case of an ongoing exemption, rather than include the statement of exemption with the NAIC filing for the second quarter of that year, the company should enter “SEE EXPLANATION” in response to the Life PBR Exemption supplemental interrogatory and provide an explanation, including the calendar year that the company actively filed and was granted the Life PBR Exemption and confirmation that none of the following apply: 1) the company fails to meet the condition in D.2 below, 2) the policies exempted contain those in D.3 below, or 3) the domiciliary commissioner contacted the company and notified them that the statement of exemption was rejected.

2. Condition for Exemption:
   a. The company has less than $300 million of ordinary life premiums1, and if the company is a member of an NAIC group of life insurers, the group has combined ordinary life premiums1 of less than $600 million; or
   b. The only new policies subject to VM-20 being issued or assumed by the company are conversions from existing policies that are being valued under VM-A and VM-C and the company was exempted from, or otherwise not subject to, the requirements of VM-20 in the prior year.

3. Policies Excluded from the Life PBR Exemption:
   a. Universal life with secondary guarantee (ULSG) policies with a secondary guarantee that does not meet the VM-01, Definitions for Terms in Requirements, definition of a “non-material secondary guarantee.”

4. Each exemption, or lack of an exemption, applies only to policies issued or assumed in the current year, and it applies to all future valuation dates for those policies. The minimum reserve requirements for the ordinary life policies subject to the exemption are those pursuant to applicable methods required in VM-A and VM-C using the mortality as defined in VM-20 Section 3.C.1 and VM-M Section 1.H.

Valuation Manual Section II, Subsection 1.D - Footnote

1 Premiums are measured as total in force direct plus reinsurance assumed from an unaffiliated company from the ordinary life line of business reported in the prior calendar year life/health annual financial statement, Exhibit 1, Part 1, Column 3, “Ordinary Life Insurance” excluding premiums for guaranteed issue

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policies and preneed life contracts and excluding amounts that represent the transfer of reserves in force as of the effective date of a reinsurance assumed transaction and are reported in Exhibit 1 Part 1, Column 3 as ordinary life insurance premium. Preneed is as defined in VM-01.
NAIC BLANKS (E) WORKING GROUP

Blanks Agenda Item Submission Form

DATE: ____________________

FOR NAIC USE ONLY

CONTACT PERSON: Pat Allison

TELEPHONE: 816-783-8528

EMAIL ADDRESS: pallison@naic.org

ON BEHALF OF: LATF

NAME: Mike Boerner, Chair

TITLE: 

AFFILIATION: 

ADDRESS: 

AGENDA ITEM # __________________________

YEAR __________________________

CHANGES TO EXISTING REPORTING [ ]

NEW REPORTING REQUIREMENT [ ]

REVIEWED FOR ACCOUNTING PRACTICES AND PROCEDURES IMPACT

NO IMPACT [ ]

MODIFIES REQUIRED DISCLOSURE [ ]

DISPOSITION

[ ] REJECTED FOR PUBLIC COMMENT

[ ] REFERRED TO ANOTHER NAIC GROUP

[ ] RECEIVED FOR PUBLIC COMMENT

[ ] ADOPTED __________________

[ ] REJECTED __________________

[ ] DEFERRED __________________

[ ] OTHER (SPECIFY) __________________

BLANK(S) TO WHICH PROPOSAL APPLIES

[ X ] ANNUAL STATEMENT

[ ] QUARTERLY STATEMENT

[ X ] INSTRUCTIONS

[ ] CROSSCHECKS

[ X ] Life, Accident & Health/Fraternal

[ ] Property/Casualty

[ ] Protected Cell

[ ] Health

[ ] Health (Life Supplement)

ANTICIPATED EFFECTIVE DATE: Annual 2022

IDENTIFICATION OF ITEM(S) TO CHANGE

See next page for details of changes to the VM-20 Reserves Supplement.

REASON, JUSTIFICATION FOR AND/OR BENEFIT OF CHANGE**

Changing the reporting for the Life PBR Exemption, corresponding to changes in the Life PBR Exemption in the Valuation Manual.

NAIC STAFF COMMENTS

Comment on Effective Reporting Date: __________________________

Other Comments: __________________________

** This section must be completed on all forms.

Revised 7/18/2018
IDENTIFICATION OF ITEM(S) TO CHANGE

VM-20 Reserves Supplement Blank:

- Part 2: Add Question 3, a disclosure of the year that the Life PBR Exemption was actively filed and a confirmation of the eligibility criteria in the case of ongoing exemptions.

VM-20 Reserves Supplement Instructions:

- Add instructions for the new disclosure item, Question 3.
ANNUAL STATEMENT INSTRUCTIONS – LIFE/FRATERNAL

VM-20 RESERVES SUPPLEMENT – PART 2

Life PBR Exemption

This section of the Supplement should be completed by a company that has filed a Life PBR Exemption that has not been rejected by its state of domicile.

If a company has filed a Life PBR Exemption that has not been rejected by its state of domicile, the company must indicate the source of the Life PBR Exemption, which could be defined in a state statute, a state regulation or in the NAIC-adopted Valuation Manual. If the source of the Life PBR Exemption is not the NAIC-adopted Valuation Manual, the company must disclose the criteria of the state’s Life PBR Exemption that the company has met, and the company must disclose the minimum reserve requirements that are required by the state of domicile. If the minimum reserve requirements of the state of domicile are the same as those specified in the NAIC-adopted Valuation Manual, the company may indicate: “Same as NAIC VM”. The company must also disclose the calendar year that the Life PBR Exemption was actively filed with and not rejected by its state of domicile and if it is prior to the year of the annual statement the company must confirm that they meet the criteria for an ongoing exemption that is deemed not to be rejected.

Companies whose individual ordinary life business is exempted from the requirements of VM-20 pursuant to a Life PBR Exemption are not required to complete Part 1 of this VM-20 Supplement.
<table>
<thead>
<tr>
<th>Life PBR Exemption as defined in the NAIC adopted Valuation Manual (VM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Has the company filed and been granted a Life PBR Exemption from the reserve requirements of VM-20 of the Valuation Manual by their state of domicile?</td>
</tr>
<tr>
<td>2. If the response to Question 1 is &quot;Yes&quot;, then check the source of the granted &quot;Life PBR Exemption&quot; definition? (Check either 2.1, 2.2 or 2.3)</td>
</tr>
<tr>
<td>2.1 NAIC Adopted VM [ ]</td>
</tr>
<tr>
<td>2.2 State Statute (SVL) [ ] Complete items &quot;a&quot; and &quot;b&quot;, as appropriate.</td>
</tr>
<tr>
<td>a. Is the criteria in the State Statute (SVL) different from the NAIC adopted VM?</td>
</tr>
<tr>
<td>b. If the answer to “a” above is “Yes”, provide the criteria the state has used to grant the Life PBR Exemption (e.g., Group/Leal Entity criteria) and the minimum reserve requirements that are required by the state of domicile (if the minimum reserve requirements are the same as the Adopted VM, write SAME AS NAIC VM:</td>
</tr>
<tr>
<td>2.3 State Regulation [ ] Complete items &quot;a&quot; and &quot;b&quot;, as appropriate.</td>
</tr>
<tr>
<td>a. Is the criteria in the State Regulation different from the NAIC adopted VM?</td>
</tr>
<tr>
<td>b. If the answer to “a” above is “Yes”, provide the criteria the state has used to grant the Life PBR Exemption (e.g., Group/Leal Entity criteria) and the minimum reserve requirements that are required by the state of domicile (if the minimum reserve requirements are the same as the Adopted VM, write SAME AS NAIC VM:</td>
</tr>
<tr>
<td>3. If the response to Question 1 is &quot;Yes&quot;, then provide the calendar year that the company filed and was granted a Life PBR Exemption from the reserve requirements of VM-20 of the Valuation Manual by their state of domicile (as opposed to the exemption being deemed not to be rejected). If such calendar year is not the current calendar year for this statement, also provide confirmation that none of the following apply: 1) the company fails to meet the condition in VM Section II, Subsection 1.D.2, 2) the policies exempted contain those in VM Section II, Subsection 1.D.3, or 3) the domiciliary commissioner contacted the company prior to Sept. 1 and notified them that the statement of exemption was rejected:</td>
</tr>
</tbody>
</table>

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The Life Actuarial (A) Task Force met via Webex Sept. 24, 2020. The following Task Force members participated: Kent Sullivan, Chair, represented by Mike Boerner and Rachel Hemphill (TX); Ricardo Lara represented by Ben Bock and Perry Kupferman (CA); Michael Conway represented by Eric Unger (CO); Andrew N. Mais represented by Wanchin Chou (CT); Doug Ommen represented by Mike Yanacheak (IA); Robert H. Muriel represented by Kevin Clarkson (NJ); Linda A. Lacewell represented by Bill Carmello (NY); Todd E. Kiser represented by Tomasz Serbinowski (UT); and Scott A. White represented by Craig Chupp (VA).

1. Discussed Edits to Model #805

Mr. Boerner said the currently exposed revision to the Standard Nonforfeiture Law for Individual Deferred Annuities (#805) (Attachment Eight-A) proposes either replacing the 0% annuity nonforfeiture interest rate floor previously adopted by the Task Force with 0.15%, 0.25%, 0.35% or 0.50%, or reverting to the 1% currently in Model #805. Adam Brown (Allianz) said the Allianz comment letter (Attachment Eight-B) supports the 0% floor. He said that when the nonforfeiture interest rate is too high, insurers may need to decrease other policy benefits to support the nonforfeiture value. He discussed the impact of the annuity nonforfeiture interest rate floor on lifetime withdrawal benefits. He said that fixed income annuities average $100,000 to $150,000 in premium, and some provide the policyholder an option to pay an annual fee to purchase additional lifetime income benefits. He noted that using the fee to purchase additional benefits results in lower cash values. He asked the Task Force to consider that information when determining the annuity nonforfeiture floor. Mr. Boerner said the Insured Retirement Institute (IRI) also submitted comments (Attachment Eight-C).

Naomi Kloeppersmith (Interstate Insurance Product Regulation Commission—Compact) said the Compact submitted a comment letter (Attachment Eight-D) and a demonstration (Attachment Eight-E) comparing the contract cash values and the minimum nonforfeiture values under various premium amount, guaranteed minimum interest rate and annuity nonforfeiture interest rate floor assumptions. She noted that the annuity nonforfeiture interest rate floor and the guaranteed minimum interest rate are not required to be the same. She said the Compact uniform standards do not allow a 0% guaranteed minimum interest rate.

Brian Bayerle (American Council of Life Insurers—ACLI) said the ACLI comments (Attachment Eight-F) support the 0% annuity nonforfeiture interest rate floor. Mr. Bayerle said the 0% rate would allow companies flexibility to deal with the uncertainty of the interest rate environment. The ACLI also provided a demonstration (Attachment Eight-G) similar to the spreadsheet provided by the Compact. Mr. Leung asked why it is necessary to lower the nonforfeiture interest rate floor if companies can independently lower the guaranteed minimum interest rate. Mr. Bayerle replied that lowering the nonforfeiture interest rate allows companies flexibility in product design. Mr. Brown said when the minimum nonforfeiture value exceeds the contract cash value, the company’s ability to provide lifetime income or indexing credits is limited. Mr. Tsang asked Mr. Brown to demonstrate the benefit a policyholder should expect to receive when using cash value to purchase additional lifetime income. Mr. Brown said the charges and the benefits received are disclosed in the policy. He said he will provide a demonstration of how the charges relate to the additional benefits.

2. Re-Exposed Amendment Proposal 2020-02

Mr. Bock said amendment proposal 2020-02 (Attachment Eight-H) was revised to address the comments received during its public comment period. He said the revisions clarify the intent of the proposal and softens some of its restrictions.

Mr. Leung made a motion, seconded by Mr. Yanacheak, to expose amendment proposal 2020-02 for a 21-day public comment period ending Oct. 15. The motion passed unanimously.

Having no further business, the Life Actuarial (A) Task Force adjourned.
Model 805 Exposure

Comments should be sent to Reggie Mazyck (RMazyck@naic.org) by close of business Aug. 25, 2020.

The Life Actuarial (A) Task Force was asked by the Life Insurance and Annuities (A) Committee to review the Task Force decision to set the Model 805 Section 4B annuity nonforfeiture floor at 0% to reflect the low interest environment. The text below is being exposed for comment and subsequent Task Force consideration. For the purposes of the exposure, the X% variable is replaceable with a rate from the options posed in the footnote below:

Excerpted from Model 805 Section 4
B. The interest rate used in determining minimum nonforfeiture amounts shall be an annual rate of interest determined as the lesser of three percent (3%) per annum and the following, which shall be specified in the contract if the interest rate will be reset:

(1) The five-year Constant Maturity Treasury Rate reported by the Federal Reserve as of a date, or average over a period, rounded to the nearest 1/20th of one percent, specified in the contract no longer than fifteen (15) months prior to the contract issue date or redetermination date under Section 4B(4);

(2) Reduced by 125 basis points;

(3) Where the resulting interest rate is not less than \(X\)%; and

(4) The interest rate shall apply for an initial period and may be redetermined for additional periods. The redetermination date, basis and period, if any, shall be stated in the contract. The basis is the date or average over a specified period that produces the value of the five-year Constant Maturity Treasury Rate to be used at each redetermination date.

\(^1\)The exposure considers whether the variable X should be set to one of the following rates, .15; .25; .35; .50, or if the variable X should remain at zero. The version of the Model adopted by the Task Force on June 11 is attached for reference.
STANDARD NONFORFEITURE LAW FOR INDIVIDUAL DEFERRED ANNUITIES

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Section 3. Nonforfeiture Requirements
Section 4. Minimum Values
Section 5. Computation of Present Value
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Section 8. Maturity Date
Section 9. Disclosure of Limited Death Benefits
Section 10. Inclusion of Lapse of Time Considerations
Section 11. Proration of Values; Additional Benefits
Section 12. Rules
Section 13. Effective Date

Section 1. Title
This Act shall be known as the Standard Nonforfeiture Law for Individual Deferred Annuities.

Section 2. Applicability

A. This Act shall not apply to any reinsurance, group annuity purchased under a retirement plan or plan of deferred compensation established or maintained by an employer (including a partnership or sole proprietorship) or by an employee organization, or by both, other than a plan providing individual retirement accounts or individual retirement annuities under Section 408 of the Internal Revenue Code, as now or hereafter amended, premium deposit fund, variable annuity, investment annuity, immediate annuity, any deferred annuity contract after annuity payments have commenced, or reversionary annuity, nor to any contract which shall be delivered outside this state through an agent or other representative of the company issuing the contract.

B. Sections 3 through 8 shall not apply to contingent deferred annuities.

C. Notwithstanding Subsection B, the commissioner shall have the authority to prescribe, by regulation, nonforfeiture benefits for contingent deferred annuities that are, in the opinion of the commissioner, equitable to the policyholder, appropriate given the risks insured, and to the extent possible, consistent with general intent of this law.

Drafting Note: It is expected that any regulation prescribing specific nonforfeiture requirements for the CDA contracts issued subsequent to the effective date of such regulation.

Section 3. Nonforfeiture Requirements

A. In the case of contracts issued on or after the operative date of this Act as defined in Section 13, no contract of annuity, except as stated in Section 2, shall be delivered or issued for delivery in this state unless it contains in substance the following provisions, or corresponding provisions which in the opinion of the commissioner are at least as favorable to the contractholder, upon cessation of payment of considerations under the contract:

(1) That upon cessation of payment of considerations under a contract, or upon the written request of the contract owner, the company shall grant a paid-up annuity benefit on a plan stipulated in the contract of such value as is specified in Sections 5, 6, 7, 8 and 10;

(2) If a contract provides for a lump sum settlement at maturity, or at any other time, that upon surrender of the contract at or prior to the commencement of any annuity payments, the company shall pay in lieu of a paid-up annuity benefit a cash surrender benefit of such amount as is
This version of Model 805 was adopted by LATF on June 11, 2020. It is subject to revision prior to forwarding the Life Insurance and Annuities (A) Committee for consideration.

August 6, 2020

specified in Sections 5, 6, 8 and 10. The company may reserve the right to defer the payment of the cash surrender benefit for a period not to exceed six (6) months after demand therefor with surrender of the contract after making written request and receiving written approval of the commissioner. The request shall address the necessity and equitability to all policyholders of the deferral;

(3) A statement of the mortality table, if any, and interest rates used in calculating any minimum paid-up annuity, cash surrender or death benefits that are guaranteed under the contract, together with sufficient information to determine the amounts of the benefits; and

(4) A statement that any paid-up annuity, cash surrender or death benefits that may be available under the contract are not less than the minimum benefits required by any statute of the state in which the contract is delivered and an explanation of the manner in which the benefits are altered by the existence of any additional amounts credited by the company to the contract, any indebtedness to the company on the contract or any prior withdrawals from or partial surrenders of the contract.

B. Notwithstanding the requirements of this section, a deferred annuity contract may provide that if no considerations have been received under a contract for a period of two (2) full years and the portion of the paid-up annuity benefit at maturity on the plan stipulated in the contract arising from prior considerations paid would be less than $20 monthly, the company may at its option terminate the contract by payment in cash of the then present value of the portion of the paid-up annuity benefit, calculated on the basis on the mortality table, if any, and interest rate specified in the contract for determining the paid-up annuity benefit, and by this payment shall be relieved of any further obligation under the contract.

Section 4. Minimum Values

The minimum values as specified in Sections 5, 6, 7, 8 and 10 of any paid-up annuity, cash surrender or death benefits available under an annuity contract shall be based upon minimum nonforfeiture amounts as defined in this section.

A. (1) The minimum nonforfeiture amount at any time at or prior to the commencement of any annuity payments shall be equal to an accumulation up to such time at rates of interest as indicated in Subsection B of the net considerations (as hereinafter defined) paid prior to such time, decreased by the sum of Paragraphs (a) through (d) below:

(a) Any prior withdrawals from or partial surrenders of the contract accumulated at rates of interest as indicated in Subsection B;

(b) An annual contract charge of $50, accumulated at rates of interest as indicated in Subsection B;

(c) Any premium tax paid by the company for the contract, accumulated at rates of interest as indicated in Subsection B; and

(d) The amount of any indebtedness to the company on the contract, including interest due and accrued.

Drafting Note: The premium tax credit is only permitted if the tax is actually paid by the company. If the tax is paid and subsequently credited back to the company, such as upon early termination of the contract, the tax credit may not be taken.

(2) The net considerations for a given contract year used to define the minimum nonforfeiture amount shall be an amount equal to eighty-seven and one-half percent (87.5%) of the gross considerations credited to the contract during that contract year.

B. The interest rate used in determining minimum nonforfeiture amounts shall be an annual rate of interest determined as the lesser of three percent (3%) per annum and the following, which shall be specified in the contract if the interest rate will be reset:
This version of Model 805 was adopted by LATF on June 11, 2020. It is subject to revision prior to forwarding the Life Insurance and Annuities (A) Committee for consideration.

August 6, 2020

(1) The five-year Constant Maturity Treasury Rate reported by the Federal Reserve as of a date, or average over a period, rounded to the nearest 1/20th of one percent, specified in the contract no longer than fifteen (15) months prior to the contract issue date or redetermination date under Section 4B(4);

(2) Reduced by 125 basis points;

(3) Where the resulting interest rate is not less than zero percent (0%); and

(4) The interest rate shall apply for an initial period and may be redetermined for additional periods. The redetermination date, basis and period, if any, shall be stated in the contract. The basis is the date or average over a specified period that produces the value of the five-year Constant Maturity Treasury Rate to be used at each redetermination date.

C. During the period or term that a contract provides substantive participation in an equity indexed benefit, it may increase the reduction described in Subsection B(2) above by up to an additional 100 basis points to reflect the value of the equity index benefit. The present value at the contract issue date, and at each redetermination date thereafter, of the additional reduction shall not exceed the market value of the benefit. The commissioner may require a demonstration that the present value of the additional reduction does not exceed the market value of the benefit. Lacking such a demonstration that is acceptable to the commissioner, the commissioner may disallow or limit the additional reduction.

D. The commissioner may adopt rules to implement the provisions of Section 4C and to provide for further adjustments to the calculation of minimum nonforfeiture amounts for contracts that provide substantive participation in an equity index benefit and for other contracts that the commissioner determines adjustments are justified.

Section 5. Computation of Present Value

Any paid-up annuity benefit available under a contract shall be such that its present value on the date annuity payments are to commence is at least equal to the minimum nonforfeiture amount on that date. Present value shall be computed using the mortality table, if any, and the interest rates specified in the contract for determining the minimum paid-up annuity benefits guaranteed in the contract.

Section 6. Calculation of Cash Surrender Value

For contracts that provide cash surrender benefits, the cash surrender benefits available prior to maturity shall not be less than the present value as of the date of surrender of that portion of the maturity value of the paid-up annuity benefit that would be provided under the contract at maturity arising from considerations paid prior to the time of cash surrender reduced by the amount appropriate to reflect any prior withdrawals from or partial surrenders of the contract, such present value being calculated on the basis of an interest rate not more than one percent (1%) higher than the interest rate specified in the contract for accumulating the net considerations to determine maturity value, decreased by the amount of any indebtedness to the company on the contract, including interest due and accrued, and increased by any existing additional amounts credited by the company to the contract. In no event shall any cash surrender benefit be less than the minimum nonforfeiture amount at that time. The death benefit under such contracts shall be at least equal to the cash surrender benefit.

Section 7. Calculation of Paid-up Annuity Benefits

For contracts that do not provide cash surrender benefits, the present value of any paid-up annuity benefit available as a nonforfeiture option at any time prior to maturity shall not be less than the present value of that portion of the maturity value of the paid-up annuity benefit provided under the contract arising from considerations paid prior to the time the contract is surrendered in exchange for, or changed to, a deferred paid-up annuity, such present value being calculated for the period prior to the maturity date on the basis of the interest rate specified in the contract for accumulating the net considerations to determine maturity value, and increased by any additional amounts credited by the company to the contract. For contracts that do not provide any death benefits prior to the commencement of any annuity payments, present values shall be calculated on the basis of such interest rate and the mortality table specified in the contract for determining the maturity value of the
This version of Model 805 was adopted by LATF on June 11, 2020. It is subject to revision prior to forwarding the Life Insurance and Annuities (A) Committee for consideration.
August 6, 2020

paid-up annuity benefit. However, in no event shall the present value of a paid-up annuity benefit be less than the minimum nonforfeiture amount at that time.
Section 8. Maturity Date

For the purpose of determining the benefits calculated under Sections 6 and 7, in the case of annuity contracts under which an election may be made to have annuity payments commence at optional maturity dates, the maturity date shall be deemed to be the latest date for which election shall be permitted by the contract, but shall not be deemed to be later than the anniversary of the contract next following the annuitant’s seventieth birthday or the tenth anniversary of the contract, whichever is later.

Section 9. Disclosure of Limited Death Benefits

A contract that does not provide cash surrender benefits or does not provide death benefits at least equal to the minimum nonforfeiture amount prior to the commencement of any annuity payments shall include a statement in a prominent place in the contract that such benefits are not provided.

Section 10. Inclusion of Lapse of Time Considerations

Any paid-up annuity, cash surrender or death benefits available at any time, other than on the contract anniversary under any contract with fixed scheduled considerations, shall be calculated with allowance for the lapse of time and the payment of any scheduled considerations beyond the beginning of the contract year in which cessation of payment of considerations under the contract occurs.

Section 11. Proration of Values; Additional Benefits

For a contract which provides, within the same contract by rider or supplemental contract provision, both annuity benefits and life insurance benefits that are in excess of the greater of cash surrender benefits or a return of the gross considerations with interest, the minimum nonforfeiture benefits shall be equal to the sum of the minimum nonforfeiture benefits for the annuity portion and the minimum nonforfeiture benefits, if any, for the life insurance portion computed as if each portion were a separate contract. Notwithstanding the provisions of Sections 5, 6, 7, 8 and 10, additional benefits payable in the event of total and permanent disability, as reversionary annuity or deferred reversionary annuity benefits, or as other policy benefits additional to life insurance, endowment and annuity benefits, and considerations for all such additional benefits, shall be disregarded in ascertaining the minimum nonforfeiture amounts, paid-up annuity, cash surrender and death benefits that may be required by this Act. The inclusion of such benefits shall not be required in any paid-up benefits, unless the additional benefits separately would require minimum nonforfeiture amounts, paid-up annuity, cash surrender and death benefits.

Section 12. Rules

The commissioner may adopt rules to implement the provisions of this Act.

Section 13. Effective Date

After the effective date of this Act, a company may elect to apply its provisions to annuity contracts on a contract form-by-contract form basis before the second anniversary of the effective date of this Act. In all other instances, this Act shall become operative with respect to annuity contracts issued by the company after the second anniversary of this Act.

Chronological Summary of Actions (all references are to the Proceedings of the NAIC).

2017 3rd Quarter (amended).
August 25, 2020

Mr. Mike Boerner, Chairperson, Life Actuarial (A) Task Force (LATF)
National Association of Insurance Commissioners

Re: Model Law #805 Exposure

Mr. Boerner,

Thank you for the opportunity to provide comment on the Model Law #805 exposure. Allianz Life has been a top provider of fixed index annuities over the past 20 years and has offered innovative lifetime income benefits since 2006. As part of Allianz Group, we also have extensive experience providing insurance solutions in low or negative rate environments across the globe.

We urge regulators to act swiftly to decrease the nonforfeiture interest rate floor to 0%, because the current 1% floor may result in greater investment risk and reduced policyholder benefits.

Annuity Nonforfeiture Background

At policy issue, the minimum nonforfeiture value is equal to 87.5% of premium. This amount is less than 100% because the insurer has upfront cash flow needs such as capital requirements, acquisition expenses, and advisor compensation. It also protects the insurer if the policy is surrendered before these expenses have been recouped.

The minimum nonforfeiture value earns interest at a rate equal to the five-year treasury yield less a 1.25% reduction and an additional equity index offset of 1% (if applicable). The five-year treasury is used because it provides a conservative proxy for the investments that back a typical annuity. The 1.25% reduction accounts for expenses associated with the policy as well as additional benefits such as bonuses, death benefits, or lifetime income. The 1% equity index offset recognizes that a portion of the interest earned by the insurer is used to purchase hedging instruments and thus reduces the interest that can be guaranteed in the policy, since the hedging instruments may lose their value.

We believe this framework has functioned well because it guarantees value to the policyholder while protecting the insurer from the risks associated with issuing an annuity policy. However, the 1% interest rate floor is unsupportable in today’s low interest rate environment.

Impact of the 1% Interest Rate Floor

Annuities are long-term retirement vehicles that are backed by high quality, long-term assets. Long-term assets are used because they provide an asset/liability match and generally provide consumer value because long-term assets typically have higher yields than short-term assets.¹

If the nonforfeiture interest rate is too high, insurers may need to invest in riskier, less liquid and/or more complex assets to provide benefits and support guarantees. In certain economic scenarios, this could put stress on insurers’ ability to pay claims.

In addition, when the nonforfeiture interest rate is too high, insurers may need to decrease other policy benefits in order to support the nonforfeiture value. For example, annuities with lifetime income benefits may offer lower income amounts as a result of the higher nonforfeiture value.

¹ Even in today’s low interest rate environment, the ten-year treasury yield is five times higher than the one-year treasury yield (0.55% vs. 0.11% on 7/31/2020).

Allianz Life Insurance Company of North America, 5701 Golden Hills Drive, Minneapolis, MN 55416-1297. www.allianzlife.com

ENT-1135-A (R-5/2014)
Allianz Life supports a 0% Interest Rate Floor

On 7/31/2020, the five-year treasury rate was at an all-time low of 0.21%. The Federal Reserve has indicated that rates are unlikely to increase through 2022. The forward curve also implies that rates will remain low for a long time. Thus, this issue is not likely to be resolved anytime soon.

Low risk-free rates and credit spreads make it increasingly difficult to support consumer benefits, including nonforfeiture values, using traditional investment methods. We support a 0% floor because it would reduce the need for insurers to increase investment risk to meet minimum nonforfeiture guarantees and allow insurers to provide greater benefits elsewhere in the product.

In the current interest rate environment as of 7/31/2020, the difference between a 1% floor and a 0% floor equates to a difference of approximately 25% to 35% of annual guaranteed income in our fixed indexed annuity policies, assuming the same investment risk and profitability targets. In a $100,000 policy, that difference is approximately $750 to $1,250 every year during income payout.

***

In conclusion, we urge regulators to act swiftly to decrease the nonforfeiture interest rate floor to 0%, because the current 1% floor may result in greater investment risk and reduced policyholder benefits.

Thank you for the opportunity to provide these comments.

Regards,

Adam Brown, FSA, MAAA
Senior Vice President, Actuarial Product Development
Allianz Life Insurance Company of North America

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2 https://www.federalreserve.gov/monetarypolicy/fomcprojtabl20200610.htm (Federal Funds Rate projection).
3 As of 7/31/2020, the thirty-year treasury yield was 1.20%, which indicates that over the next thirty years, the average rate of return is expected to be 1.20%.
August 25, 2020

Mr. Mike Boerner  
Chair, NAIC Life Actuarial (A) Task Force (LATF)  
VIA Email: Mike.Boerner@tdi.texas.gov

Mr. Reggie Mazyck  
Life Actuary Task Force, NAIC  
VIA Email: rmazyck@naic.org

**RE: Model 805 Amended Exposure, Standard Nonforfeiture Law for Individual Deferred Annuities**

Dear Mr. Boerner and Mr. Mazyck:

On behalf of our members, the Insured Retirement Institute ("IRI") appreciates the opportunity to comment on the change to the Model 805 Exposure as a result of the Life Actuaries Task Force (LATF) and Life Insurance and Annuities (A) Committee discussions. We continue to support the original proposal and respectfully urge the NAIC to move to adopt a zero percent non forfeiture rate.

Since our May letter of support of the Model 805 revision, there has been no significant improvement in our national economy. Institutional and individual investors are challenged with investment and product offerings offering desirable return rates. The proposed change from 1% to 0% will give companies more flexibility to provide the value and benefits wanted and needed by consumers. Declining interest rates already may jeopardize product offered. The products most at risk are often those in greatest demand by consumers. For example, products with short surrender charge periods may not be able to find investments that have a high enough yield to support a 1% rate. At the same time, many consumers will be understandably hesitant to purchase long term products in a low yield environment. Additional guarantees in contracts such as a return of premium benefit may become unaffordable if the asset yield available is exhausted by the 1% guarantee.

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1 IRI is the leading association for the entire supply chain of insured retirement strategies, including life insurers, asset managers, and distributors such as broker-dealers, banks and marketing organizations. IRI members account for more than 95 percent of annuity assets in the U.S., include the top 10 distributors of annuities ranked by assets under management, and are represented by financial professionals serving millions of Americans. IRI champions retirement security for all through leadership in advocacy, awareness, research, and the advancement of digital solutions within a collaborative industry community.
IRI is committed to responding to the country’s economic condition with policy recommendations that support individual investment. Companies must have a diverse product portfolio to respond to the changing economic and individual situation. IRI supports the responsive approach of Model 805 and respects the concerns of the LATF and Life Insurance Annuities (A) Committee. IRI supports the American Council of Life Insurers (ACLI) effort to reduce the Standard Nonforfeiture Law for Individual Deferred Annuities.

Thank you again for the opportunity to share our views on this important subject. Please contact the undersigned if you have questions about anything in this letter, or if we can be of any further assistance in connection with this important regulatory effort.

Sincerely,

Jason Berkowitz
Chief Legal & Regulatory Affairs Officer
Insured Retirement Institute

Liz Pujolas
Director, State Affairs
Insured Retirement Institute
VIA EMAIL TO: RMazyck@naic.org

TO: Commissioner Kent Sullivan, Chair
c/o Reggie Mazyck, Staff Support
NAIC Life Actuarial (A) Task Force

FROM: Insurance Compact Office

DATE: August 21, 2020

SUBJECT: Proposed Amendments to NAIC Model #805

The Interstate Insurance Product Regulation Commission (Insurance Compact) is a multi-state public body that serves as an instrumentality of the Compacting States pursuant to enabling legislation to enact the Interstate Insurance Product Regulation Compact. The purpose of the Insurance Compact is to develop Uniform Standards for covered insurance product lines, promptly review filed products and approve those product filings that satisfy applicable Uniform Standards on behalf of the members of the Insurance Compact. Today the Insurance Compact performs these functions on behalf of 44 member states, the District of Columbia, and Puerto Rico.

The Insurance Compact Office has extensive experience in applying the Standard Nonforfeiture Law for Individual Annuities (Model #805) as specified by applicable Uniform Standards and wishes to provide background and practical demonstration as the Task Force is considering the proposed amendments. Since the beginning of 2019 alone, more than 140 deferred annuity products have been through complete prior approval by the Insurance Compact, including detailed and thorough actuarial review for compliance with nonforfeiture requirements.

As a preliminary matter, under the Compact Statute, the exclusive product content requirements applicable to forms filed with the Insurance Compact are the Uniform Standards. Several Uniform Standards refer directly to requirements in NAIC models. In the case of Model #805, the Core Standards for Individual Deferred Non-Variable Annuity Contract require a demonstration of compliance with the model. Prior instances of amendments to NAIC models that took immediate effect under the Uniform Standards upon NAIC adoption include Model #808 amendments in 2012 and Model #821 amendments also in 2012. In line with the uniformity promised by the Compact Statute, amendments to model provisions incorporated into the Uniform Standards apply independently of state adoptions of the model or amendments.
The Insurance Compact Office offers the following background and sample calculations for your consideration to clarify and highlight the impact of a change in the minimum nonforfeiture interest rate (NFi) on minimum cash values provided by individual non-variable annuities and the fixed/indexed accounts of variable annuities.

**Background**

- Section 4 of Model #805 provides for a 12.5% premium expense load and a $50 annual contract charge. The minimum nonforfeiture values are determined by accumulating premiums net of the 12.5% expense load, less partial withdrawals, less the $50 annual contract charge at the NFi.

- Neither Model #805 nor the applicable Uniform Standards require that the guaranteed minimum interest rate (GMIR) be tied to the NFi even though that had been common practice by companies issuing non-variable annuity products. Currently only a minority of non-variable annuity products filed with the Insurance Compact tie the GMIR to the NFi. As market rates have lowered, the Insurance Compact has received and approved non-variable annuity product filings with low GMIRs, such as 0.1%.

- Although there is no floor on the GMIR in Model #805, the Uniform Standards prohibit a 0% or lower fixed account GMIR pursuant to Section 1.C(5). However, a 0% floor on index credits is allowed.

**Sample Calculations**

- The attached Excel spreadsheet shows the minimum nonforfeiture values for a simple single premium non-variable annuity product without additional features, such as bonuses.

- The demonstration in Columns A-H uses the current NFi of 1%, and assumes all funds are allocated to an index account with a credit rate floor of 0%. This demonstration shows that minimum nonforfeiture values do not come into play for almost 30 years due to the 12.5% premium expense load allowance.

- The demonstration in columns J-Q includes the formulas and allows for testing of any GMIR or NFi combination.

Because the minimum cash values in the retrospective test can impact the prospective test (Section 6 of Model #805), prospective test demonstrations are provided below the retrospective test demonstrations in the spreadsheet. These demonstrations reflect:

1. A maturity date equal to the later of age 70 or 10 years.

2. No surrender charge on or after the maturity date.

3. The maturity value equals the account value on the maturity date as required by the Insurance Compact Uniform Standards and that the account value on the maturity date be no less than the nonforfeiture value under the retrospective test on the maturity date. This requires calculation of an imputed rate that is used
to accumulate the account value and 1%+the imputed rate is used to discount the maturity value to the date of surrender.

4. Reducing the NFi below 1% does not impact the prospective test minimum cash values (i.e. discounted maturity values).

Conclusion

As explained above, a change to the nonforfeiture interest rate in Model #805 will apply to non-variable annuity products submitted for Insurance Compact review and approval. We encourage the Task Force to use the attached Excel spreadsheet to test the NFi values under consideration. If any further information would be helpful, please feel free to contact the Insurance Compact Office actuaries directly.

Katie Campbell, FSA, MAAA
Actuary
(907) 789-4237
kscampbell@insurancecompact.org

Jeanne Daharsh, FSA, MAAA
Actuary
(402) 933-5833
jdaharsh@insurancecompact.org

Naomi Kloepersmith, FSA, MAAA
Actuary
(913) 766-6024
nkloepersmith@insurancecompact.org

cc: Mike Boerner, Texas Department of Insurance
    Superintendent Elizabeth Kelleher Dwyer, Chair, Insurance Compact Commission
### Retrospective Test: Model B8 Section 11

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**Assumes all funds allocated to an index account**

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### Prospective Test (age 60 or older and 10 years to maturity) Model B8 Section 11

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**Assumes all funds allocated to an index account**

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© 2020 National Association of Insurance Commissioners
Brian Bayerle  
Senior Actuary  

September 22, 2020  

Mr. Mike Boehm  
Chair, NAIC Life Actuarial Task Force (LATF)  

Re: ACLI Comments on NAIC Model #805 Exposure  

Dear Mr. Boehm:  

The American Council of Life Insurers (ACLI) appreciates the opportunity to provide comments on the exposure of revisions to NAIC Model #805 on Standard Nonforfeiture Law for Individual Deferred Annuities. We appreciate the leadership of LATF and the Life Insurance and Annuities (A) Committee to address this critical issue for consumers.  

Consistent with and expanding upon our July 20th letter, we believe the best course of action is to reduce the minimum nonforfeiture interest rate in Section 4 (B) (3) from 1% to 0%. We recognize that regulators must carefully balance consumer benefits against company surplus concerns, and we strongly believe 0% produces the best aggregate outcome of availability and product flexibility while best ensuring strong company surplus positions. We note that companies are constrained by the level of new money rates they are earning on new annuity considerations which limits how much can be credited to the consumer. Both market conditions and competitive pressures will continue to be considerations for insurers when determining credited rates regardless of the regulatory floor.  

The current interest rate environment creates unique challenges on crediting rates. In 2020 the yields for the US 5-year and 10-year Treasuries have been as low as 0.19% and 0.52%, respectively. It is difficult to support the current 1.00% minimum guaranteed rate given these historically low interest rates. An annuity contract is a long-term commitment and requires that insurers maintain a long time horizon with respect to managing contract liabilities. Companies invest in long-duration assets to achieve a consistent yield for the duration of the policy. New premiums are invested at current rates which limits both the return and amount available to credit on those assets. Companies would appreciate greater flexibility to address the current environment. Greater flexibility will help promote expanded product availability to consumers.  

The 0% floor will only be triggered in low interest rate environments, such as the one we are currently experiencing, and will only apply to newly-issued contracts. Companies will continue to
use non-guaranteed crediting rates, bonuses, and other features in order to maintain market competitiveness and product differentiation.

As requested, we have quantified the effect of the proposed changes on the minimum nonforfeiture amounts. In the accompanying spreadsheet, we have included 10-year projected minimum nonforfeiture amounts at various nonforfeiture interest rates. This is intended to be a simplified example, so fees and charges other than $50 annual contract charge are omitted and assumes a 10-year prospective period.

Please note that while the minimum nonforfeiture amounts will decrease under this proposed change, maximum surrender charges will not increase, because they are based on a different interest rate (“the interest rate specified in the contract for accumulating the net considerations to determine maturity value”). We have also included maximum surrender charges at various interest rates in the spreadsheet for your reference.

We look forward to a discussion on this important issue.

Sincerely,

 cc: Reggie Mazyck, NAIC
### Standard Nonforfeiture Values at Various Interest Rates

**Assumptions:**
- Single Premium of $50,000
- Contract Minimum Rate equals SNFL Interest Rate

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### Retrospective SNFL Test Values (End of Year)

**Rates**

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### Prospective SNFL Test Max Surrender Charge Implied (Beginning of Year)

**Rates**

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</tbody>
</table>
Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form

1. Identify yourself, your affiliation and a very brief description (title) of the issue.

Joint submission by NAIC staff and Staff of Office of Principle-Based Reserving, California Department of Insurance – Clarify areas of confusion relating to the topic of materiality.

2. Identify the document, including the date if the document is “released for comment,” and the location in the document where the amendment is proposed:


3. Show what changes are needed by providing a red-line version of the original verbiage with deletions and identify the verbiage to be deleted, inserted or changed by providing a red-line (turn on “track changes” in Word®) version of the verbiage. (You may do this through an attachment.)

See attached Appendix.

4. State the reason for the proposed amendment? (You may do this through an attachment.)

See attached Appendix.

---

NAIC Staff Comments:

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© 2015 National Association of Insurance Commissioners
ISSUE:

Skipping steps in VM-20 is not allowed on grounds of immateriality. Some companies are skipping some VM-20 requirements altogether, without providing a simplification, approximation, or modeling technique that satisfies the VM-20 Section 2.G requirement that such simplifications neither materially understate nor downwardly bias the reserves. Simply skipping portions of the requirements, such as not computing an NPR, or not computing the DR and/or SR when exclusion tests have not been performed, inherently bias the reserve downward since their omission can only be neutral or decrease the resulting reserve. Without computing even a simplified model for Section 2.G analysis that shows there is not a decrease in the final reserve, this makes the skipping of the step violate Section 2.G. This APF clarifies that these types of omissions are not allowed. This has always been the case, but perhaps needs more emphasis in the Valuation Manual.

SECTION:

VM-20 Section 2.H and new Section 2.I, and VM-20 Section 7.E.1.g

REDLINE:

VM-20 Section 2.H

H. The company shall establish, for the DR and SR, a standard containing the criteria for determining whether an assumption, risk factor or other element of the principle-based valuation has a material impact on the size of the reserve. This standard shall be applied when identifying material risks under VM-20 Section 9.B.1. Such a standard shall also apply to the NPR with respect to VM-20 Section 2.G.

Guidance Note:

For example, the standard may be expressed as an impact of more than X dollars or Y% of the reserve, whichever is greater, where X and Y are chosen in a manner that is meant to stand the test of time and not need periodic revision.

The standard is based on the impact relative to the size of the NPR, DR and SR as opposed to the impact relative to the overall financial statement (e.g., total company reserves or surplus). Reviewing items that may lead to a material misstatement of the financial statement in the current year is appropriate in its own context, but it is not appropriate for identifying material risks for PBR, which itself is an emerging risk.

Note that the criteria apply to the NPR, DR and SR, and not just the final reported reserve. For example, if the DR is less than the NPR, the criteria still apply to the DR.

The standard also applies to exclusion tests, as they are an element of the principle-based valuation.
(new) VM-20 Section 2.I

I. Section 2.G and Section 2.H provide companies some flexibility in assumption setting and modeling methodologies, but they do not allow for skipping mandated steps without providing a valid approximation, simplification, or modeling technique under Section 2.G that neither materially understates nor downwardly biases the reserve.

Examples of omissions that would not satisfy VM-20 Section 2.G: not computing even a simplified NPR, not computing even a simplified DR or SR without having passed the relevant exclusion test(s), omitting prescribed mortality margins, not establishing any lapse margins, not building even a simplified asset model for the DR, using the alternative investment strategy without first determining that it produces a higher reserve than the company investment strategy, and ignoring post-level term losses.

**Guidance Note:** The issue here is not the use of approximations; it is about skipping mandated VM-20 requirements. Thus, for example, this does not rule out the use of a relatively simple asset model that is acceptable pursuant to VM-20 Section 7.E.1.a, nor the judicious use of the previous year’s assumption development work to save time and effort.

VM-20 Section 7.E.1.g Guidance Note

**Guidance Note:** VM-31 requires a demonstration of compliance with VM-20 Section 7.E.1.g. In many cases, particularly if the model investment strategy does not involve callable assets, it is expected that the demonstration of compliance will not require running the reserve calculation twice. For example, an analysis of the weighted average net reinvestment spread on new purchases by projection year (gross spread minus prescribed default costs minus investment expenses) of the model investment strategy compared to the weighted average net reinvestment spreads by projection year of the alternative strategy may suffice. The assumed mix of asset types, asset credit quality or the levels of non-prescribed spreads for other fixed income investments may need to be adjusted to achieve compliance. Or, the company may be able to rely on a previous year’s determination as to which strategy produces a higher reserve, if the assets and strategy have not changed very substantially since then.
REASONING:

Some companies have mistakenly believed that it was permissible to skip certain significant steps outlined in VM-20, without using a valid approximation or simplification that they have shown does not materially understate or bias reserves in a downward direction.

Note: Comment letters were received on an earlier draft of this APF, in response to which this newer version has eliminated any mention of PIMR and has made it clearer that a simplified asset model may in some circumstances be acceptable and that a full-blown run of both the actual investment strategy and the alternative investment strategy is not necessarily something that has to be done every year.
The Life Actuarial (A) Task Force met via conference call Aug. 27, 2020. The following Task Force members participated: Kent Sullivan, Chair, represented by Mike Boerner and Rachel Hemphill (TX); Jillian Froment, Vice Chair, represented by Peter Weber (OH); Ricardo Lara represented by Perry Kupferman (CA); Michael Conway represented by Eric Unger (CO); Andrew N. Mais represented by Wanchin Chou, Jim Jakielo and Lei Rao-Knight (CT); Robert H. Muriel represented by Vincent Tsang (IL); Vicki Schmidt represented by Nicole Boyd (KS); Steve Kelley represented by Fred Andersen and John Robinson (MN); Chlora Lindley-Myers represented by William Leung (MO); Bruce R. Range represented by Rhonda Ahrens (NE); Marlene Caride represented by Seong-min Eom (NJ); Russell Toal represented by Mark Hendrick (NM); Linda A. Lacewell represented by Bill Carmello (NY); Todd E. Kiser represented by Tomasz Serbinowski (UT); and Scott A. White represented by Craig Chupp (VA).

1. **Adopted the 2021 GRET**

Mr. Weber made a motion, seconded by Mr. Kupferman, to adopt the 2021 Generally Recognized Expense Tables (GRET) (Attachment Nine-A). The motion passed unanimously.

2. ** Adopted Amendment Proposal 2020-03**

Ms. Hemphill said amendment proposal 2020-03 clarifies that a more direct method can be used to calculate the net premium reserve (NPR) in lieu of using the mean reserve or mid-terminal reserve methods. She said the amendment proposal provides language from the *Statement of Statutory Accounting Principles (SSAP) 51R—Life Contracts* to support the use of the direct method.

Mr. Chou made a motion, seconded by Ms. Eom, to adopt amendment proposal 2020-03 (Attachment Nine-B). The motion passed unanimously.

3. **Approved the SOA Mortality Improvement Scale**

The Task Force considered approval of the 2020 Life Mortality Improvement (MI) Scale (Attachment Nine-C) developed by the Society of Actuaries (SOA) Life Mortality Improvement Subgroup. Ms. Rao-Knight said the Connecticut Insurance Department comment letter (Attachment Nine-D) states that the MI scale seems reasonable, based on the long-term nature of the MI scale and the limited COVID-19 data available. She said the qualified actuary should consider additional analysis of company data to assess the COVID-19 impact. Brian Bayerle (American Council of Life Insurers—ACLI) said the ACLI comment letter (Attachment Nine-E) supports the SOA recommendation. He said the MI scale should gradually reflect the COVID-19 deaths as data becomes available.

The Task Force approved the mortality improvement scale for use with *Valuation Manual* requirements without objection from members.

Having no further business, the Life Actuarial (A) Task Force adjourned.
TO: Reggie Mazyck, NAIC  
FROM: Dale Hall, Managing Director of Research, Society of Actuaries (SOA)  
        Leon Langlitz, Chair, SOA Committee on Life Insurance Company Expenses  
DATE: July 23, 2020  
RE: 2021 Generally Recognized Expense Table (GRET) – SOA Analysis

Dear Mr. Mazyck:

As in previous years, the Society of Actuaries expresses its thanks to NAIC staff for their assistance and responsiveness in providing Annual Statement expense and unit data for the 2021 GRET analysis for use with individual life insurance sales illustrations. The analysis is based on expense and expense related information reported on companies’ 2018 and 2019 Annual Statements. This project has been completed to assist the Life Actuarial Task Force (LATF) in its consideration of potential revisions to the GRET that could become effective for calendar year 2021. This memo describes the analysis and resultant findings.

NAIC staff provided Annual Statement data for life insurance companies for calendar years 2018 and 2019. This included data from 722 companies in 2018 and 776 companies in 2019. This increase breaks the trend of small decreases over the previous few years. Of the total companies, 292 were in both years and passed the outlier exclusion tests and were included as a base for the GRET factors (326 companies passed similar tests last year).

APPROACH USED
The methodology for calculating the recommended GRET factors based on this data is similar to that followed the last several years. The methodology was last altered in 2015. The changes made at that time can be found in the recommendation letter sent to LATF on July 30, 2015.

To calculate updated GRET factors, the average of the factors from the two most recent years (2018 and 2019 for those companies with data available for both years) of Annual Statement data was used. For each company an actual-to-expected ratio was calculated. Companies with ratios that fell outside predetermined parameters were excluded. This process was completed three times to stabilize the average rates. The boundaries of the exclusions have been modified from time to time; however, there were no adjustments made this year. Unit expense seed factors (the seeds for all distribution channel categories are the same), as shown in Appendix B, were used to compute total expected expenses. Thus, these seed factors were used to implicitly allocate expenses between acquisition and maintenance expenses, as well as among the three acquisition expense factors (on a direct of ceded reinsurance basis).

Companies were categorized by their reported distribution channel (four categories were used as described in Appendix A included below). There remain a significant number of companies for which no distribution channel was provided, as no responses to the annual surveys have been received from those companies. The characteristics of these companies vary significantly, including companies not currently writing new business or whose major line of business is not individual life insurance. Any advice or assistance from LATF

1 https://www.soa.org/Files/Research/Projects/research-2016-gret-recommendation.pdf
in future years to increase the response rate to the surveys of companies that submit Annual Statements in order to reduce the number of companies in the “Other” category would be most welcomed. The intention is to continue surveying the companies in future years to enable enhancement of this multiple distribution channel information.

Companies were excluded from the analysis if (1) their actual to expected ratios were considered outliers, often due to low business volume, (2) the average first year and single premium per policy were more than $40,000, (3) they are known reinsurance companies or (4) their data were not included in both years of the data supplied by the NAIC. To derive the overall GRET factors, the unweighted average of the remaining companies’ actual-to-expected ratios for each respective category was calculated. The resulting factors were rounded, as shown in Table 1.

THE RECOMMENDATION
The above methodology results in the proposed 2021 GRET values shown in Table 1. To facilitate comparisons, the current 2020 GRET factors are shown in Table 2. Further characteristics of the type of companies represented in each category are included in the last two columns in Table 1, including the average premium per policy issued and the average face amount ($000s) per policy issued.

To facilitate comparisons, the current 2020 GRET factors are shown in Table 2. Further characteristics of the type of companies represented in each category are included in the last two columns in Table 1, including the average premium per policy issued and the average face amount ($000s) per policy issued.

TABLE 1
PROPOSED 2021 GRET FACTORS, BASED ON AVERAGE OF 2018/2019 DATA

<table>
<thead>
<tr>
<th>Description</th>
<th>Acquisition per Policy</th>
<th>Acquisition per Unit</th>
<th>Acquisition per Premium</th>
<th>Maintenance per Policy</th>
<th>Companies Included</th>
<th>Average Premium Per Policy Issued During Year</th>
<th>Average Face Amt (000) Per Policy Issued During Year</th>
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<tbody>
<tr>
<td>Independent</td>
<td>$166</td>
<td>$0.90</td>
<td>42%</td>
<td>$50</td>
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<td>2,916</td>
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<td>Career</td>
<td>214</td>
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<td>54%</td>
<td>64</td>
<td>63</td>
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<td>Direct Marketing</td>
<td>195</td>
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<td>590</td>
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<td>32%</td>
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<td>67</td>
<td>836</td>
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* Includes companies that did not respond to this or prior year surveys

TABLE 2
CURRENT 2020 GRET FACTORS, BASED ON AVERAGE OF 2017/2018 DATA

<table>
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<th>Description</th>
<th>Acquisition per Policy</th>
<th>Acquisition per Unit</th>
<th>Acquisition per Premium</th>
<th>Maintenance per Policy</th>
<th>Companies Included</th>
<th>Average Premium Per Policy Issued During Year</th>
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<td>Independent</td>
<td>$168</td>
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<td>Career</td>
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<td>2,661</td>
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</table>
* Includes companies that did not respond to this or prior year surveys
In previous recommendations, an effort was made to reduce volatility in the GRET factors from year-to-year by limiting the change in GRET factors between years to about ten percent of the prior value. The changes from the 2020 GRET were reviewed to ensure that a significant change was not made in this year’s GRET recommendation. The Direct Marketing and Other distribution channel categories experienced a change greater than ten percent so the factors for this line were capped at the ten percent level (the Acquisition per unit factor changed somewhat more than 10% because of rounding) from the corresponding 2020 GRET values. The volatility occurred due to the change in the composition of the companies in this category where a small number of companies were included.

USAGE OF THE GRET
This year’s survey, responded to by companies’ Annual Statement correspondent, included a question regarding whether the 2020 GRET table was used in its illustrations by the company. Last year, 26% of the responders indicated their company used the GRET for sales illustration purposes, with similar percentage results by size of company; this contrasted with about 28% in 2018. This year, 29% of responding companies indicated that they used the GRET in 2019 for sales illustration purposes. The range was from 22% for Direct Marketing to 48% for career carriers. Based on the information received over the last several years, the variation in GRET usage appears to be in large part due to the relatively small sample size and different responders to the surveys.

We hope LATF finds this information helpful and sufficient for consideration of a potential update to the GRET. If you require further analysis or have questions, please contact Dale Hall at 847-273-8835.

Kindest personal regards,

Dale Hall, FSA, MAAA, CERA, CFA
Managing Director of Research
Society of Actuaries

Leon Langlitz, FSA, MAAA
Chair, SOA Committee on
Life Insurance Company Expenses
APPENDIX A — DISTRIBUTION CHANNELS

The following is a description of distribution channels used in the development of recommended 2021 GRET values:

1. **Independent** — Business written by a company that markets its insurance policies through an independent insurance agent or insurance broker not primarily affiliated with any one insurance company. These agencies or agents are not employed by the company and operate without an exclusive distribution contract with the company. These include most PPGA arrangements.

2. **Career** — Business written by a company that markets insurance and investment products through a sales force primarily affiliated with one insurance company. These companies recruit, finance, train, and often house financial professionals who are typically referred to as career agents or multi-line exclusive agents.

3. **Direct Marketing** — Business written by a company that markets its own insurance policies direct to the consumer through methods such as direct mail, print media, broadcast media, telemarketing, retail centers and kiosks, internet or other media. No direct field compensation is involved.

4. **Niche Marketers** — Business written by home service, pre-need, or final expense insurance companies as well as niche-market companies selling small face amount life products through a variety of distribution channels.

5. **Other** — Companies surveyed were only provided with the four options described above. Nonetheless since there were many companies for which we did not receive a response (or whose response in past years’ surveys confirmed an “other” categorization (see below), values for the “other” category are given in the tables in this memo. It was also included to indicate how many life insurance companies with no response (to this survey and prior surveys) and to indicate whether their exclusion has introduced a bias into the resulting values.
APPENDIX B – UNIT EXPENSE SEEDS

The expense seeds used in the 2014 and prior GRETs were differentiated between branch office and all other categories, due to the results of a relatively old study that had indicated that branch office acquisition cost expressed on a per Face Amount basis was about double that of other distribution channels. Due to the elimination of the branch office category in the 2015 GRET, non-differentiated unit expense seeds have been used in the current and immediately prior studies.

The unit expense seeds used in the 2021 GRET and the 2020 GRET recommendations were based on the average of the 2006 through 2010 Annual SOA expense studies. These studies differentiated unit expenses by type of individual life insurance policy (term and permanent coverages). As neither the GRET nor the Annual Statement data provided differentiates between these two types of coverage, the unit expense seed was derived by judgment based this information. The following shows the averages derived from the Annual SOA studies and the seeds used in this study. Beginning with the 2019 Annual Statement submission this information will become more readily available.

### 2006-2010 (AVERAGE) CLICE STUDIES:

<table>
<thead>
<tr>
<th></th>
<th>Acquisition/ Policy</th>
<th>Acquisition/ Face Amount (000)</th>
<th>Acquisition/ Premium</th>
<th>Maintenance/ Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Term</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weighted Average</td>
<td>$149</td>
<td>$0.62</td>
<td>38%</td>
<td>$58</td>
</tr>
<tr>
<td>Unweighted Average</td>
<td>$237</td>
<td>$0.80</td>
<td>57%</td>
<td>$76</td>
</tr>
<tr>
<td>Median</td>
<td>$196</td>
<td>$0.59</td>
<td>38%</td>
<td>$64</td>
</tr>
<tr>
<td><strong>Permanent</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weighted Average</td>
<td>$167</td>
<td>$1.43</td>
<td>42%</td>
<td>$56</td>
</tr>
<tr>
<td>Unweighted Average</td>
<td>$303</td>
<td>$1.57</td>
<td>49%</td>
<td>$70</td>
</tr>
<tr>
<td>Median</td>
<td>$158</td>
<td>$1.30</td>
<td>41%</td>
<td>$67</td>
</tr>
</tbody>
</table>

### CURRENT UNIT EXPENSE SEEDS:

<table>
<thead>
<tr>
<th></th>
<th>Acquisition/ Policy</th>
<th>Acquisition/ Face Amount (000)</th>
<th>Acquisition/ Premium</th>
<th>Maintenance/ Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>All distribution channels</td>
<td>$200</td>
<td>$1.10</td>
<td>50%</td>
<td>$60</td>
</tr>
</tbody>
</table>
Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

1. Identify yourself, your affiliation and a very brief description (title) of the issue.

Identification:
Rachel Hemphill, Texas Department of Insurance

Title of the Issue:
Clarify NPR calculation requirements.

2. Identify the document, including the date if the document is “released for comment,” and the location in the document where the amendment is proposed:

VM-20 Section 3.B.1 – 3.B.3, and VM-20 Section 3.B.6.d.i

January 1, 2020 NAIC Valuation Manual

3. Show what changes are needed by providing a red-line version of the original verbiage with deletions and identify the verbiage to be deleted, inserted or changed by providing a red-line (turn on “track changes” in Word®) version of the verbiage. (You may do this through an attachment.)

See attached.

4. State the reason for the proposed amendment? (You may do this through an attachment.)

Clarify any confusion on whether more direct calculations of the NPR to reflect non-annual premium modes, etc., are allowed. The current guidance note in Section 3.B.3 states that these may be reflected either “directly or through adjusting accounting entries”. However, due to some confusion on this point, I suggest emphasizing that more direct calculation methods are not prohibited. This is consistent with SSAP 51R, Paragraph 24:

24. Since terminal reserves are computed as of the end of a policy year and not the reporting date, the terminal reserve as of policy anniversaries immediately prior and subsequent to the reporting date are adjusted to reflect that portion of the net premium that is unearned at the reporting date.
This is generally accomplished using either the mean reserve method or the mid-terminal method as discussed in paragraphs 25-28. Other appropriate methods, including an exact reserve valuation, may also be used.

For re-exposure, to address both the question posed in the initial exposure of clearly reflecting both mean and mid-terminal adjustments, as well as to address comments received, I recommend language consistent with SSAP 51R, paragraph 24. SSAP 51R paragraphs 25-28 are referenced by paragraph 24. They are provided below for completeness, and specific references for policies subject to the Valuation Manual are highlighted.

**Mean Reserve Method**

25. Under the mean reserve method, the policy reserve equals the average of the terminal reserve at the end of the policy year and the initial reserve (the initial reserve is equal to the previous year’s terminal reserve plus the net annual valuation premium for the current policy year). When reserves are calculated on the mean reserve basis, it is assumed that the net premium for a policy is collected annually at the beginning of the policy year and that policies are issued ratably over the calendar year.

26. However, as premiums are often received in installments more frequently than annually and since the calculation of mean reserves assumes payment of the current policy year’s entire net annual premium, the policy reserve is overstated by the amount of net modal premiums not yet received for the current policy year as of the valuation date. As a result, it is necessary to compute and report a special asset to offset the overstatement of the policy reserve.

27. This special asset is termed “deferred premiums.” Deferred premiums are computed by taking the gross premium (or premiums) extending from (and including) the modal (monthly, quarterly, semiannual) premium due date or dates following the valuation date to the next policy anniversary date and subtracting any such deferred premiums that have actually been collected. Deferred premium assets shall also be reduced by loading. Since the calculation of mean reserves assumes payment of the current policy year’s entire net annual premium, deferred premium assets are considered admitted assets to compensate for the overstatement of the policy reserve. For policies subject to the Valuation Manual requirements, the deferred premium asset will continue to be calculated for the net premium reserve component of the total principle-based reserve.

**Mid-Terminal Method**

28. Under the mid-terminal method, the policy reserves are calculated as the average of the terminal reserves on the previous and the next policy anniversaries. These reserves shall be accompanied by an unearned premium reserve consisting of the portion of valuation premiums paid or due covering the period from the valuation date to the next policy anniversary date. For policies subject to the Valuation Manual requirements, the adjustment to the unearned premium reserve will continue to be calculated for the net premium reserve component of the total principle-based reserve.

Since the guidance note at the end of Section 3.B.3 contains requirements and not just guidance, it should be taken out of a guidance note. This requires moving the four terms to Section 3.B.1 and updating two cross references in VM-20 Section 3.B.6.d.i.

* This form is not intended for minor corrections, such as formatting, grammar, cross-references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

**NAIC Staff Comments:**

W:\National Meetings\2010\...\TF\LHA\ Attachment Nine-B 
Life Actuarial (A) Task Force 
12/3/20

© 2010 National Association of Insurance Commissioners 1

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VM-20 Section 3.B.1 – 3.B.3

B. NPR Calculation

1. For the purposes of Section 3, the following terms apply:
   a. A policy with “multiple secondary guarantees” is one that: a) simultaneously has more than one shadow account; b) simultaneously has more than one cumulative premium type of guarantee; or c) simultaneously has at least one of each. A single shadow account with a variety of possible end dates to the secondary guarantee, depending on the policyholder’s choice of funding level, constitutes a single—not multiple—secondary guarantee.

Guidance Note:
Policy designs that are created simply to disguise guarantees or exploit a perceived loophole must be treated in a manner similar to more typical product designs with similar guarantees. If a policy contains multiple secondary guarantees, such that a subset of those secondary guarantees in combination represent an implicit guarantee that would produce a higher NPR if that implicit guarantee were treated as an explicit secondary guarantee of the policy, then the policy should be treated as if that implicit guarantee were an explicit guarantee. For example, if there were a policy with a “sequential secondary guarantee” where only one secondary guarantee applied at any given point in time but with a series of secondary guarantees strung together with one period ending when the next one began, the combined terms of the secondary guarantees would be regarded as a single secondary guarantee.

b. The “fully funded secondary guarantee” at any time is:
   i. For a shadow account secondary guarantee, the minimum shadow account fund value necessary to fully fund the secondary guarantee for the policy at that time. For any policy for which the secondary guarantee contractually cannot be fully funded in advance, this shall be the present value of the contractually permitted premium stream that would fully fund the guarantee at the earliest possible date (using the valuation interest rate and mortality standard specified in Section 3.C).
   ii. For a cumulative premium secondary guarantee, the amount of cumulative premiums required to have been paid to that time that would result in no future premium requirements to fully fund the guarantee, accumulated with any interest or accumulation factors per the contract provisions for the secondary guarantee. For any policy for which the secondary guarantee contractually cannot be fully funded in advance, this shall be the present value of the contractually permitted premium stream that would fully fund the guarantee at the earliest possible date (using the valuation interest rate and mortality standard specified in Section 3.C).

c. The “actual secondary guarantee” at any time is:
   i. For a shadow account secondary guarantee, the actual shadow account fund value at that time.
   ii. For a cumulative premium secondary guarantee, the actual premiums paid to that point in time, accumulated with any interest or accumulation factors per the contract provisions for the secondary guarantee.

d. The “level secondary guarantee” at any time is:
   i. For a shadow account secondary guarantee, the shadow account fund value that would have existed at that time assuming payment of the level gross premium determined according to Section 3.B.6.c.i.
ii. For a cumulative premium secondary guarantee, the amount of cumulative level gross premiums determined according to Section 3.B.6.c.i, accumulated with any interest or accumulation factors per the contract provisions for the secondary guarantee.

2. Section 3.B.4, Section 3.B.5 and Section 3.B.6 provide the calculation of a terminal NPR under the assumption of an annual mode gross premium. In Section 3.B.4, Section 3.B.5 and Section 3.B.6, the gross premium referenced is the gross premium for the policy assuming an annual premium mode.

3. Since terminal NPRs are computed as of the end of a policy year and not the reporting date, the terminal NPR as of policy anniversaries immediately prior and subsequent to the reporting date are adjusted to reflect that portion of the net premium that is unearned at the reporting date. This is generally accomplished using either the mean reserve method or the mid-terminal method as discussed in SSAP 51R. Other appropriate methods, including an exact reserve valuation, may also be used.

VM-20 Section 3.B.6.d.i

As of the valuation date for the policy being valued, determine the actual secondary guarantee, denoted ASGx+t, as outlined in Section 3.B.1.c and the fully funded secondary guarantee, denoted FFSGx+t, as outlined in Section 3.B.1.b.
Agenda for Discussion

1. Objective for the annual mortality improvement (MI) scale updates
3. Considerations for 2020
4. LMISG 2020 recommendation
5. Future issues
Objective of Annual MI Scale Updates
Addresses VM20 Incorporation of MI: Section 9C3g

g. Mortality improvement shall not be incorporated beyond the valuation date. However, historical mortality improvement from the date of the industry basic table (e.g., Jan. 1, 2008, for the 2008 VBT and July 1, 2015, for the 2015 VBT) to the valuation date may be incorporated using the improvement factors for the applicable industry basic table as determined by the SOA and published on the SOA website, https://www.soa.org/research/topics/indiv-val-exp-study-list/ (Mortality Improvement Rates for AG-38 for Year-End YYYY).

Guidance Note: The improvement factors for the industry basic table will be determined by the SOA. YYYY is the calendar year of valuation.

Guidance Note: The start date for the improvement factors to be applied to the industry basic tables differs from that used for determining company experience mortality rates as described in Section 9.C.2.h, as the industry basic tables have already been improved from the mid-point of the exposure period of the data underlying the table to the year of the table; e.g., the 2015 VBT has already been improved from the mid-point of the underlying data supporting the table to 2015.

Objective of Annual MI Scale Updates
Level of Event Covered – Reserve vs Capital: VM Introduction

Overview of Reserve Concepts

Reserve requirements prescribed in the Valuation Manual are intended to support a statutory objective of conservative valuation to provide protection to policyholders and promote solvency of companies against adverse fluctuations in financial condition or operating results pursuant to requirements of Model #80.

A principle-based valuation is a reserve valuation that uses one or more methods, or one or more assumptions, determined by the insurer pursuant to requirements of Model #80 and the Valuation Manual. This is in contrast to valuation approaches that use only prescribed assumptions and methods. Although a reserve valuation may involve a method or assumption determined by the insurer, such valuation is a principle-based valuation only as specified in the Valuation Manual for a product or category of products.

A principle-based valuation must reflect risks that are:

1. Associated with the policies or contracts being valued, or their supporting assets.
2. Determined to be capable of materially affecting the reserve.

Risks not to be included in reserves are those of a general business nature, those that are not associated with the policies or contracts being valued, or those that are best viewed from the company perspective as opposed to the policy or contract perspective. These risks may involve the need for a liability separate from the reserve or may be provided for in capital and surplus.

Source: VM20 – guidance provided on risks to be covered by reserves
Objective for Annual MI Scale Updates
LMISG Thinking

Our annual update exercise seeks to apply judgment to historical mortality improvement (or deterioration) data to arrive at a set of mortality rates that can be used to calculate reserves for future events.


**Historical Data**
- Most recent relevant historical MI data (10-year moving average)
- Age- and gender-based
- Use of a long-term consistent source of population data, Social Security Administration (SSA)

**Forecasted Expectations**
- Most recent forecast of future improvements over future period (20 years)
- Age- and gender-based data
- Consistent with historical data and projections (Alt. II) available from SSA Trustees’ Annual Report

**Unsmoothed MI Scale**
- Weighted average of historical data and forecasted expectations
- Average of historical data and forecasted expectations

**Smoothed MI Scale**
- Unsmoothed MI scale with smoothing process applied
Considerations for 2020 & beyond

- **Data** - we don’t have sufficient data to fully understand the impact of the COVID-19-related mortality shock on the insured population (anecdotal reports from companies indicate they are seeing a smaller shock).

- **MI scale updates** - reflecting a shock in 2020 does not seem in line with the goals for the MI scale updates
  - Are shock events more appropriately reflected in capital planning rather than reserves?
  - An effective vaccine may make COVID-19’s impact on MI much shorter than the long-term impact arising from the opioid epidemic.
  - However, COVID-19 may have potential longer-term impacts that may arise from survivor impaired health, health impacts from delays in health care, and/or testing for early detection of dread disease, etc.
  - Conversely, some experts and models indicate the 2020/2021 COVID-19 shock is mainly a moving forward of deaths that would have occurred due to other causes and/or comorbidities. Might that improve future mortality improvement?

- **Precedent for other excess mortality events**
  - First group to consider the impact of a short-term shock event – setting a precedent for other future MI scale work
  - The current methodology uses a moving average to “smooth out” the impact of any one year or event
  - 2008/2009 influenza season and the effect of the opioid epidemic – the methodology was not adjusted for those events
LMISG 2020 Recommendation

Apply the historical methodology for 2020 consistent with the past scale updates (2013–2019).

Implications:
• There will be no specific impact included for the 2020 scale for the pandemic shock effect.
• The 10-year historical average in the 2022 scale update will include a “smoothed” impact of the shock as part of the usual methodology.

Future Issues

• Insured vs. general population impacts
  • Some evidence that impact on insured population will be less
  • SOA “socioeconomic decile” study will provide some guidance here
  • Consideration of consistent framework and changes to the current methodology (ex., averaging periods)

• Will COVID-19 have a long-term impact on mortality improvement rates, and what will the impact be?
  • Lower due to survivor impaired health as well as the indirect effect arising from the virus delaying the early condition diagnosis of dread diseases and preventative treatments?
  • Higher due to greater application of good hygienic habits (e.g., social distancing and washing hands) and/or higher utilization of other vaccines (such as the annual flu shot)?
  • Need to understand the impact in terms of potential effects on future slope and size of MI
  • Impact in light of a COVID-19 vaccine availability and effectiveness
General Population:
Pattern of excess deaths vs general mortality

A/E Ratios – COVID-19 vs 2015 VBT
- Actual deaths = COVID-19
- Expected deaths = 2015 Unisome, ANB 2015 VBT rates, weighted by 7/2019 estimated U.S. population
- Slope of VBT matches COVID-19 female rates better than male rates
- Small ratios >>> only 1 cause of death (COD) in numerator; all CODs in denominator

2013-2019 MI Scale Update Reports

2019 Scale: https://www.soa.org/resources/experience-studies/2019/mortality-improvement/
2016 Scale: https://www.soa.org/resources/experience-studies/2016/research-mortality-improvement-2016/
2013 Scale: https://www.soa.org/resources/experience-studies/2014/research-2014-mort-imp-rates
Comment from Lei Rao-Knight, CT Insurance Department
8/19/20

Reggie,

Please see CT comments below on the exposure, Life MI Subgroup Recommendation for 2020 Life MI Scale:

Life MI Subgroup Recommendation for 2020 Life MI Scale is reasonable considering the long-term nature of MI and the limited data on the recent significant event of COVID-19. Although the 2020 MI scale won’t reflect the impact of COVID-19, qualified actuaries should still consider in their VM-31 report the greater uncertainty due to COVID-19 in the anticipated experience assumption for 2020. Additional sensitivity on pandemic analysis to estimate the impact of COVID-19 is necessary for future VM-31 reports.

Thank you!

Lei
Brian Bayerle
Senior Actuary

August 25, 2020

Mr. Mike Boerner
Chair, NAIC Life Actuarial Task Force (LATF)

Re: Individual Life Insurance Mortality Improvement Scale Recommendation

Dear Mr. Boerner:

The American Council of Life Insurers (ACLI) appreciates the opportunity to comment on the exposed Individual Life Insurance Mortality Improvement Scale Recommendation for Use with AG 38 and VM-20 on behalf of our member companies. We appreciate the hard work of the Life Mortality Improvement Subgroup (LMIG) in development of their recommendation for the mortality improvement (MI) scale.

ACLI is supportive of the LMIG recommendation to maintain the current methodology for the 2020 MI scale. The methodology was designed to take currently available data and develop the scale in a repeatable manner. While the LMIG contemplated revisions to the 2020 MI scale due to the pandemic, they ultimately decided there is not sufficient data available at this time to make any COVID-19-specific adjustments. As the actual mortality experience becomes known over the next 1 to 2 years, that data will begin to inform the MI estimates gradually. We believe, in the absence of additional information, the LMIG recommendation is the best path forward.

We look forward to a discussion of this topic.

Sincerely,

cc: Reggie Mazyck, NAIC
December 3, 2020

From: Rhonda Ahrens, Chair
       The Longevity Risk (E/A) Subgroup

To: Mike Boerner, Chair
    The Life Actuarial (A) Task Force

Subject: The Report of the Longevity Risk (A) Subgroup to the Life Actuarial (A) Task Force

The Longevity Risk Subgroup has not met since the Summer National Meeting. The Subgroup plans to meet prior to the 2021 Spring National Meeting with a focus on Longevity Risk Transfer reserve formulation and potential C-2 factors for capital. In addition, the Subgroup will be awaiting year-end reporting of the zero-factor C-2 longevity risk measure in order to complete an impact study and work with the Life Actuarial (A) Task Force and Life Risk-Based Capital (E) Working Group on finalizing the C-2 factors within the adopted formula for C-2 longevity to be effective for year-end 2021 reporting.
December 3, 2020

From: Rhonda Ahrens, Chair
The Guaranteed Issue (GI) Life Valuation (A) Subgroup

To: Mike Boerner, Chair
The Life Actuarial (A) Task Force

Subject: The Report of the GI Life Valuation (A) Subgroup to the Life Actuarial (A) Task Force

The GI Life Valuation Subgroup has not met since the Summer National Meeting. The Subgroup plans to meet prior to the 2021 Spring National Meeting to continue discussion on potential solutions for GI Life mortality used for reserves, including potential solutions for use of own company mortality combined with a standardized mortality base and approaches for applying credibility standards to company specific mortality.
December 3, 2020

From: Fred Andersen, Chair
The Experience Reporting (A) Subgroup

To: Mike Boerner, Chair
The Life Actuarial (A) Task Force

Subject: The Report of the Experience Reporting (A) Subgroup to the Life Actuarial (A) Task Force

The Experience Reporting (A) Subgroup has not met since the Summer National Meeting. The Subgroup plans to meet prior to the Spring National Meeting to discuss development of mandatory experience reporting of variable annuity policyholder behavior data.
December 3, 2020

From: Fred Andersen, Chair
The Indexed Universal Life (IUL) Illustration (A) Subgroup

To: Mike Boerner, Chair
The Life Actuarial (A) Task Force

Subject: The Report of the Indexed Universal Life (A) Subgroup to the Life Actuarial (A) Task Force

The Indexed Universal Life Illustration (A) Subgroup has not met since the Summer National Meeting. The Subgroup plans to monitor activity in the IUL illustration space following the effective date of Actuarial Guideline XLIX-A, The Application of the Life Illustrations Model Regulation to Policies With Index-Based Interest Sold On or After November 25, 2020 (AG 49-A).
December 3, 2020

From: Pete Weber, Chair
The Variable Annuity Capital and Reserve (E/A) Subgroup

To: Mike Boerner, Chair
The Life Actuarial (A) Task Force

Subject: The Report of the Variable Annuity Capital and Reserve (E/A) Subgroup to the Life Actuarial (A) Task Force

The Variable Annuity Capital and Reserve (E/A) Subgroup has not met since the Summer National Meeting. The Subgroup continues to monitor results of companies implementing the Variable Annuity framework and stands ready to consider any requests of the Task Force or the Life Risk-Based Capital (E) Working Group.
The VM-22 (A) Subgroup of the Life Actuarial (A) Task Force met Oct. 28, 2020. The following Subgroup members participated: Bruce Sartain, Chair, and Vincent Tsang (IL); Perry Kupferman and Elaine Lam (CA); Jim Jakielo (CT); Mike Yanacheak (IA); Nicole Boyd (KS); William Leung (MO); Seong-min Eom (NJ); Russell Toal (NM); Bill Carmello (NY); Rachel Hemphill and Karen Jiang (TX); Tomasz Serbinowski (UT); and Craig Chupp (VA).

1. Exposed the Academy’s Preliminary Framework Elements for Fixed Annuity PBR

Ben Slutsker (American Academy of Actuaries—Academy) and John Miller (Academy) continued with an overview of the Academy’s Annuity Reserves Work Group (ARWG) preliminary framework elements for fixed annuity principle-based reserving (PBR) (see NAIC Proceedings – Fall 2020, Life Actuarial (A) Task Force).

Mr. Miller described the exclusion testing method being recommended by the ARWG. He said the work of determining the appropriate percentage and identifying which products should pass the stochastic exclusion ratio test is continuing. He said the other exclusion test methods being proposed are stochastic exclusion demonstration test and the certification test. He said the certification test is expected to be used infrequently.

Ms. Hemphill questioned whether the stochastic exclusion demonstration test should be performed more frequently than every three years in the years before the block of business has stabilized.

Mr. Miller and Mr. Slutsker discussed capital considerations, as well as tax and allocation issues. Mr. Slutsker said the ARWG is especially interested in receiving comments on whether the proposed allocation method is too complex. He said the ARWG is also interested in considering proposals for alternative allocation methods.

Mr. Slutsker said the proposed disclosures for VM-22, Statutory Maximum Valuation Interest Rates for Income Annuities, follow the disclosure requirements of VM-21, Requirements for Principle-Based Reserves for Variable Annuities, but might require a few adjustments to address the specific characteristics of fixed annuities. He said the ARWG recommends that if the NAIC begins to collect variable annuity mortality, lapse and policyholder behavior experience data, then experience data for non-variable annuities should be collected, as well.

Mr. Slutsker reiterated that the ARWG would like to receive comments on the proposal, including the appendices. He said the ARWG is especially interested in comments on the deterministic certification option in Appendix V.

Ms. Hemphill made a motion, seconded by Mr. Yanacheak, to expose the Academy’s preliminary framework elements for fixed annuity PBR for a 45-day public comment period ending Dec. 14. The motion passed unanimously.

Having no further business, the VM-22 (A) Subgroup adjourned.
The VM-22 (A) Subgroup of the Life Actuarial (A) Task Force met Oct. 26, 2020. The following Subgroup members participated: Bruce Sartain, Chair, and Vincent Tsang (IL); Perry Kupferman and Elaine Lam (CA); Jim Jakielo (CT); Mike Yanacheak (IA); Nicole Boyd (KS); William Leung (MO); Seong-min Eom (NJ); Russell Toal (NM); Bill Carmello (NY); Rachel Hemphill and Karen Jiang (TX); Tomasz Serbinowski (UT); and Craig Chupp (VA).

1. **Heard a Presentation from the Academy on its Preliminary Framework Elements for Fixed Annuity PBR**

Ben Slutsker (American Academy of Actuaries—Academy), John Miller (Academy) and Chris Conrad (Academy) continued with an overview of the Academy’s Annuity Reserves Work Group (ARWG) preliminary framework elements for fixed annuity principle-based reserving (PBR) *(see NAIC Proceedings – Fall 2020, Life Actuarial (A) Task Force)*. This portion of the presentation focused on liability assumptions, supplemental benefits, reinsurance, exclusion testing and aggregation.

Mr. Slutsker said a modeled reserve methodology consistent with VM-21, Requirements for Principle-BasedReserves for Variable Annuities, is being recommended for VM-22, Statutory Maximum Valuation Interest Rates for Income Annuities. He said the recommended policyholder behavior assumptions are also consistent with VM-21. He noted that, as drafting efforts begin, attention will be paid to other non-variable annuity products types with characteristics different from those captured in VM-21.

Mr. Slutsker said policy loans can be modeled explicitly or by substituting assets that are a proxy for policy loans. He said that using the latter method requires a demonstration that it produces reserves no less than those generated using the explicit method.

Mr. Robinson asked if the demonstration requires companies to continually calculate reserves under both methods. Mr. Slutsker said the demonstration could be done on off quarters, annually or biennially.

Mr. Miller said the ARWG recommends that aggregation be based on principles related to how risks are managed. The overview listed several of the principles that should apply and provided examples.

Mr. Sartain asked if the principles preclude the aggregation of products with differing timing of cash flows. Mr. Miller said the principles would not preclude aggregation of products with liabilities of various lengths or differing cash flows.

Mr. Slutsker said the ARWG welcomes comments on the issue.

Ms. Hemphill said there is an analogous concern in VM-20, Requirements for Principle-Based Reserves for Life Products.

Mr. Miller said the ARWG recommends exclusion tests similar to those provided in VM-20. Policies passing an exclusion test would be subject to the pre-PBR Commissioners Annuity Reserve Valuation Method (CARVM).

Mr. Sartain noted that products that may be unable to pass an exclusion test separately can pass the exclusion tests by being aggregated with another product.

Ms. Hemphill said that is a reason for VM-20 prohibition of aggregating products with different risk profiles.

Having no further business, the VM-22 (A) Subgroup adjourned.
1. **Heard a Presentation from the Academy on its Preliminary Framework Elements for Fixed Annuity PBR**

Ben Slutsker (American Academy of Actuaries—Academy), John Miller (Academy) and Chris Conrad (Academy) provided an overview of the Academy’s Annuity Reserves Work Group (ARWG) preliminary framework elements for fixed annuity principle-based reserving (PBR) (Attachment Seventeen-A). The overview covered the ARWG objective; vision and need; preliminary timeline; summary of the framework; and details of the proposed elements of the framework, with a special focus on asset assumptions.

Mr. Conrad said the ARWG recommends that the revised VM-22, Statutory Maximum Valuation Interest Rates for Income Annuities, apply to both deferred annuity and payout annuity contracts, whether they are considered individual or group contracts. He said it is yet to be determined whether modified guaranteed annuities (MGAs), structured annuities, or hybrid variable and fixed annuities will be in scope. He said the ARWG recommends a three-year optional implementation period. He said the ARWG will determine later whether to recommend application of the revisions to in-force policies.

Mr. Conrad discussed the reinvestment and asset assumptions, including the investment mix. He said, given the emphasis on general account spreads for fixed annuities, the ARWG recommends revisiting the reinvestment guardrail that consists of 50% A-rated corporate bonds and 50% AA-rated corporate bonds. The ARWG recommends using the current VM-22 asset mix consisting of 5% U.S. Treasury bonds, 15% AA-rated corporate bonds, 40% A-rated corporate bonds and 40% BBB-rated corporate bonds. He noted that the asset mix should be updated periodically to reflect actual industry investment practices.

Mr. Carmello voiced concern over the use of BBB-rated corporate bonds in the asset mix. He said company investment practices should not be considered when setting reserve requirements.

Mr. Sartain said an available path is to mimic VM-21, Requirements for Principle-Based Reserves for Variable Annuities, and then liberalize it as needed to accommodate VM-22.

Connie Tang (Prudential) said that, in earlier discussions, it was suggested that the Task Force be asked to reconsider the 50/50 reinvestment mix.

Ms. Hemphill said she would like to hear industry comments on all aspects of the reinvestment guardrail.

Mr. Sartain said the process for determining the guardrail and asset mix should be considered.

The ARWG plans to provide an informal education session as a follow-up to the overview.

2. **Voted to Recommend Exploration of an SPA for the Fixed Annuity PBR Framework**

Ms. Hemphill made a motion, seconded by Mr. Leung, to recommend exploration of a standard projection amount (SPA) for the fixed annuity principle-based reserving (PBR) framework, to the Life Actuarial (A) Task Force. The SPA will be analogous to the SPA used in VM-21. The motion did not include consideration of the SPA as either a reserve floor or a disclosure item. The motion passed unanimously.

Having no further business, the VM-22 (A) Subgroup adjourned.
Preliminary Framework Elements for Fixed Annuity PBR

American Academy of Actuaries Annuity Reserves Work Group (ARWG)

Ben Slutsker, MAAA, FSA
Chairperson, Annuity Reserves Work Group

John R. Miller, MAAA, FSA
Vice-Chairperson, Annuity Reserves Work Group

Chris Conrad, MAAA, FSA
Vice-Chairperson, Annuity Reserves Work Group

ARWG Objective

**Objective:** Propose a new statutory reserve methodology for fixed annuities that uses an actuarial framework to determine reserves based on the level and type of risk inherent in the contract.

**ARWG Pillars of Objective**

1) **Appropriate Reflection of Risk** – All else equal, greater risk in moderately adverse conditions requires greater statutory reserves, and vice-versa.

2) **Comprehensive** – The statutory reserve accounts for all material risks covered in the Valuation Manual and inherent in product features and potential management actions associated with the policies or contracts being valued.

3) **Consistency Across Products** – Statutory reserves between two contracts with similar features and risks are consistent given the same anticipated experience, regardless of product type.

4) **Practicality and Appropriateness** – Balance principles above with an approach that is practical, auditable, and able to be implemented.

(i) These objectives are specific to the ARWG and intentionally condensed; Refer to VM-21, Section 1.B for a formal list of PBR principles.
ARWG Vision and Need

**Vision**: Provide Academy framework on principle-based reserve (PBR) methodology for fixed annuity products and promote consistency with existing PBR frameworks.

**How ARWG Plans to Accomplish Vision**

a) **Propose a PBR Approach** – The ARWG plans to propose a CTE70 stochastic reserve calculation.

b) **Develop a Framework Deck** – Develop a set of slides laying out various elements of methodology.

c) **Recommend Consistency with VM-21 where Appropriate** – Start with VM-21 methodology.

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**Why Fixed Annuity PBR now?**

- **Flexible Methodology** – As new products introduce greater optionality and reinvestment risk, there is greater need for a reserve methodology that appropriately captures the risks in these products, as well as future products, benefits, and features that emerge.

- **Extend Existing PBR Framework** – Seek consistency between fixed annuities and life/variable annuities (VM-20/VM-21).

(i) The ARWG only proposes a PBR modeled reserve and will not include any formulaic or prescriptive floors in its proposal.

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**Preliminary Timeline**

<table>
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<tr>
<th>Timeframe</th>
<th>Activities</th>
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| Fall 2019 – Summer 2020 | • Develop proposed fixed annuity PBR framework deck  
  • Begin initial modeling sensitivities for generic FIA w/guarantee |
| Fall 2020       | • ARWG to present framework deck proposal to NAIC                                                   |
| Mid 2021        | • Seek LATF endorsement of PBR framework deck (w/feedback addressed)  
  • Valuation Manual language drafting efforts                                                   |
| Summer 2021     | • Begin industry field testing using draft (specifics TBD)                                         |
| 2022 - 2023     | • Target adoption of fixed annuity PBR (potentially VM-22)                                         
  • Target 1/1/2023 effective date (monitor as progress develops)                                |
## Summary of Preliminary Framework

### Methodology Elements of Framework

| **Scope**                  | Include account-value based and payout annuities  
|                           | Exclude GICs, Synthetic GICs, Guaranteed Separate Accounts, and stable value contracts |
| **Aggregation**           | Allow aggregation for contracts in which risks are managed together, following an associated set of additional principles and considerations (based on portfolio, management, administration) |
| **Exclusion Test**        | Use VM-20 exclusion test approaches, including ratio test  
|                           | If test is passed, then market/liability risk is not significant, and may elect to use pre-PBR reserve |
| **Capital Considerations**| Ultimately coordinate with future principle-based capital methodology  
|                           | Not included in fixed annuity PBR proposed framework |
| **Policy Allocation**     | Allocate reserves to policy level based on the GPVAD in a moderately adverse single scenario (calibrated to CTE70 level), assuming industry mortality table and immediate guarantee election |

### Asset Elements of Framework

| **Discount Rates and Starting Assets** | Follow VM-21 requirements, but consider safe harbor to use reinvestment rate upon depletion of assets in the projection (not for borrowing to address short-term liquidity needs) |
| **Reinvestments and Net Spreads**     | Use a reinvestment mix of 5% Treasury, 15% AA, 40% A, 40% BBB consistent with current VM-22 credit quality requirements, and use NAIC Valuation Manual default and reinvestment spreads |
| **Hedging**                           | Follow VM-21 requirements, but with optional index crediting hedge modeling approach using a breakage expense on interest credited (not requiring "adjusted" CTE run) and no CDHS definition |
| **Economic Scenarios**                | Follow VM-21 requirements |

### Liability Elements of Framework

| **Mortality (Modeled Reserve)**       | Follow VM-21 requirements |
| **Policyholder Behavior (Modeled Reserve)** | Follow VM-21 requirements, with additional disclosure for dynamic assumptions |
| **Non-Guaranteed Elements**           | Follow VM-20 requirements, but with greater focus on index account parameters, rider fees, riders benefit features subject to change, and account value charges |
| **Other Liability Assumptions**       | Follow VM-20 for policy loans; follow VM-21 for expenses and account transfers |
| **Reinsurance**                       | Follow VM-21 requirements |

### Other Elements of Framework

| **VM-31 Disclosures**                | Start with VM-21 disclosures and make modifications for unique elements of fixed annuity PBR framework, such as exclusion testing, non-guaranteed elements, etc. |
| **Experience Reporting**             | Annuity experience data currently not included in VM-50/VM-51  
|                                   | If eventually collecting for variable annuities, suggest also collecting for fixed annuities |
| **VM-G Governance**                 | Follow current VM-G wording, but including fixed annuity PBR  
|                                   | Also include any exclusion tests that use PBR reserves in scope |
| **Tax Considerations**              | Expect tax reserves set at 92.81% of NAIC PBR methodology (cap at stat reserves, floor at CSV)  
|                                   | Non-life-contingent payout contracts set to 100% of NAIC PBR methodology |
Proposed Elements of Framework

1) Scope
2) Discount Rates and Starting Assets
3) Reinvestments and Asset Assumptions
4) Hedging
5) Economic Scenarios
6) Mortality Assumptions
7) Policyholder Behavior Assumptions
8) Other Liability Assumptions
9) Non-Guaranteed Elements
10) Joint Payouts & Supplemental Benefits
11) Reinsurance
12) Aggregation
13) Exclusion Test
14) Tax Considerations and Allocation
15) Capital Considerations
16) VM-31 Disclosures
17) Experience Reporting
18) VM-G Governance
1 – Product Scope

### Products In-Scope

- Account Value Based Annuities
  - Deferred Annuities (SPDA & FPDA)
  - Multi-Year Guarantee Annuities (MYGA)
  - Fixed Indexed Annuities (FIA)
  - Market-Value Adjustments (MVA)
  - Two-tiered Annuities
  - Guarantees/Riders on Fixed Annuity Contracts
- Payout Annuities
  - Single Premium Immediate Annuities (SPIA)
  - Deferred Income Annuities (DIA)
  - Pension Risk Transfer Annuities (PRT)
  - Structured Settlement Contracts (SSC)

### Products Out-of-Scope

- Guaranteed Investment Contracts (GICs)
- Synthetic GICs and Stable Value Contracts
- Funding Agreements
- VM-21 or Fixed Annuity PBR (TBD)
  - Modified Guaranteed Annuities (MGAs)
  - Structured Annuities
  - Hybrid Variable and Fixed Annuities

### Contract Application

- New Business: 3yr optional implementation period
- In Force: Eventual application? (See Appendix IV)

---

2 – Discount Rate and Starting Assets

**Recommendation:** Follow VM 21 requirements, but with possible safe harbor for borrowing upon depletion of assets.

**Preliminary Fixed Annuity PBR Methodology (consistent with VM-21)**

**a) Discount Net Asset Earned Rate (NAER) (same as VM-21)**
- Determine vector of annual earned rates replicating growth in invested additional asset portfolio to end of projection
- Calculate present value of accumulated deficiencies by discounting at the NAER
- Allow "Direct Iteration Method" to solve for starting assets resulting in "defeasement" of future benefits/expenses

**b) Project the Additional Assets (same as VM-21)**
- Project invested additional asset portfolio, outside of starting asset portfolio
- If there are accumulated deficiencies at end of year, then increase assets and repeat

**c) Borrowing Assumption (same as VM-21, but with update)**
- Consistent with VM-21, generally assume no lower than the rate at which positive cash flows are reinvested in same time period
- Recommend additional safe harbor to use new money reinvestment rate upon depletion of assets in the projection, which can cause the borrowing rate to unreasonably inflate as assets approach zero (different than borrowing for short-term liquidity needs)

**d) Starting Assets (same as VM-21)**
- Set to separate account plus hedges and book value general account assets, inclusive of IMR
3 – Reinvestments and Asset Assumptions

**Recommendation:** Use assumptions consistent with VM-20/VM-21, but propose using a reinvestment mix in line with the current VM-22 credit quality mix instead of the current VM-20/VM-21 requirements.

**Preliminary Fixed Annuity PBR Methodology** (varies from current VM-21 requirements)

a) **Reinvestment Mix**
   - If prescribing default/reinvestment spread assumptions, then given the emphasis on general account spread for fixed annuity products, suggest revisiting 50% A / 50% AA fixed income reinvestment guardrail (which does not reflect industry experience).
   - Propose using a reinvestment mix consistent with the current VM-22 requirements of 5% Treasury, 15% AA, 40% A, 40% BBB.
     - This credit quality mix is already used in current fixed annuity valuations and better represents average industry holdings.

b) **Spreads and Defaults**
   - For default and reinvestment spread assumptions, linearly grade from the current to long-term assumptions in the Valuation Manual over projection years 1 to 4, and reflect initial yields on starting assets (consistent with VM-20/VM-21).

c) **No NAIC Designation**
   - If asset has no NAIC designation, use company-specific prudent estimate assumptions subject to 104% of most applicable Treasury plus 25 bps (consistent with VM-20/VM-21).

* **Rationale:** Fixed annuity contracts contain a greater build-up of general account assets that influence the modeled reserves relative to other risks, whereas this may be to a lesser extent for variable annuities and life insurance (mortality-dependent).

(i) Changes to other VM sections are beyond the scope of this effort, but to achieve consistency across the Valuation Manual (i.e., life, variable annuities); VM-20 ad VM-21 may also warrant review for considering similar modifications.

4 – Hedging Requirements

**Recommendation:** Model future hedging programs if tied directly to contracts whether CDHS or not. Use VM-21 hedging requirements for GMxB’s, with alternative approach and hedge breakage expense permitted if hedging indexed credits.

**Preliminary Fixed Annuity PBR Methodology** (consistent with VM-21 except hedges on indexed credits and CDHS)

a) **No CDHS Qualification** – Recommend all future hedging cash flows be reflected, regardless of whether CDHS or not.

b) **Hedging Effectiveness** – Increase the CTE70 (Best Efforts) by a hedging error term, set to an error factor (5% to 100% based on back-testing) multiplied by the difference between Best Efforts and Adjusted CTE70 amounts, with optional method for indexed credit hedges:
   - For hedges on indexed credits, reflect a hedge breakage expense in CTE70 (Best Efforts) by reducing hedge payoffs relative to modeled index credits using an effectiveness multiple (1-[E%]); Do not require “Adjusted CTE70” run.
   - For a proposed minimum hedge breakage expense level and methodology, see point (e) on following slide.

c) **Hedging Cost Scope & Documentation** – Make consistent with VM-21.

d) **Comprehensive Hedging Programs** – Allow bifurcation of indexed-credits vs. others if separately identifiable.

(i) **CDHS = Clearly Defined Hedging Strategy; currently, if conditions meet definition, then may include as part of future hedging in VM-20/VM-21; if CDHS definition goes away, must consider if and what to put in place for defining a “seasoned hedging program”**

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4 – Hedging Requirements

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**Preliminary Fixed Annuity PBR Methodology (consistent with VM-21 except hedges on indexed credits and CDHS)**

e) **Index Credit Hedge Breakage Expense** – Model a breakage expense related to inefficiencies in the company’s hedge program and differences between the model and reality, supported by back-testing, length of program history, and variances observed over time. This expense shall be no less than a multiplicative [1]% of the interest credited to derive a prudent estimate assumption (may model as an additional expense or reduction in investment income):

- In absence of sufficient and credible back-testing, the company must reflect a breakage expense of at least [20]% of the interest credited, but must reflect their own experience if less effective
- Consider costs of both under and over-hedging, as well as possible future market conditions that have not been historically observed; Sensitivity test risks deemed to be material, which may include sustained low interests, credit spreads spikes, and counterparty risk

**Conceptual Rationale for Hedge Breakage Expense**

- Hedging programs on index credits are frequently engrained in the product design and, as a result, tend to have lower basis risk and greater effectiveness than GMXB hedging programs
- Recommend hedge breakage expense lower than 5% minimum error applicable to GMWB hedging
- Consistent with moderately adverse levels in statutory reserves, still reflect a prudent estimate assumption for potential basis risk stemming from persistency and hedge transaction timing.
- The minimum hedge error is based on ARWG discussions and will be refined through field testing

5 – Economic Scenarios

**Recommendation:** Follow VM-21 requirements for now and defer future ESG decisions to broader NAIC/Academy initiative.

**Preliminary Fixed Annuity PBR Methodology (consistent with VM-21)**

a) **VM-21 Requirements**

- Use current prescribed Economic Scenario Generator for interest and rate and equity assumptions
- May use a non-prescribed generator if supported by VM-31 documentation and results in reserves that are no less than if using the prescribed generator

b) **Current ESG Activities**

- Academy and Society of Actuaries have a project oversight group that has been following NAIC updates to the Economic Scenario Generator
- NAIC has been holding separate calls to advance this initiative
6 – Mortality Assumptions (Modeled Reserve)

**Recommendation:** Use the same methodology as VM-21 for Fixed Annuity PBR.

**Preliminary Fixed Annuity PBR Methodology (consistent with VM-21)**

a) **Prudent Estimate Mortality** – “Based on facts, circumstances and appropriate actuarial practice” with limited unsupported judgement

b) **Determination of Expected Mortality Curves** – Develop expected mortality curves based on actual experience if available; in absence of direct data, look to use data from a similar business segment:
   - If there is no data, company should use 2012 IAM Basic Table with Scale G2
   - Apply margins to reflect data uncertainty and credibility
   - Expected mortality curves should not result in lower reserve than using a curve based on actual deaths
   - Age of experience data should be documented

c) **Adjustment for Credibility to Determine Prudent Estimate Mortality** – Adjust for credibility by blending expected mortality curves with a mortality table consistent with a statutory valuation mortality table
   - Reflect Scale G2 improvement up to valuation date for company/industry mortality (required if results in higher reserve)

d) **Future Mortality Improvement** – Adjust for improvement beyond valuation date if it increases the stochastic reserve
   - If future improvement reduces reserve, such assumptions are not required, but permitted


7 – Policyholder Behavior Assumptions (Modeled Reserve)

**Recommendation:** Use the same methodology as VM-21 for Fixed Annuity PBR.

**Preliminary Fixed Annuity PBR Methodology (consistent with VM-21)**

a) **General** – For assumption-setting, consider features, elective vs. non-elective benefits, in-the-moneyness, rational vs. irrational behavior

b) **Margins** – Set prudent estimates independently unless determining appropriate method for aggregate margin of two or more behaviors

c) **Sensitivity Testing** – Conduct appropriate and robust sensitivity testing, and use higher margins when experience is not credible/relevant

d) **Specific Considerations and Requirements** – Consider all relevant forms of behavior and differ assumptions by contract attributes
   - Behavior assumptions should be no less conservative than past experience
   - Consider an increase in efficiency over time (unless there is clear evidence to the contrary)
   - Use actual experience data directly applicable to business if available; in absence of data, refer to a similar business segment

e) **Dynamic Assumptions** – Encourage dynamic assumption-setting and require sensitivity testing if using static assumptions or one-sided dynamic assumptions to demonstrate appropriateness across various types of economic conditions

f) **Consistency with the CTE Level** – Use prudent estimates that are reasonable and appropriate in scenarios associated with CTE level

g) **Guaranteed Living Benefits (GLBs)** – When developing experience for policyholder behavior assumptions with contracts that contain GLBs, limit the experience used from contracts without GLBs
8 – Other Liability Assumptions (Modeled Reserve)

**Policy Loans** (consistent with VM-20)

**Recommendation:** Use VM-20 methodology.

Determine cash flows for policy loan assets for each projection interval in one of two ways:

1) Model existing loan balances explicitly:
   - Treat policy loan activity as an aspect of policy behavior subject to contractholder behavior requirements
   - Assign loan balances to match each policy’s utilization or reflect average utilization over model segment
   - Model policy loan interest in a manner consistent with policy provisions and loan principal repayments, including those that occur automatically on death or surrender

2) Substitute assets that are a proxy for policy loans:
   - Demonstrate that the substitution produces reserves are not materially different than modeling policy loans explicitly
   - Must comply with policyholder behavior requirements

**Expenses and Account Transfers** (consistent with VM-21)

**Recommendation:** Use VM-21 methodology.

- Within materiality considerations, company should consider account transfers (switching/exchanges)
- For account transfers, it may be acceptable to ignore certain items that might otherwise be explicitly modeled in an ideal world, particularly if the inclusion of such items reduces the calculated provisions (e.g., impact of account transfers might be ignored unless required under the terms of the contract)
- If assuming static account allocations with no transfers throughout the projection or another simplification, provide sensitivity testing and rationale that justifies that such is a prudent estimate or does not materially understate the reserve
- For expenses, follow VM-21 requirements, including prudent estimates and allocating fixed maintenance expenses (e.g., overhead) to segments

**Recommendation:**

- Use VM-20 methodology.
- Use VM-21 methodology.

9 – Non-Guaranteed Elements

**Recommendation:** Use the same methodology as VM-20 for Fixed Annuity PBR.

**Preliminary Fixed Annuity PBR Methodology** (consistent with VM-20)

a) “Non-guaranteed elements” (NGE) defined in VM-01 as: dividends under participating policies or contracts; or other elements affecting life insurance or annuity policyholder/contract-holder costs or values that are both established and subject to change at the discretion of the insurer

b) NGE determination factors:
   - The nature of contractual guarantees
   - The company’s past NGE practices and established NGE policies
   - 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

c) Fixed Annuity PBR NGEs – Examples include, but not limited to: fixed credited rates, index account parameters (caps, spreads, par rates, etc.), rider fees, riders benefit features subject to change (rollup rates, rollup period, etc.), account value charges, dividends

d) Projected NGE – Established based on projected experience which is consistent with actual NGE determination

e) Prudent Estimates – Shall reflect margins for adverse deviations and estimation error in prudent estimate assumptions for material risk factors, including NGEs (VM-31 currently contains a NGE margin disclosure)
10 – Joint Payouts & Supplemental Benefits

**Recommendation:** Reserve for all the available payout options in some reasonable method.

**Fixed Annuity PBR Methodology (new)**

a) Require consideration of joint payout options, supplementary benefits, and riders in the modeled reserve with the following principles:
   - Policyholders will generally not take partial withdrawals or other actions that diminish future benefits
   - Contracts with living benefits will generally use the more valuable of living benefits or annuitization
   - When advantageous, expect policyholders commence benefit payouts if not taken yet

b) Outline principles/guidance for riders and supplemental benefits for annuities in the “Riders and Supplemental Benefits” subsection of Section II of the Valuation Manual, similar to life insurance riders:
   - If premium or features are linked to the base contract after issue, such as riders that accelerate annuity benefits upon a conditional event, must include in the base contract modeled reserve, such as a long term care acceleration benefit
   - If premium or features are not linked to the base contract after issue (other than funding rider fees through base contract account value), may value together or separately from the base contract

**AG33 does not explicitly require that joint life benefit options are included in the CARVM calculation, so require consideration of reflecting these features in PBR calculations.**

11 – Reinsurance

**Recommendation:** Adopt same requirements as VM-21 for purposes of the treatment of reinsurance.

**Treatment of Reinsurance in VM-21**

- **Calculate Pre & Post Reserves** – The aggregate reserve shall be determined for both post-reinsurance ceded (net of cash flows associated with any treaties accounted for as reinsurance under statutory requirements) and pre-reinsurance ceded (VM-21 3.B)
- **Post-Reinsurance Ceded** – To determine the aggregate reserve post-reinsurance ceded, accumulated deficiencies and scenario reserves shall reflect all anticipated reinsurance premiums, costs and recoveries by recognizing limitations in the treaties, such as caps on recoveries or floors on premiums (VM-21 5.A.2)
- **Pre-Reinsurance Ceded** – To determine the aggregate reserve pre-reinsurance ceded, accumulated deficiencies and scenario reserves shall ignore any anticipated reinsurance premiums, costs and recoveries (VM-21 5.A.2)

**Uses of Reinsurance**

<table>
<thead>
<tr>
<th><strong>Variable Annuities</strong></th>
<th><strong>Fixed Annuities</strong></th>
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<tbody>
<tr>
<td>Reserve financing excess GMWB reserves</td>
<td>Reserve financing for excess AG33 reserves on GMWBs, similar to variable annuities</td>
</tr>
<tr>
<td>Prior to VM-21 revisions, helped reduce volatility on statutory net income</td>
<td>Traditionally used to transfer interest rate risk</td>
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12 – Aggregation

**Recommendation:** Aggregate based on established set of principles related to how risks are managed.

**Preliminary Fixed Annuity PBR Methodology** *(consistent with VM-21)*

a) **List of Principles** – Permit aggregation if the groups of policies follows the below outlined principles:
   - Aggregate in a manner that is consistent with risk management strategy and reflects the likelihood of any change in risk offsets that could arise from shifts between product types *(consistent with VM-20/VM-21)*
   - Do not aggregate for groups of policies for which the business and risks are managed separately or are not part of the same integrated risk management program *(consistent with VM-20/VM-21)*
   - Using prudent actuarial judgement, consider the following elements when aggregating: whether groups of policies are part of the same portfolio (or different portfolios that interact), same integrated risk management system, administered/managed together
   - Use same aggregation principles for exclusion testing, CTE70 calculation grouping, and comparisons to final reserve components

<table>
<thead>
<tr>
<th>Not Aggregating</th>
<th>Aggregating</th>
</tr>
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<tbody>
<tr>
<td>Group pension risk transfer (PRT) business and individual single premium deferred annuities (SPDAs) are managed in separate departments and priced and administered independently</td>
<td>Single premium income annuities (SPIAs) and fixed indexed annuities (FIAs) with guaranteed living benefits are managed in the same department and follow the same risk management program</td>
</tr>
</tbody>
</table>

**Possible Examples for Aggregation**

- **Not Aggregating**
  - Group pension risk transfer (PRT) business and individual single premium deferred annuities (SPDAs) are managed in separate departments and priced and administered independently

- **Aggregating**
  - Single premium income annuities (SPIAs) and fixed indexed annuities (FIAs) with guaranteed living benefits are managed in the same department and follow the same risk management program

13 – Exclusion Test Methodology

**Recommendation:** Use VM-20 exclusion testing methodology with modifications, consisting of three options: ratio test, demonstration test, and certification. If pass, use pre-PBR CARVM. Same test applicable to all fixed annuity types. No alternative methodology.

**Overlying Principles**

a) Policies for which economic/market risks are material are intended to fail the exclusion test
b) Policies with material policyholder behavior risk that vary with economic scenarios are intended to fail the exclusion test
c) Such economic/market risks being tested include interest rate risk, equity risk, reinvestment rate risk, asset volatility risk, disintermediation risk, and asset default risk
d) Guarantees where the expected benefits exceed what is provided for by the account value would fail the exclusion test
e) Exclusion tests should be based on materiality of risk rather than the size of a company
f) Perform exclusion test in aggregate *(consistent with VM-20)*, using the same aggregation rules as PBR modeled reserves
g) Electing to perform the exclusion test should be optional for a group of policies *(consistent with VM-20)*

**Examples of Products that Might Pass or Fail** *(more principles being developed by ARWG)*

- **Passing**
  - Short-term payout annuities *(e.g., 15-20yr certans)*
  - Fixed deferred annuities without attached guaranteed minimum benefits

- **Failing**
  - Hedge programs supporting guaranteed living benefits
  - Long duration SPIAs, PRT, and payout annuities
  - Deferred annuities with material guarantees
13 – Exclusion Test Methodology

**Recommendation:** Use VM-20 exclusion testing methodology with modifications, consisting of three options: ratio test, demonstration test, and certification. If pass, use pre-PBR CARVM\(^1\). Same test applicable to all fixed annuity types. No alternative methodology.

**Preliminary Fixed Annuity PBR Methodology (consistent with VM-20)**

a) **Stochastic Exclusion Ratio Test** – Use same method as VM-20, with the same 16 prescribed scenarios. The difference between the highest reserve and the baseline must be less than a \(x\)% of the baseline reserve to pass

- Set \(x\)% based on threshold to allow fixed annuities without guaranteed minimum benefits to pass and exclude long-duration and pension risk transfer contracts from passing
  - Propose not allowing GLBs with greater than 1%-3% roll-up rate to pass

- Initially set \(x\)% threshold through ARWG preliminary modeling, but eventually establish through field testing.

- Use unmargined scenario reserves or leverage Asset Adequacy Testing (AAT) or Cash Flow Testing (CFT) model

- Similar to VM-20, purpose is to quantify asset volatility & ALM risk

\(i\) If passing the exclusion test, then companies may use pre-PBR CARVM of AG33 methodology with type A, B, C rates for SPIAs issued before 2018, AG33 methodology with VM-22 rates for SPIAs issued on/after 2018, and AG33/35 methodology (with interest rate updates for modernization initiatives on new policies) for non-SPIAs.

b) **Stochastic Exclusion Demonstration Test** – Demonstrate that the stochastic reserve is less than AG33 / pre-PBR CARVM

- Similar to VM-20, allow use of a prior valuation within the past 3 years to conduct test

- May use a subset of policies/scenarios or show substantial elimination of an element that would make CTE70 prevail

- Compare to AG33 / AG35 / pre-PBR formulaic reserves

c) **Certification Method** – Subject to regulatory approval, qualified actuary to certify that policies are not subject to material market or asset volatility risk and have limited policyholder optionality

- Demonstrate the AG33 reserve is greater than principle-based reserve under the NY7 or 16 exclusion scenarios

- May use qualitative risk assessments, showing documentation that supports analysis

- Not allowed for guaranteed living benefits, pension risk transfer business, or future hedging programs

\(ii\) If passing the exclusion test, then companies may use pre-PBR CARVM of AG33 methodology with type A, B, C rates for SPIAs issued before 2018, AG33 methodology with VM-22 rates for SPIAs issued on/after 2018, and AG33/35 methodology (with interest rate updates for modernization initiatives on new policies) for non-SPIAs.
13 – Exclusion Test Methodology

**Recommendation:** Use VM-20 exclusion testing methodology with modifications, consisting of three options: ratio test, demonstration test, and certification. If pass, use pre-PBR CARVM\(^1\). Same test applicable to all fixed annuity types. No alternative methodology.

**Additional Considerations (new)**

a) **Economic Scenarios** – For ratio test, use current 16 scenarios for, but different threshold than VM-20 (i.e., 6%) based on field testing.

b) **Longevity Risk** – Include whether longevity risk is material in the exclusion test; All ratio test economic scenarios should be run twice: once with a [5\%] increase to mortality and once with a [5\%] decrease (but do not shock “baseline scenario”, i.e., Scenario 9).

c) **Ratio Test Assumptions** – Reflect mortality improvement, no margins, no correlation between longevity and economic risks.

d) **Hedging Programs** – Blocks with any hedging programs that involve the projection of future hedge purchases, sales, or reinvestments, other than those that solely support indexed credits, are not eligible for the stochastic exclusion test.

e) **Open Blocks** – May aggregate newly issued business being valued for the first year with inforce business that has already been valued under PBR, as long as it is in the same model segment; therefore, open blocks are to be continuously tested as new business is added.

f) **Frequency** – Perform exclusion test annually for fixed annuities, except for the demonstration test (every 3 years).

g) **Reinsurance** – Conduct separate exclusion tests for pre and post reinsurance runs to calculate reserve credit, similar to VM-20. Consider option to only require post-reinsurance exclusion testing for prorata coinsurance with no material changes in risk.

h) **Deterministic Scenario** – Upon passing, consider allowing a deterministic PBR in specified cases? (see Appendix V)

(i) If passing the exclusion test, then companies may use pre-PBR CARVM of AG33 methodology with type A, B, C rates for SPIAs issued before 2018, AG33 methodology with VM-22 rates for SPIAs issued on/after 2018, and AG33/35 methodology (with interest rate updates for modernization initiatives on new policies) for non-SPIAs.

14 – Capital Considerations

**Recommendation:** Capital methodology is not included as part of this proposed framework; will be handled separately by C3 Life & Annuities Work Group.

**C3 Life and Annuities Work Group Preliminary Plans**

a) **Group Focus** – This proposal does not include considerations for capital and only focuses on reserves at this time. The Academy C3 Life & Annuities Work Group separately plans to explore a C-3 Phase 2 framework for non-variable annuity contracts in the future.

   – The idea will be to accommodate the future prescribed economic scenario generator and various VM-22 PBR elements at that time, depending on timing and progress of each initiative.

   – This initiative is intending to cover non-variable annuities and products currently in scope of C3 Phase I.
15 – Tax Considerations and Allocation

Recommendation: Use a different allocation methodology than VM-21 for Fixed Annuity PBR.

Preliminary Fixed Annuity PBR Methodology

a) Tax Cuts and Jobs Act of 2017 (TCJA)
   - Compute preliminary tax reserves using NAIC-prescribed method applicable to the contract at the valuation date
   - Fixed, Fixed Indexed Annuities and Life Contingent Payouts preliminary tax reserves are not fully deductible
     • Final tax reserves are 92.81% of preliminary tax reserves, which is then capped at the statutory reserve and floored at CSV
     • Non-life-contingent payout annuity (e.g. annuity certain) preliminary tax reserves are set 100% of preliminary tax reserves if the discount rate is equal to the highest NAIC discount rate at the valuation date
   - Variable annuity tax reserves, in contrast, equals the sum of 100% x max(CSV, separate account reserve) and 92.81% x additional excess total contract reserves (such excess reserves may include reserves held in the general or separate accounts)

b) Seriatim Reserves
   - TCJA requires tax reserves at the seriatim level for all life insurance and annuity policies
   - VM-21 allocates aggregate PBR reserves in excess of the CSV to individual contracts based on a measure of risk relative to CSV
   - Under VM-21, companies with identical blocks of variable annuity business could choose different assumptions for measuring risks in determining their tax reserves
   - This is a particularly relevant issue for fixed annuities, which may have less deductibility than variable contracts due to differences in methodology and, thus, may warrant a different allocation method

Preliminary Fixed Annuity PBR Methodology (new)

For the Fixed Annuity PBR, propose a prescribed allocation approach rather than using VM-21 method. Would be interested in hearing any additional proposed methods from regulators/interested parties, but the below is an initial placeholder solution:

a) Allocate all modeled reserves in excess of the CSV is based on the greatest present value of accumulated deficiencies (GPVAD) under a moderately adverse scenario for each contract (see example of below methodology in Appendix III)
   - Select the scenario from the NAIC economic scenario generator that produces the scenario reserve closest to, but not less, than the CTE70 aggregate reserve
   - For the purposes of allocation, use CSV as the starting asset level and floor the GPVAD at zero
     • Such that a FIA w/GLWB would generally have a higher GPVAD for an FIA w/o GLWB and the same CSV (the contract w/o GLWB may have a negative GPVAD and be floored at zero)
     • A payout annuity would have no CSV, so it would have a higher GPVAD → Makes sense since it does not have a CSV and should contribute directly to the reserve excess over CSV

b) Assume immediate exercise of guarantees and prescribed mortality under an applicable SOA table

c) If all policies have “zero” GPVAD in the model segment, use CSV to allocate any reserves in excess of CSV
16 – VM-31 Disclosures

**Recommendation:** Use the same section as VM-21, but add specific requirements for fixed annuities.

**Preliminary Fixed Annuity PBR Methodology** *(consistent with VM-21 except below updates)*

- **Sections that Do Not Apply** – Phase in, Alternative Methodology, and RBC sections do not apply to fixed annuities
- **New Sections** – Add NGE, exclusion test, and sensitivity sections for fixed annuities (not currently in variable annuity VM-31)
- **General Account Assets** – Disclose full reserve calculation using company investment policy vs. applicable VM-22 limits
- **Hedging** – Documentation of index-hedging modeling methodology and back-testing, sensitivity testing, and justification for breakage hedge expense; If CDHS removed, modify hedging disclosures as well (but retain fair value disclosure)
- **Supplemental Benefits** – How joint payout options and other supplemental benefits are being captured, as well as a sensitivity tests
- **Dynamic Policyholder Behavior** – Dynamic lapse, partial withdrawal, and utilization assumptions disclosure and demonstration across scenarios if there are no or only one-sided dynamic components with respect to market rates/in-the-moneyness

*If aggregation between fixed and variable annuities are not permitted, then there would be separate VM-31 fixed and variable sub-reports, but may still consider drafting VM-31 requirements in same section as variable annuities to avoid redundancy*

---

17 – Experience Reporting

**Recommendation:** If VM-50/VM-51 begins to incorporate variable annuities into the NAIC experience data collection process, request to also include fixed annuity data (i.e., indexed, deferred, and payout) as part of the experience data collection.

**Preliminary Fixed Annuity PBR Methodology**

- **Current NAIC Experience Data Collection Process**
  - Handled by VM-50 and VM-51 in the NAIC Valuation Manual
  - 2021 is the first year that the NAIC will begin to collect industry experience data
  - Only focuses on life data experience collection and does not incorporate annuities at this point

- **Current State Experience Collection Process**
  - NY and KS have collected experience data in past years
  - NY will continue to have a separate data collection process, including mortality, policyholder behavior, and SI/GI data
  - NY will collect variable annuity experience data for the first time in 2020

- **Future Experience Data Collections**
  - NAIC has periodically discussed the topic of collecting variable annuity experience data
  - If eventually collecting variable annuity data, also requests to collect fixed annuity data
18 – VM-G Governance

**Recommendation:** Add fixed annuity PBR to the scope of VM-G (including exclusion tests that use unmargined PBR reserves). No other changes are needed.

**Preliminary Fixed Annuity PBR Methodology** *(consistent with VM-20 and VM-21)*

1. Same as current VM-G requirements, but with references to VM-22 added
2. Also scope in any exclusion testing methods that use PBR calculations, consistent with treatment for VM-20

**Possible VM-G Revisions:**

The corporate governance guidance provided in VM-G is applicable only to a principle-based valuation calculated according to methods defined in VM-20, VM-21, and VM-22.

For a company that does not compute any deterministic or stochastic reserves under VM-20 or VM-22 as a result of passing the exclusion tests as defined in VM–20 Section 6 or VM-22 [Section X], and it does not calculate any reserves under VM-21, VM-G Sections 2 and 3 below are generally not applicable; the requirements of Section 4 are still applicable.

Additionally, if the company calculated the SERT using the deterministic reserve method outlined in VM-20 Section 6.A.2.b.i.a, or the Stochastic Exclusion Demonstration Test outlined in VM-20 Section 6.A.3, or if the company used the [Ratio Test using unmargined PBR reserve] or the [Demonstration Test] exclusion tests as defined in VM-22 [Section X], then VM-G Sections 2 and 3 are applicable.

---

**Questions?**

- Khloe Greenwood  
  Life Policy Analyst  
  American Academy of Actuaries  
  Greenwood@actuary.org
Appendix I: Product Descriptions

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Premium Deferred Annuity (SPDA)</td>
<td>An annuity with an account value established with a single premium amount that grows with a guaranteed interest rate during the accumulation phase and has guaranteed mortality and interest rates applicable at the time of conversion to the payout phase.</td>
</tr>
<tr>
<td>Flexible Premium Deferred Annuity (FPDA)</td>
<td>An annuity with an account value established with a premium amount but allows for additional amounts to be paid in to the annuity over time, resulting in an increase to the account value.</td>
</tr>
<tr>
<td>Fixed Indexed Annuity (FIA)</td>
<td>An annuity with an account value where the contractholder has the option for a portion or all of the account value to grow at a rate linked to an external index.</td>
</tr>
<tr>
<td>Multiple Year Guarantee Annuity (MYGA)</td>
<td>A type of fixed annuity that provides a pre-determined and contractually guaranteed interest rate for a specified period of time, after which there is typically an annual reset or a renewal of a multiple year guarantee period.</td>
</tr>
<tr>
<td>Market-Value Adjustment (MVA) Annuity</td>
<td>An annuity with an account value where withdrawals and full surrenders are subject to adjustments based on interest rates at the time of withdrawal/surrender. There could be ceilings and floors on the amount of the Market Value Adjustment (MVA).</td>
</tr>
<tr>
<td>Two-Tiered Annuity</td>
<td>An annuity with two tiers of account values. One, with a higher accumulation interest rate, is only available for annuitization or death. The other typically contains a lower accumulation interest rate, and is only available upon surrender.</td>
</tr>
</tbody>
</table>

(i) The descriptions contained on these slides are not recommendations of definitions to add to the Valuation Manual or any other regulation or guideline. In addition, these are not official definitions under the Academy or any other formal body. Such descriptions are only provided as a glossary to reference in understanding the acronyms and terms intended to be conveyed in this presentation, and only this presentation.
## Appendix I: Product Descriptions (cont’d)

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Premium Immediate Annuity (SPIA)</td>
<td>An annuity purchased with a single premium amount which guarantees a periodic payment for life of the annuitant or a term certain and payments begin within one year after (or from) the issue date.</td>
</tr>
<tr>
<td>Deferred Income Annuity (DIA)</td>
<td>An annuity which guarantees a periodic payment for the life of the annuitant or a term certain and payments begin one year or later after (or from) the issue date.</td>
</tr>
<tr>
<td>Pension Risk Transfer (PRT) Annuity</td>
<td>An annuity (typically group contract) issued by insurance company to cover participants in a retirement plan that guarantees periodic payments to retirement participants. The insurance company holds the assets (general or separate account) and has not only longevity risk but also asset risk (credit and reinvestment).</td>
</tr>
<tr>
<td>Structured Settlement Contracts (SSC)</td>
<td>Periodic benefits arise from various types of claims pertaining to court settlements or out-of-court settlements from tort actions, such as arising from accidents or medical malpractice; Adverse mortality may be underwritten.</td>
</tr>
<tr>
<td>Variable Annuity (VA)</td>
<td>An annuity where benefits or account balance vary according to the investment experience of investment funds in an insurance company separate account.</td>
</tr>
<tr>
<td>Term Certain &quot;Annuity&quot;</td>
<td>A contract issued by an insurance company which offers guaranteed periodic payments for a specified period of time, not contingent upon mortality or morbidity of the annuitant.</td>
</tr>
</tbody>
</table>

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## Appendix I: Product Descriptions (cont’d)

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guaranteed Investment Contract (GIC)</td>
<td>Insurance contract typically issued to a retirement plan (defined contribution) under which the insurer accepts a deposit (or series of deposits) from the purchaser and guarantees to pay a specified interest rate on the funds deposited during a specified period of time.</td>
</tr>
<tr>
<td>Synthetic GIC</td>
<td>Contract that simulates the performance of a traditional GIC through a wrapper, swap, or other financial instruments, with the main difference being that the assets are owned by the policyholder or plan trust.</td>
</tr>
<tr>
<td>Funding Agreement</td>
<td>A contract issued to an institutional investor (domestic and international non-qualified fixed income investors) that provides fixed or floating interest rate guarantees.</td>
</tr>
<tr>
<td>Stable Value Contracts</td>
<td>Provide limited guarantees for stable value fund portfolios (bond portfolios in defined contribution plan that protect against losses/declines in yield), preserving the principal while providing steady, positive returns for participants.</td>
</tr>
<tr>
<td>Modified Guaranteed Annuity (MGA)</td>
<td>A type of market-value adjusted annuity contract where the underlying assets are held in an insurance company separate account and the values of which are guaranteed if held for specified periods.</td>
</tr>
<tr>
<td>Structured Annuity</td>
<td>Deferred annuity contract, typically sold as a registered product, where the account value is linked to the value of an external index, including potential triggers and floors that may limit a portion of downside (or upside) risk.</td>
</tr>
</tbody>
</table>

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Appendix II: Applicable Actuarial Guidelines

**AG’s with clear fixed annuity relevance**
- 3 – Nonforfeiture for Individual Deferred Annuities
- 8 – SPDA Valuation
- 9 – SPIA Form Classification
- 9A – Structured Settlements: Substandard mortality
- 9B – Clarify Standard Valuation Law: SPIA, DA, Str. Sett
- 9C – SPIA: Substandard mortality
- 10 – Guideline: Standard Nonforfeiture Law for Individual Deferred Annuities
- 13 – Guideline: CARVM
- 33 – CARVM Reserves: Elective Benefits
- 35 – CARVM: Equity Index Annuities
- 41 – CARVM: Projection of Guaranteed Benefits

**AG’s which may indirectly relate to fixed annuities**
- 5 - Approximations for Continuous Functions
- 6 - Use of Single vs. Joint Life Mortality
- 7 - Calculation of Equivalent Level Amounts
- 12 - Interpretation: Valuation and Nonforfeiture Interest Rates
- 22 – Interpretation: Valuation and Nonforfeiture with Indeterminate Premium
- 30 – GICs with Benefit Responsive Payment Provisions
- 40 – Valuation Rate Funding Agreements & GICs with Bail-Out Provisions
- Appendix – Max Reserve Valuation & Nonforfeiture Interest Rates

Appendix III: Example of Allocation Method

**Recommendation:** Allocate excess policy reserves based on the Scenario 12 (moderately adverse) GPVAD within the NAIC ESG.

**Preliminary Fixed Annuity PBR Methodology**

a) Allocate all modeled reserves in excess of the CSV is based on the greatest present value of accumulated deficiencies (GPVAD) under the scenario from the NAIC economic scenario generator that produces the scenario reserve closest to, but not less, than the CTE70 aggregate reserve

- For the purposes of allocation, use CSV as the starting asset level and floor the GPVAD at zero
- Assume immediate exercise of guarantees and prescribed mortality under an applicable SOA table

<table>
<thead>
<tr>
<th>Summary of Results</th>
<th>CSV</th>
<th>GPVAD Single Scenario</th>
<th>GPVAD Single Scenario (Floored)</th>
<th>Aggregate Reserve CTE 70</th>
<th>Excess over Aggregate CSV</th>
<th>Allocated Excess Reserve</th>
<th>Total Contract Level Reserve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract 1: FIA w/o GLWB</td>
<td>$90.0</td>
<td>$90.0</td>
<td>$90.0</td>
<td>$14.0</td>
<td>$15.2</td>
<td>$105.2</td>
<td></td>
</tr>
<tr>
<td>Contract 2: FIA w/GLWB</td>
<td>$90.0</td>
<td>$14.0</td>
<td>$14.0</td>
<td>$84.0</td>
<td>$105.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contract 3: Fixed Life Payout</td>
<td>$260.0</td>
<td>$260.0</td>
<td>$260.0</td>
<td>$260.0</td>
<td>$260.0</td>
<td>$260.0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$380.0</td>
<td>$380.0</td>
<td>$380.0</td>
<td>$380.0</td>
<td>$380.0</td>
<td>$380.0</td>
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</tr>
</tbody>
</table>
Appendix IV: Prospective vs. Retrospective

<table>
<thead>
<tr>
<th>Prospective</th>
<th>Retrospective</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Only Change VM – Valuation Manual covers contracts issued starting in 2017, which would be sufficient to impose prospective changes</td>
<td>• Beyond VM – NAIC Valuation Manual only effective 1/1/2017 onward; point to AG33 or other guideline?</td>
</tr>
<tr>
<td>• Ease – More straightforward and potentially easier to get adopted and implemented</td>
<td>• Hedging Allocation – avoids issues of allocating hedges between inforce and new business</td>
</tr>
<tr>
<td>• Similar to VM-20 – Although VM-21 is retrospective, VM-20 is only prospective</td>
<td>• Address Inforce Reserving Issues – Helps fixed current CARVM issues with overstating GLBs and understating payout annuities</td>
</tr>
<tr>
<td>• Use Same Inforce Standard – Continue to use the same requirements for inforce contracts. This would allow for easier implementation since inforce would use the same requirements, but may arguably include reserves not as “right-sized” for risk as PBR approach</td>
<td>• Consistency – Consistent with VM-21</td>
</tr>
<tr>
<td>• Capital – Sets up foundational framework for future principle-based capital methodology</td>
<td>• Inforce Aggregation – Could potentially aggregate inforce variable and fixed annuity blocks</td>
</tr>
</tbody>
</table>

Outstanding Issue: Should fixed annuity PBR be retrospective or prospective only?

ARWG Open and Interested in Retrospective, but still researching possible methods to enable inforce adoption

Appendix V: Deterministic Certification Option

Possible Recommendation: Allow companies to use fewer prescribed deterministic economic scenarios instead of a CTE70 stochastic calculation if certifying immaterial policyholder optionality (such as certain SPIA and PRT contracts).

Preliminary Fixed Annuity PBR Methodology

a) Deterministic Certification Option – If a company can certify that a group of policies does not contain post-issue contract options for which policyholder behavior is materially influenced by economic conditions, then allow a fewer deterministic scenarios for PBR
   - Only permitted if company performs and fails the stochastic exclusion ratio test, thereby disclosing scenario reserve volatility across the prescribed 16 economic scenarios
   - If the economic scenario materially influences anticipated policyholder behavior, then the group of policies is not permitted to use this certification; examples include surrender benefits, premium payments, and guaranteed living benefits
   - Disclose description of contracts and features in detail, along with certification, in VM-31 PBR Actuarial Report

b) Rationale – The intention is to ease modeling implementation, while still requiring a prudent estimate, principle-based approach on SPIA and PRT business without policyholder optionality (which are expected to fail exclusion test)
   - Prudent estimates would still be captured through use of margins and prescribed deterministic scenarios
   - Still prudent to use deterministic scenarios, but stochastic calculation less critical due to no optionality to measure stochastically
   - Reflects reinvestment risk by unlocking economic/asset assumptions and reflects company-specific mortality risk

c) Hedging – Prohibit this option if company reinvestment strategy contains future hedge purchases

(i) SPIA = Single Premium Immediate Annuity; PRT = Pension Risk Transfer
The VM-22 (A) Subgroup of the Life Actuarial (A) Task Force met Sept. 29, 2020. The following Subgroup members participated: Bruce Sartain, Chair, and Vincent Tsang (IL); Perry Kupferman and Elaine Lam (CA); Jim Jakielo (CT); Mike Yanacheak (IA); Nicole Boyd (KS); William Leung (MO); Rhonda Ahrens (NE); Seong-min Eom (NJ); Russell Toal (NM); Bill Carmello (NY); Rachel Hemphill and Karen Jiang (TX); Tomasz Serbinowski (UT); and Craig Chupp (VA).

1. Discussed the Revisions to VM-22

Aaron Sarfatti (Equitable) discussed a presentation (Attachment Eighteen-A) supporting the development of a standard projection amount (SPA) for fixed annuities. The presentation focused on adapting an SPA similar to the one currently used in VM-21, Requirements for Principle-Based Reserves for Variable Annuities, for use in the VM-22, Statutory Maximum Valuation Interest Rates for Income Annuities, reserving process. Mr. Sarfatti emphasized that the rising asset/liability matching (ALM) complexity in the fixed annuity marketplace is largely driven by guaranteed minimum withdrawal benefits (GMWBs). He said using the VM-21 SPA technology for fixed annuities can mitigate reserve vulnerabilities to ALM mismatches and policyholder behavior risks. He noted that adapting the SPA for fixed annuities would require a modest amount of regulator effort that would include adjusting the SPA for fixed annuity policyholder behavior.

Ben Slutsker (American Academy of Actuaries Annuity Reserves Work Group—ARWG) said the ARWG believes a formula-based floor hinders a principle-based reserving (PBR) approach for fixed annuities. He questioned the appropriateness of using the VM-21 SPA assumptions for VM-22. He said ample consideration should be given to developing assumptions, such as mortality experience and utilization, that are specific to fixed annuities. He said if an SPA is used for VM-22, it should be used only for disclosure. Brian Bayerle (American Council of Life Insurers—ACLI) said VM-22 covers a variety of annuities, so the Subgroup should be cautious to understand the characteristics of each type of annuity when developing its recommendation. Connie Tang (Prudential) said that while the SPA is purportedly designed to catch outliers, it may not be effective in doing so. She said the Subgroup should consider the objectives and the usefulness of the SPA, as well as the difficulty in setting appropriate assumptions.

Mr. Sartain said the consideration before the Subgroup is whether to explore the development of an SPA for VM-22. He said the work to determine the feasibility of an SPA should start with the VM-21 approach but should not otherwise be subject to predetermined limitations. He said the decision of whether to make the SPA a floor or a disclosure item can be made later. Ms. Hemphill said it is important to move ahead so that the SPA is at least available as additional information. She agreed that the determination of whether it should be a floor or disclosure item can be made later. Mr. Carmello noted that the New York Financial Services Department prefers the Commissioners Annuity Reserve Valuation Method (CARVM).

Having no further business, the VM-22 (A) Subgroup adjourned.
Enhancing VM-22 with technology from VM-21

September 29, 2020

Key messages

0. Policyholder behavior and ALM risk historically have been sources of reserve inadequacy

1. The fixed annuity marketplace contains rising ALM complexity, largely driven by GMWBs

2. VM-21 Standard Projection Amount ("SPA") can mitigate reserve vulnerabilities to (a) ALM mismatches and (b) policyholder behavior risk

3. The application of the VM-21 SPA advances the principles-based reserving initiative

4. Calibration of a VM-22 SPA for fixed annuities would require modest regulator effort

5. Company implementation effort is modest; companies subject to enhanced VM-22 can leverage actuarial infrastructure used to support AAT
Policyholder behavior and ALM risk historically have been sources of reserve inadequacy

WSJ graphic depicting sources of LTC reserve inadequacy
December 2016

Then and Now
In launching long-term-care policies as a new product, actuaries had to make many assumptions about future claims.

<table>
<thead>
<tr>
<th>Key pricing assumptions in 1990 as sales were ramping up</th>
<th>. . . in 2000, as sales were peaking</th>
<th>. . . in 2015, after many lessons learned</th>
</tr>
</thead>
<tbody>
<tr>
<td>How many policies will be canceled without claims</td>
<td>5% a year on average</td>
<td>2%-3% a year on average</td>
</tr>
<tr>
<td>Interest to be earned on invested premiums</td>
<td>7% a year</td>
<td>7% a year</td>
</tr>
<tr>
<td>Life expectancy of a 65-year-old male</td>
<td>18.1 years</td>
<td>21.1 years</td>
</tr>
</tbody>
</table>

Source: Society of Actuaries

The fixed annuity marketplace contains rising ALM complexity, largely driven by GMWBs

<table>
<thead>
<tr>
<th>Product purpose</th>
<th>Max duration (typical)</th>
<th>Inv. strategy (typical)</th>
<th>Residual ALM risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accumulation (No GMWB)</td>
<td>3-10 years</td>
<td>Invest to surrender charge end</td>
<td>- Dis-intermediation</td>
</tr>
<tr>
<td>Income (GMWB rider)</td>
<td>Up to 50 years</td>
<td>“Invest to estimated duration”</td>
<td>- Dis-intermediation - Policyholder behavior (affecting duration, cost) - Convexity mismatch</td>
</tr>
</tbody>
</table>
2 VM-21 SPA technology can mitigate reserve vulnerabilities to (a) ALM mismatches and (b) policyholder behavior risk

<table>
<thead>
<tr>
<th>CARVM + AG33</th>
<th>VM-21 SPA</th>
<th>Why this matters</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assets</strong></td>
<td>Book value</td>
<td>Runoff value (as in AAT)</td>
</tr>
<tr>
<td><strong>Interest rates tested</strong></td>
<td>Single (at-issue SVL)</td>
<td>Broad range (per VM-20 ESG1)</td>
</tr>
<tr>
<td><strong>Policyholder behavior (PHB)</strong></td>
<td>Prescribed - Zero surrender - &quot;Worst case&quot; withdrawal</td>
<td>Company (subject to experience-based governance)</td>
</tr>
</tbody>
</table>

Why this matters:
- "Perfect" ALM match infeasible for GMWB (due to policyholder optionality, long duration)
- Interest rate levels sharply influence reserve needs
- "Moderately adverse" PHB vary by int. rate
- Enables PBR for actuarial assumptions

1. Current VM-20 ESG projects a narrow distribution of interest rates above market rates; NAIC initiative to replace underway. This presentation anticipates the NAIC-designated replacement ESG will project a broad distribution of interest rates, including sustained low interest rates.

3 The application of a Standard Projection Amount advances the principles-based reserving initiative

<table>
<thead>
<tr>
<th>Standard</th>
<th>Metric</th>
<th>Type</th>
<th>Data source</th>
<th>Principle</th>
</tr>
</thead>
<tbody>
<tr>
<td>AG 33</td>
<td>Single scenario, PV cash flow</td>
<td>Prescribed</td>
<td>None</td>
<td>None (&quot;worst case&quot;)</td>
</tr>
<tr>
<td>VM-21 (CTE of VM-20 ESG Distribution)</td>
<td>CTE 65 (Standard projection)</td>
<td>Industry</td>
<td>Align with emerging industry experience</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CTE 70 (Company projection)</td>
<td>Company</td>
<td>Judgment of appointed actuary</td>
<td></td>
</tr>
</tbody>
</table>

- Employs binding, prescribed assumptions counter to PBR
- SPA gives 'benefit of the doubt' to companies by using CTE65 vs. CTE70
- Principle embraced is to 'align to broad industry experience'
- Designed to 'catch outliers', not stifle innovation
The Standard Projection advances PBR and leverages extensive prior work on relevant guarantee types

VM-21 SPA assumption calibration was principles-based and comprehensive

Inputs

- Company data contributors: 9
- Products covered: GMWB, GMIB, 403b, Standalone VA
- Industry AuM: >$200bn
- Issue years: Late 1990s – 2015
- Dist’n channels: All material (Wire, Bank, Indep., Direct)
- Regulators: VAWG input set principles

Calibration principles

<table>
<thead>
<tr>
<th>Principle #1: “Catch outliers”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principle #2: Align prudently with emerging industry data</td>
</tr>
</tbody>
</table>

Data
- Relevant and credible
- Emerging (not relevant and credible)
- None

Approach
- Align to experience (no loading)
- Align to closest experience (modest loading)
- “Rule of 70%” (Produce c.70% max funding)

Validation

- ACLI consultant
- Company use (own assumptions)
- Ongoing monitoring commitment

Calibration of a VM-22 Standard Projection for fixed annuities would require modest regulator effort

Anticipated steps to develop a VM-22 Standard Projection

1. Adjust VM-21 Std Proj PHB parameters, if desired
2. Test impact via ‘light’ quantitative impact study
3. Set phase-in / implementation periods

- Start with VM-21 Standard Projection assumptions
- Test reserve impact with select companies
- Establish phase-in to allow for model implementation, capital management
- Adjust select PHB parameters where desired (e.g. shock lapse rate)
- Collect other metrics (e.g. impact on liability duration) if desired
4 VM-21 SPA policyholder behavior results driven by a small set of parameters unlikely to require meaningful modification

<table>
<thead>
<tr>
<th>Description</th>
<th>VM-21 SPA approach</th>
<th>Adjustments to consider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surrender rates</td>
<td>Full surrender rates + “Excess withdrawal” rates</td>
<td>Table of parameters (see appendix)</td>
</tr>
<tr>
<td>Utilization rates</td>
<td>How many clients utilize GMWBs</td>
<td>Two parameters (qualified, non-qual)</td>
</tr>
<tr>
<td>Mortality</td>
<td>Mortality rates (including improvement)</td>
<td>Prescribed table</td>
</tr>
</tbody>
</table>

5 Company implementation effort is modest; companies can leverage actuarial infrastructure used to support AAT

<table>
<thead>
<tr>
<th></th>
<th>AAT</th>
<th>VM-22 SPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assets</td>
<td>Runoff value</td>
<td>Runoff value</td>
</tr>
<tr>
<td>Interest rates tested</td>
<td>Broad range (company discretion)</td>
<td>Broad range (per VM-20 ESG)</td>
</tr>
<tr>
<td>Policyholder behavior (PHB)</td>
<td>Company</td>
<td>Standard projection</td>
</tr>
</tbody>
</table>

- None
- Input alternate economic scenarios
- Code-in SPA behavior assumption
Appendix

Fixed annuity volumes with GMWB elections are material

US historical fixed-indexed annuity sales 1995–2018

<table>
<thead>
<tr>
<th>Year</th>
<th>Pioneering stage</th>
<th>Growth Phase</th>
<th>Maturation Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>Sales without a living benefit</td>
<td>Sales with a Guaranteed Minimum Withdrawal Benefit (&quot;GMWB&quot;)</td>
<td>Sales with a Guaranteed Minimum Withdrawal Benefit (&quot;GMWB&quot;)</td>
</tr>
<tr>
<td>2018</td>
<td>80</td>
<td>60</td>
<td>40</td>
</tr>
</tbody>
</table>

Overview
- Pioneering stage
  - Mainstream carriers introduced FIAs
  - Focused on the bank channel
  - GMWBs were rare or non-existent
  - Annual industry sales reached $7 BN

"Growth Phase"
- Additional carriers, including private equity-backed insurers, introduced FIAs
- Sales increased to IMOs
- GMWBs flourish
- Annual industry sales reach $32 BN

"Maturation Phase"
- Broader set of insurance carriers enter the space
- Products introduced up-market into more mainstream distribution channels
- GMWBs elections remain prevalent
- Annual industry sales reach $61 BN

Source: LIMRA Living Benefit Election Rate Survey, JPMorgan Wink’s Sales & Market Report
1. CARVM applied to GMWB is vulnerable to (a) ALM mismatches and (b) policyholder behavior risk

Total reserve = CARVM + AG 33 (GMWB add-on) + AG 35 (FIA only)

**Observations**
- Changes in interest rates deviates AG33 from economic reserve
- Lower interest rates vs. SVL can create inadequacy
- Not an issue if company is perfectly ALM matched

**AG33 vs. economic reserve add-on by market interest rate**

- **Reserve add-on**
  - Current market
  - At-issue rate

- **Interest rate**
  - Low
  - High

**Reserve policyholder behavior by standard, interest rate**

<table>
<thead>
<tr>
<th>Standard</th>
<th>PHB assumption</th>
<th>Policyholder behavior attribute</th>
<th>‘Moderately adverse’ PHB is...</th>
</tr>
</thead>
<tbody>
<tr>
<td>VM-21 (Standard Projection)</td>
<td>Lapse</td>
<td>“Low”</td>
<td>“High”</td>
</tr>
<tr>
<td></td>
<td>Withdrawal</td>
<td>“Late”</td>
<td>“Early”</td>
</tr>
<tr>
<td>AG 33</td>
<td>Lapse</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Withdrawal</td>
<td>“Worst case” for SVL interest rate</td>
<td></td>
</tr>
</tbody>
</table>

- Adaptive to interest rates
- Rooted in relevant industry experience, where it exists
- Invariant to interest rates
- “Worst case” at the at-issue SVL rate


4 Calibration of a VM-22 SPA for fixed annuities would require modest regulator effort

Surrender rate table structure is straightforward and verifiable

VM-21 surrender rate table – Standard Projection

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Under 50%</th>
<th>50-59%</th>
<th>60-69%</th>
<th>70-79%</th>
<th>80-89%</th>
<th>90-99%</th>
<th>Over 100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premiums</td>
<td>1.0%</td>
<td>1.0%</td>
<td>1.0%</td>
<td>1.0%</td>
<td>1.0%</td>
<td>1.0%</td>
<td>1.0%</td>
</tr>
</tbody>
</table>

Question(s) to consider (Surrender calibration)

- Shock lapse rate for 'no rider' FIAs exceed that of 'no rider' VA GMWBS do early FIA GMWB experience suggest materially different rates of surrender in first 1-2 years post-CDSC than VA GMWB?

Parameter 1 – How many clients utilize GMWB

"Never withdraw" %
- Qualified = 5%
- Non-qual = 20%

Cumulative withdrawal rate

Years after issue

Parameter 2 – When clients utilize GMWB

Section 6.C.S. of VM-21

- Raise each of the GAPV to the second power and multiply all of the resultant GAPV^2 values corresponding to initial withdrawal ages below 60 by 50%.

GAPV measures extent of incentives for clients to utilize guarantees – which vary by rider design and parameters

"Early age" reduction reflects tax disincentive to pre-59.5 withdrawals and was calibrated during VM-21
## Scope of data analyzed to calibrate the VM-21 Standard Projection

### Utilization delay for GMWBs

<table>
<thead>
<tr>
<th>Data attribute</th>
<th>Products with roll-ups</th>
<th>Products without roll-ups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Companies included</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Products included</td>
<td>27</td>
<td>7</td>
</tr>
<tr>
<td>Range of calendar years</td>
<td>2014 - 2016</td>
<td>2006 - 2016</td>
</tr>
</tbody>
</table>

### Utilization efficiency for GMWBs

<table>
<thead>
<tr>
<th>Data attribute</th>
<th>All products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Companies included</td>
<td>6</td>
</tr>
<tr>
<td>Products included</td>
<td>9</td>
</tr>
<tr>
<td>Range of calendar years</td>
<td>2006 - 2016</td>
</tr>
</tbody>
</table>

### Full surrender and excess withdrawals for GMWBs

<table>
<thead>
<tr>
<th>Data attribute</th>
<th>Lifetime GMWBs</th>
<th>Non-lifetime GMWBs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Companies included</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Products included</td>
<td>46</td>
<td>7</td>
</tr>
<tr>
<td>Range of calendar years</td>
<td>2014 - 2016</td>
<td>2006 - 2016</td>
</tr>
</tbody>
</table>

### Withdrawal amount for standalone GMWBs

<table>
<thead>
<tr>
<th>Data attribute</th>
<th>Products with roll-ups</th>
<th>Products without roll-ups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Companies included</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Products included</td>
<td>10</td>
<td>17</td>
</tr>
<tr>
<td>Range of calendar years</td>
<td>2014 - 2016</td>
<td>2006 - 2016</td>
</tr>
</tbody>
</table>

### Full surrender for standalone GMWBs

<table>
<thead>
<tr>
<th>Data attribute</th>
<th>All products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Companies included</td>
<td>3</td>
</tr>
<tr>
<td>Products included</td>
<td>10</td>
</tr>
<tr>
<td>Range of calendar years</td>
<td>2006 - 2016</td>
</tr>
</tbody>
</table>

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Society of Actuaries
Research Update

DALE HALL, FSA, MAAA
Managing Director of Research
December, 2020

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Mortality By Socioeconomic Category In The United States

Purpose and Deliverables

• Study trends in mortality by socioeconomic category from 1999 to 2018
  • Stratifies US population into 10 categories based on education, occupation, employment, income, home pricing and quality

• Outcome of study:
  • Set of life tables by socioeconomic category
  • Report summarizing table development and mortality analysis
  • Interactive Tableau exhibits to aid in understanding life tables
    https://www.soa.org/resources/research-reports/2020/us-mort-rate-socioeconomic/
Growing Inequalities in Mortality

![Graph showing expectation of life at birth by socioeconomic decile for each sex, 1999-2018.](image)

**Note:** The 1<sup>st</sup> decile represents the 10 percent of the population in counties with the lowest SIs and the 10<sup>th</sup> decile, the 10 percent of the population in counties with the highest SIs.

Large Disparities - Children and Adults 40-60

![Graph showing ratio of probabilities of dying (q<sub>k</sub>) in each decile to the U.S. total, each sex, 2018 (%).](image)

**Note:** The 1<sup>st</sup> decile represents the 10 percent of the population in counties with the lowest SIs and the 10<sup>th</sup> decile, the 10 percent of the population in counties with the highest SIs.
Annual Mortality Improvement 1999-2018 - Males

Annual Mortality Improvement 1999-2018 - Females
Future

• 1982-1998 to be included
• Continued analysis of data especially mortality improvement
• More research to understand disparities – cause of death

Additional SOA Life Research
SOA Experience Studies

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Objective</th>
<th>Expected Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017 Variable Annuity Guaranteed Living Benefit Utilization Study</td>
<td>Explore the utilization of guaranteed living benefit options on variable annuity policies under a joint SOA/LIMRA project and release Tables visualizations with the observations from the study.</td>
<td>Complete. On SOA website.</td>
</tr>
<tr>
<td>GRE1for21</td>
<td>Develop the Generally Recognized Expense Table (GRET) for 2021 purposes.</td>
<td>Complete. On SOA website.</td>
</tr>
<tr>
<td>COVID-19 Cash Flow Testing, Nov 2020</td>
<td>A pulse survey aimed at obtaining a quick read on how the COVID-19 pandemic is impacting insurance companies and reinsurers cash flow.</td>
<td>12/15/2020</td>
</tr>
<tr>
<td>Emerging Issues in Underwriting Survey</td>
<td>A survey to give insight into emerging issues in underwriting and their impact on processes and practices.</td>
<td>12/30/2021</td>
</tr>
<tr>
<td>2020-2021 First Level Term Mortality and Lapse Report</td>
<td>Complete a study of mortality and lapse on term policies in the post-level premium period.</td>
<td>12/31/2021</td>
</tr>
<tr>
<td>2019-2022 Deferred Annuity Mortality Study</td>
<td>Explore the mortality experience from 2011-2015 in deferred annuity contracts and release a report with the findings and a database with the experience data.</td>
<td>12/30/2021</td>
</tr>
<tr>
<td>2016-18 reinsannity Annuity Study</td>
<td>Provide the experience from 2011-2015 in deferred annuity contracts and release a report with the findings and a database with the experience data.</td>
<td>12/30/2021</td>
</tr>
<tr>
<td>2018 Variable Annuity Guaranteed Living Benefit Utilization Study</td>
<td>Explore the utilization of guaranteed living benefit options on variable annuity policies under a joint SOA/LIMRA project and release Table visualizations with the observations from the study.</td>
<td>12/30/2021</td>
</tr>
<tr>
<td>2009-2022 Individual Life Experience Committee Lapse and Mortality Study</td>
<td>Study mortality and lapse experience in the database of 2009-2022 individual life experience data and release a report with the findings.</td>
<td>12/30/2021</td>
</tr>
<tr>
<td>2020-21 Individual Life Mortality Study</td>
<td>Complete the next in a series of experience analysis of individual ordinary life insurance mortality.</td>
<td>12/30/2021</td>
</tr>
<tr>
<td>Mortality Improvement Survey</td>
<td>Complete a survey to learn how companies are reacting to the slowdown in the level of mortality improvement within the general population.</td>
<td>12/30/2021</td>
</tr>
<tr>
<td>US Population Mortality Observations: Updated with 2021 Experience</td>
<td>Explore observations from the release of the 2019 US population mortality data.</td>
<td>12/30/2021</td>
</tr>
</tbody>
</table>

SOA Practice Research & Data Driven In-house Research

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Objective</th>
<th>Expected Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>COVID-2019 Mortality Modeling Survey Summary of Results, Updated July 6, 2020</td>
<td>A pulse survey aimed at obtaining a quick read on how the COVID-19 pandemic is impacting insurance companies and reinsurers mortality modeling.</td>
<td>Complete. On SOA website.</td>
</tr>
<tr>
<td>Epiometrics and Underwriting</td>
<td>Draft a white paper discussing Epiometrics and how it will impact underwriting in the future.</td>
<td>Complete. On SOA website.</td>
</tr>
<tr>
<td>Simplified Methodologies</td>
<td>Investigates simplifications, approximations, and modeling efficiency techniques allowed under VM-20 for determining reserves.</td>
<td>Complete. On SOA website.</td>
</tr>
<tr>
<td>Complex Model Evaluation</td>
<td>Review existing literatures on GLMs, discuss actuarial standards for using complex models outside of actuary’s initial expertise, develop case studies for demonstrating methods of evaluating the validation of complex models.</td>
<td>12/31/2020</td>
</tr>
<tr>
<td>Human Mortality Database -2021 Projects</td>
<td>Enhances the Human Mortality Database by focusing on state level mortality tables and expanding causes of death mortality tables for more countries.</td>
<td>12/31/2020</td>
</tr>
<tr>
<td>Modelling and Forecasting Cause-of-Death Mortality by Socio-Economic Factors</td>
<td>Develop mortality projection models to analyze and forecast mortality by cause of death and socio-economic factors.</td>
<td>12/31/2020</td>
</tr>
<tr>
<td>Obesity Trends and Mortality and longevity impacts</td>
<td>Develop an estimate of the impact of obesity in mortality and morbidity costs in the US and Canada.</td>
<td>12/31/2020</td>
</tr>
<tr>
<td>InsurTech White Paper</td>
<td>Write a white paper covering the InsurTech landscape in the US and discuss how actuaries will be impacted.</td>
<td>12/28/2021</td>
</tr>
<tr>
<td>Mortality Improvement Trends Analysis</td>
<td>Identify how mortality improvement varies by driver</td>
<td>12/30/2021</td>
</tr>
</tbody>
</table>
LIFE PRACTICE COUNCIL UPDATE

LAURA HANSON, VICE PRESIDENT

December 3, 2020, Virtual LATF Meeting

Agenda

☐ Recent Activities
☐ 2021 Priorities
Recent Activities

- Proposed preliminary VM-22 Framework
- Published a white paper on the Tax Cuts and Jobs Act (TCJA)
- Submitted a comment letter to Department of Labor (DOL) on the interim final rule to implement the Setting Every Community Up for Retirement Enhancement (SECURE) Act
- Published six Principle-Based Reserving (PBR) analysis templates
  - See Academy PBR webpage for more PBR-related material: https://www.actuary.org/content/pbr-practice
- Conducted Asset Adequacy Testing (AAT) survey and analysis

Recent Activities

- Virtual PBR Boot Camp (Sept 14-17)
  - Covered VM-20 and VM-21 topics
  - 150 attendees
  - Special thank you to the following faculty members: Rhonda Ahrens, Pat Allison, Mike Boerner, Rachel Hemphill, Bruce Sartain, and Vincent Tsang
Recent Activities

- Virtual Annual Meeting and Public Policy Forum (Nov 5-6)
  - General sessions
    - NAIC President-Elect David Altmaier
    - Anand Parekh, M.D., the Bipartisan Policy Center’s chief medical advisor
    - Michael Beschloss, Presidential Historian and Bestselling Author
    - Charlie Cook, Editor and Publisher of The Cook Political Report
    - Sheila Bair, Former Chairman, Federal Deposit Insurance Corporation
  - LPC Breakout Sessions
    - Perspectives on the SECURE Act
    - Regulation Best Interest/Annuity Suitability
    - Impact of COVID-19 on the Life Industry

2021 Priorities

- Webinar: Year-in-review (January 2021)
- 2021 Life & Health Valuation Law Manual
- Webinars on Long Duration Targeted Improvements and Disclosures for GAAP (2021)
- PBR Boot Camps (planned)
  - June 2021: Virtual Seminar for PBR “First Timers”
  - Q3 2021: Findings from 2020 Report Reviews
2021 Priorities (cont.)

- Support Economic Scenario Generator transition
- Coordinate VM-22 and C-3 field study for non-variable annuities
- Recommend C-2 mortality factors
- Implement C-1 bond factors, C-1 real estate factors, and C-2 longevity factors
- Publish VM-21 Practice Note Addendum

2021 Priorities (cont.)

- Provide commentary on mortality improvement discussions
- Support YRT reinsurance approach for VM-20
- Propose VM-51 data elements
- Publish Life Illustrations Practice Note Addendum
- Publish FAQs on changes to tax reserve calculations and reporting under TCJA
2021 Priorities (cont.)

- Promote diversity and inclusion in the actuarial profession and the broader insurance industry.
- Data Analytics Issue Paper

Thank You

Questions?
November 13, 2020

Mr. Mike Boerner  
Chair, NAIC Life Actuarial Task Force (LATF)  

Re: APF 2020-08  

Dear Mr. Boerner:  

The American Council of Life Insurers (ACLI) appreciates the opportunity to submit the following comments on APF 2020-08. 

ACLI appreciates the intent of this APF to provide an additional method for mortality aggregation. While the intent of this was to capture the universe of acceptable possibilities, it raises the question if other acceptable methods would be allowable. The issue seems to reinforce that, where possible, the Valuation Manual should move away from prescription and towards well-defined principles with appropriate guardrails. Our preference would be language that provides flexibility to companies in their aggregation, subject to appropriate limitations. Additionally, the examples in the APF are probably not necessary in the text of the Valuation Manual since they are clearly explained within the examples spreadsheet provided. 

We appreciate the consideration of our comments, and look forward to discussing on a future LATF call. Thank you. 

Sincerely,  

[Signature]  

cc: Reggie Mazyck, NAIC
Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form

1. Identify yourself, your affiliation and a very brief description (title) of the issue.

Tim Cardinal, FSA, MAAA, CERA. Cardinalis 1 Consulting.
Clarify and introduce a third permissible technique for the calculation of company experience rates.

2. Identify the document, including the date if the document is “released for comment,” and the location in the document where the amendment is proposed:


3. Show what changes are needed by providing a red-line version of the original verbiage with deletions and identify the verbiage to be deleted, inserted or changed by providing a red-line (turn on “track changes” in Word®) version of the verbiage. (You may do this through an attachment.)

See attached Appendix.

4. State the reason for the proposed amendment? (You may do this through an attachment.)

See attached Appendix and Excel file.
Appendix

SECTION:

REDLINE:
9.C.2.d.vi. If the company uses the aggregate company experience for a group of mortality segments when determining the company experience mortality rates for each of the individual mortality segments in the group, the company shall either use one of the following methods:

a. Use techniques to further subdivide the aggregate experience into the various mortality segments (e.g., start with aggregate non-smoker and then use the conservation of total deaths principle, normalization or other approach to divide the aggregate mortality into super preferred, preferred and residual standard non-smoker class assumptions).

b. Use techniques to adjust the experience of each mortality segment in the group to reflect the aggregate company experience for the group (e.g., by credibility weighting the individual mortality segment experience with the aggregate company experience for the group).

c. Use a two-step sequential method, which
   1) forms subgroups which are groups of mortality segments and are subsets of the aggregate class of mortality segments being aggregated,
   2) uses techniques as in (b) to adjust the experience of each subgroup from (1) to reflect the aggregate company experience for the group and conserve deaths, and
   3) finally, uses techniques as in (a) to further subdivide the subgroups’ adjusted experience from (2) into the various mortality segments while conserving each subgroup’s deaths determined in step (2)’s conservation of deaths.
For example, if mortality segments vary by sex, risk class, and face bands, then
   1) segments that differ by face band are aggregated to form subgroups that vary just by sex and risk class,
   2) the subgroups’ mortality experience is credibility weighted with the aggregate company experience for the group and normalized, and
   3) the subgroups’ adjusted mortality experience are then subdivided into the various mortality segments based on credible, external face band relativities and conservation of deaths is applied to each subgroup’s normalized deaths determined in (2).

REASONING:
A minor point is clarity. “Either” can mean one or both. The intent is one of a) or b) but not both. The major issue is both a) and b) have weaknesses in contexts with high levels of granularity resulting in a large number of mortality segments such as 120 or 360 segments. For example consider a block with 360 mortality segments determined by 2 sexes × 6 risk classes × 5 face bands × 3 product types × 2 underwriting types (such as full and accelerated). A company may have very high credibility for each of 12 segments as determined by 2 sexes × 6 risk classes but have very low credibility for each of the 360 segments. Both a) and b) could produce company experience rates that negate the very reasons a company uses a high level of granularity. Using b) for example, all segment rates would be equal to the aggregate A/E rates, which is equivalent to no granularity. By applying b) to subgroups and applying a) to divide the subgroups, the proposed technique c) is more robust drawing upon a) and b)’s strengths.
while mitigating their weakness. If there is one subgroup which is the aggregate then a) is a special case of c). If each subgroup is a segment then b) is a special case of c). See the attached excel file that adds two examples to the NAIC examples for a) and b). Example 8 is an example of a correct way to apply c) and Example 9 is an incorrect way.
Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

1. Identify yourself, your affiliation and a very brief description (title) of the issue.

American Academy of Actuaries, Life Reserves Work Group

Addition of language to clarify the definition of individually underwritten life insurance and the applicability of Principle-Based Reserve (PBR) requirements for group insurance contracts with individual risk selection issued under insurance certificates.

2. Identify the document, including the date if the document is “released for comment,” and the location in the document where the amendment is proposed:

January 1, 2020 version of the Valuation Manual used.

3. Show what changes are needed by providing a red-line version of the original verbiage with deletions and identify the verbiage to be deleted, inserted or changed by providing a red-line (turn on “track changes” in Word®) version of the verbiage. (You may do this through an attachment.)

See Appendix

4. State the reason for the proposed amendment? (You may do this through an attachment.)

Individual insurance certificates issued under a group contract which utilize an individual risk selection process, pricing, premium rate structures and product features are similar to individual life insurance policies. They are currently excluded from VM-20 because they are filed under a group contract, but they should be subject to VM-20 due to this similarity. See Appendix.

* This form is not intended for minor corrections, such as formatting, grammar, cross-references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

<table>
<thead>
<tr>
<th>Dates:</th>
<th>Received</th>
<th>Reviewed by Staff</th>
<th>Distributed</th>
<th>Considered</th>
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<tbody>
<tr>
<td>3/19/19</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: APF 2019-33
Appendix

Issue

Certain contracts issued under a master group contract require individual risk selection in order to qualify for issuance of the group insurance certificate and do not require continued membership in the group in order to maintain coverage. The certificates have similar acquisition approaches, provisions, certificate-holder rights, pricing and risk classification, and are managed in a similar manner as individual ordinary life insurance contracts. These individual certificates should follow the same reserve requirements as other individual life contracts of the same product type. Therefore, a change is needed within the Valuation Manual to bring these individual certificates into scope of VM-20.

Six changes are recommended:

1) Within the Reserve Requirements section (Section II), change the minimum reserve requirements to also apply to group life contracts which, other than the difference between issuing a policy and issuing a group certificate, have the same or mostly similar contract provisions, risk selection process and underwriting as individual ordinary life contracts;

2) Within the Reserve Requirements section (Section II), add a transition period for individual group certificates issued on or before 1/1/2024;

3) Within the Reserve Requirements section (Section II), add language to Subsection 1.D and the corresponding footnote to include premiums from group life contracts which have individual certificates that were issued using individual risk selection processes;

4) Add new paragraph, VM-20 Section 1.B (and reformat to make current paragraph Section 1.A) to clarify group life certificates issued using individual risk selection processes, including a definition and requirements to be met, are subject to the requirements of VM-20;

5) Add guidance note after first sentence in VM-20 Section 2.A.1 that group life certificates that meet the definition for individual risk selection process use the same VM-20 Reserving Categories as defined in Section 2;

6) Draft referral to the NAIC Blanks (E) Working Group, to revise the VM-20 Reserves Supplement, Part 2 to report premiums for total Group Life and Group Life with certificates subjected to an individual risk selection process and which meet all of the conditions as defined in VM-20 Section 1.B separately.
VM Changes 1, 2 and 3 – II. Reserve Requirements

II. Reserve Requirements

This section provides the minimum reserve requirements by type of product, as set forth in the seven subsections below, as follows:

1. Life Insurance Products
2. Annuity Products
3. Deposit-Type Contracts
4. Health Insurance Products
5. Credit Life and Disability Products
6. Riders and Supplemental Benefits
7. Claim Reserves

All reserve requirements provided by this section relate to business issued on or after the operative date of the Valuation Manual. All reserves must be developed in a manner consistent with the requirements and concepts stated in the Overview of Reserve Concepts in Section I of the Valuation Manual.

Guidance Note: The terms “policies” and “contracts” are used interchangeably.

Subsection 1: Life Insurance Products

A. This subsection establishes reserve requirements for all contracts issued on and after the operative date of the Valuation Manual that are classified as life contracts as defined in SSAP No. 50 in the AP&P Manual, with the exception of annuity contracts and credit life contracts. Minimum reserve requirements for annuity contracts and credit life contracts are provided below in subsection 2 and subsection 5, respectively.

B. Minimum reserve requirements for variable and nonvariable individual life contracts—excluding guaranteed issue life contracts, preneed life contracts, industrial life contracts, and policies of companies exempt pursuant to the life PBR exemption in paragraph D below—are provided by VM-20, Requirements for Principle-Based Reserves for Life Products, except for election of the transition period in subsection 1.F below. For this purpose, joint life policies are considered individual life.

C. Minimum reserve requirements for group life contracts with individual certificates which meet all the requirements in VM-20 Section 1.B are provided by VM-20, except for election of the transition period in subsection 1.F below.

D. Minimum reserve requirements of VM-20 are considered principle-based valuation requirements for purposes of the Valuation Manual.

E. Minimum reserve requirements for life contracts not subject to VM-20 are those pursuant to applicable requirements in VM-A and VM-C. For guaranteed issue life contracts issued after Dec. 31, 2018, mortality tables are defined in VM Appendix M – Mortality Tables (VM-M), and the same table shall be used for reserve requirements as is used for minimum nonforfeiture requirements as defined in VM-02, Minimum Nonforfeiture Mortality and Interest.

F. A company may elect to establish minimum reserves pursuant to applicable requirements in VM-A and VM-C for:
1. Business described in subsection 1.C above and issued on or after the operative date of the Valuation Manual and prior to 1/1/2024.

2. Business not described subsection 1.C otherwise subject to VM-20 requirements and issued during the first three years following the operative date of the Valuation Manual.

A company electing to establish reserves using the requirements of VM-A and VM-C may elect to use the 2017 Commissioners’ Standard Ordinary (CSO) Tables as the mortality standard following the conditions outlined in VM-20 Section 3. If a company during the three years elects to apply VM-20 to a block of such business, then a company must continue to apply the requirements of VM-20 for future issues of this business.

G. Life PBR Exemption

1. A company meeting the condition in subsection G.2 below may file a statement of exemption for ordinary life insurance policies including group life insurance certificates subject to an individual risk selection process and meeting all the conditions in VM-20 Section 1.B, except for policies in subsection G.3 below, issued directly or assumed during the current calendar year, that would otherwise be subject to VM-20. Such a statement must be filed with the domiciliary commissioner prior to July 1 of that year certifying that condition subsection G.2 was met based on premiums from the prior calendar year annual statement. The statement of exemption must also be included with the NAIC filing for the second quarter of that year.

The domiciliary commissioner may reject such statement prior to Sept. 1 and require the company to follow the requirements of VM-20 for the ordinary life policies covered by the statement.

2. Condition for Exemption:

a. The company has less than $300 million of ordinary life premiums1, and if the company is a member of an NAIC group of life insurers, the group has combined ordinary life premiums1 of less than $600 million.

3. Policies Excluded from the Life PBR Exemption:

a. Universal life with secondary guarantee (ULSG) policies with a secondary guarantee that does not meet the VM-01, Definitions for Terms in Requirements, definition of a “non-material secondary guarantee.”

4. Each exemption, or lack of an exemption, applies only to policies issued or assumed in the current year, and it applies to all future valuation dates for those policies. The minimum reserve requirements for the ordinary life policies subject to the exemption are those pursuant to applicable methods required in VM-A and VM-C using the mortality as defined in VM-20 Section 3.C.1 and VM-M Section 1.H.

Footnote change

1Premiums are measured as direct plus reinsurance assumed from an unaffiliated company from the ordinary life line of business reported in the prior calendar year life/health annual financial statement, Exhibit 1, Part 1, Column 3, “Ordinary Life Insurance”. Premiums should also include the premiums from group life insurance certificates that were subject to an individual risk selection process and meet all the conditions as defined in VM-20 Section 1.B (For a statement of exemptions filed for calendar year 2022 and beyond, the premiums for these group life certificates were reported in the prior calendar year life/health annual financial statement, VM-20 Reserves Supplement, Part 2, if applicable). -Premiums should excluding premiums for guaranteed issue policies and preneed life contracts and exclude amounts that represent the transfer of reserves in force as of the effective date of a reinsurance assumed transaction and are reported in Exhibit 1 Part 1, Column 3 as ordinary life insurance premium. Preneed and guaranteed issue life insurance policies are as defined in VM-01.
VM Change 4 – VM-20: Requirements for Principle-Based Reserves for Life Products

Section 1: Purpose

A. These requirements establish the minimum reserve valuation standard for individual life insurance policies issued on or after the operative date of the Valuation Manual and subject to a principle-based valuation with an NPR floor under Model #820. These requirements constitute the Commissioners Reserve Valuation Method (CRVM) for policies of individual life insurance.

B. If all of the following requirements are met, individual life certificates under a group contract are included in the requirements of VM-20.

(i) An individual risk selection process, defined below, is used to obtain group life insurance coverage;

(ii) The individual certificates utilize premiums or cost of insurance schedules and charges based on the individual applicant’s issue age, duration from underwriting, coverage amount and risk classification and there is a stated or implied schedule of maximum gross premiums or net cash surrender value required in order to continue coverage in force for a period in excess of one year;

(iii) The group master contract is designed, priced, solicited, and managed similar to individual ordinary life insurance policies rather than specific to the group as a whole;

(iv) The individual certificates have similar acquisition approaches, provisions, certificate-holder rights, pricing, and risk classification as individual ordinary life insurance contracts.

The group master contract and individual certificates are issued on or after the operative date of the Valuation Manual and subject to a principle-based valuation with an NPR floor under Model #820.

An individual risk selection process is based on characteristics of the insured(s) beyond sex, gender, age, tobacco usage, and membership in a particular group. This may include, but is not limited to, completion of an application (beyond acknowledgement of membership to the group, sex, gender and age), questionnaire(s), on-line health history or tele-interview to obtain non-medical and medical or health history information, prescription history information, avocations, usage of tobacco, family history, or submission of fluids such as blood, Home Office Specimens (HOS), or oral fluid. The resulting risk classification is determined based on the characteristics of the individual insured(s) rather than the group, if any, of which it is a member (e.g., employer, affinity, etc.). The individual certificate holder is charged a premium rate based solely on the individual risk selection process and not on membership in a specific group.
**Guidance Note:** The use of evidence of insurability does not by itself constitute an individual risk selection process. Use of information obtained from a census or question(s) regarding gender, occupation, age, income and/or tobacco usage solely for purposes of determining a rate classification does not by itself qualify a group as having used an individual risk selection process. Group insurance where the underwriting based on the characteristics of the group and census data but where some individuals are subjected to individual risk selection as a result of compensation level, age, an existing medical condition or impairment, late entry into the group, failure of the group to meet minimum participation requirements or voluntary buy-up of increased coverage does not meet the definition of an individual risk selection process.
Section 2: Minimum Reserve

A. All policies subject to these requirements shall be included in one of the VM-20 Reserving Categories, as specified in Section 2.A.1, Section 2.A.2 and Section 2.A.3 below.

Guidance Note: Since Group Insurance subject to an individual risk selection process and meeting all the requirements, as defined by Section 1.B is subject to VM-20 requirements, Section 2.A shall apply - meaning that any such contracts will be included in one of the VM-20 Reserving Categories defined by Section 2.A.1, Section 2.A.2, and 2.A.3. All requirements in VM-31 which apply to a VM-20 Reserving Category shall apply to any group insurance subject to Individual Underwriting Selection that has been included in that VM-20 Reserving Category.

The company may elect to exclude one or more groups of policies from the stochastic reserve calculation and/or the deterministic reserve calculation. When excluding a group of policies from a reserve calculation, the company must document that the applicable exclusion test defined in Section 6 is passed for that group of policies. The minimum reserve for each VM-20 Reserving Category is defined by Section 2.A.1, Section 2.A.2 and Section 2.A.3, and the total minimum reserve equals the sum of the Section 2.A.1, Section 2.A.2 and Section 2.A.3 results below, defined as:
VM Change 6 – VM-20 Reserves Supplement, Part 2: Life PBR Exemption

Refer to NAIC Blanks (E) Working Group, request for modification to the supplemental report for the Life PBR Exemption, to show the premiums for the group life that utilized an individual risk selection process and meets all of the requirements in VM-20 Section 1.B. as these premiums are currently grouped together with other Group Insurance in Exhibit 1. As there are other instances where the ordinary life premiums are not included in the determination of the Life PBR Exemption (e.g., for guaranteed issue policies), it may be useful to request addition of the breakdown of premiums used to determine the exemption.

Possible insertion between questions 1 and 2 for disclosure of premiums used in the determination of eligibility for the Life PBR exemption, split by ordinary life and group subject to an individual risk selection process and meeting all of the requirements in VM-20 Section 1.B.

<table>
<thead>
<tr>
<th>Life PBR Exemption as defined in the NAIC adopted Valuation Manual (VM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Has the company filed and been granted a Life PBR Exemption from the source requirements of VM-20 of the Valuation Manual by their state of domicile?</td>
</tr>
<tr>
<td>2. If the response to Question 1 is “Yes”, then check the source of the granted “Life PBR Exemption” definition. Check either 2.1, 2.2 or 2.3.</td>
</tr>
<tr>
<td>21 NAIC Adopted VM [ ]</td>
</tr>
<tr>
<td>22 State Statutes (VSL) [ ] Complete one of “a” and “b” as appropriate.</td>
</tr>
<tr>
<td>a. Are the criteria in the State Statutes (VSL) different from the NAIC adopted VM?</td>
</tr>
<tr>
<td>b. If the answer to “a” above is “Yes”, provide the criteria the state has used to grant the Life PBR Exemption (e.g., Group Legal Entity controls and the minimum reserve requirements that are required by the state of domicile) if the minimum reserve requirements are the same as the Adopted VM, write SAME AS NAIC VM.</td>
</tr>
<tr>
<td>23 State Legislation [ ] Complete one of “a” and “b” as appropriate.</td>
</tr>
<tr>
<td>a. Are the criteria in the State Legislation different from the NAIC adopted VM?</td>
</tr>
<tr>
<td>b. If the answer to “a” above is “Yes”, provide the criteria the state has used to grant the Life PBR Exemption (e.g., Group Legal Entity controls and the minimum reserve requirements that are required by the state of domicile) if the minimum reserve requirements are the same as the Adopted VM, write SAME AS NAIC VM.</td>
</tr>
</tbody>
</table>
Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form

1. Identify yourself, your affiliation and a very brief description (title) of the issue.

Rachel Hemphill, TDI – Allows exemption of policies from prior issue years when there is a change in the Life PBR Exemption requirements.

2. Identify the document, including the date if the document is “released for comment,” and the location in the document where the amendment is proposed:

Valuation Manual (January 1, 2021 edition), Section II, Subsection 1.D.4

3. Show what changes are needed by providing a red-line version of the original verbiage with deletions and identify the verbiage to be deleted, inserted or changed by providing a red-line (turn on “track changes” in Word®) version of the verbiage. (You may do this through an attachment.)

Each exemption, or lack of an exemption, outlined in D.1 – D.3 above applies only to policies issued or assumed in the current year, and it applies to all future valuation dates for those policies. However, if policies did not qualify for the Life PBR Exemption during the year of issue but would have qualified for the Life PBR Exemption if the current Valuation Manual requirements had been in effect during the year of issue, then the domiciliary commissioner may allow an exemption for such policies. The minimum reserve requirements for the ordinary life policies subject to the exemption are those pursuant to applicable methods required in VM-A and VM-C using the mortality as defined in VM-20 Section 3.C.1 and VM-M Section 1.H.

4. State the reason for the proposed amendment? (You may do this through an attachment.)

Addresses the exemption of policies issued in 2020 and 2021 (such as conversions) that may be exempted under the 2022 Valuation Manual requirements but did not qualify under the 2020 or 2021 Valuation Manual requirements.
<table>
<thead>
<tr>
<th>Number</th>
<th>Milestone Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NAIC Executive Committee approves ESG funding</td>
</tr>
<tr>
<td>2</td>
<td>Contract executed between NAIC and Conning</td>
</tr>
<tr>
<td>3</td>
<td>10/27 LATF/Life RBC WG meeting on background &amp; deliverables</td>
</tr>
<tr>
<td>4</td>
<td>Website development: Conning creates page to house prescribed scenarios, documentation, training materials, and tools, with access provided via link on NAIC website. Websites go live by Dec-21.</td>
</tr>
<tr>
<td>5</td>
<td>Documentation: Conning edits current documentation to include only information relevant to the Basic Data Set. Access to be provided by 12/31/20.</td>
</tr>
<tr>
<td>6</td>
<td>Education sessions: Conning presents ESG overview, calibration, parameters, and tools at LATF/Life RBC WG meetings</td>
</tr>
<tr>
<td>7</td>
<td>ESG modifications: Potential changes to calibration, parameters, and tools are discussed and exposed for comment at LATF/Life RBC WG meetings.</td>
</tr>
<tr>
<td>8</td>
<td>Parameter updates: Proposed frequency of updates is discussed and exposed for comment at LATF/Life RBC WG meeting.</td>
</tr>
<tr>
<td>9</td>
<td>Conning’s scenario reduction tool (to allow companies to choose a specific number of representative scenarios from a universe of 10,000 scenarios) is discussed and exposed for comment at LATF/Life RBC WG meeting.</td>
</tr>
<tr>
<td>10</td>
<td>Conning’s tool to generate VM-20 Company Specific Market Path scenarios is discussed and exposed for comment at LATF/Life RBC WG meeting.</td>
</tr>
<tr>
<td>11</td>
<td>Conning’s tool to generate VM-21 Company Specific Market Path scenarios is discussed and exposed for comment at LATF/Life RBC WG meeting.</td>
</tr>
<tr>
<td>12</td>
<td>Conning’s tool to generate statistics, to be determined, on the scenario output, and validation reports (summarizing key characteristics of the Basic Data Set) are exposed for comment at LATF/Life RBC WG meeting.</td>
</tr>
<tr>
<td>13</td>
<td>LATF/Life RBC WG meeting</td>
</tr>
<tr>
<td>14</td>
<td>Preparation for reserve and capital field tests</td>
</tr>
<tr>
<td>15</td>
<td>Conduct VM-20 and VM-21 industry field tests to determine life and VA reserve impacts and compile results.</td>
</tr>
<tr>
<td>16</td>
<td>Conning makes ESG and tool modifications for field testing</td>
</tr>
<tr>
<td>17</td>
<td>LATF/Life RBCWG meetings to discuss comment letters received on exposures, and approve desired ESG and tool modifications for field testing.</td>
</tr>
<tr>
<td>Number</td>
<td>Milestone</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>18</td>
<td>Conduct C3 Phase 1 and C3 Phase 2 industry field tests and compile results</td>
</tr>
<tr>
<td>19</td>
<td>LATF/LRBC WG meetings to discuss 1) aggregate field test results, 2) whether any calibration or parameter changes are needed based on the results (this timeline assumes none), and 3) potential VM and RBC instruction impacts, e.g. phase-in language</td>
</tr>
<tr>
<td>20</td>
<td>LATF exposes and adopts any necessary VM-20, VM-21, and VM-31 amendments</td>
</tr>
<tr>
<td>21</td>
<td>NAIC A Committee adopts Valuation Manual amendments</td>
</tr>
<tr>
<td>22</td>
<td>Conduct field test for fixed deferred and immediate annuities (assumed not to be required to implement new ESG for the 2022 VM since VM-22 framework is targeted for 2023)</td>
</tr>
<tr>
<td>23</td>
<td>Conning updates documentation to reflect modifications adopted by regulators, and finalizes training materials</td>
</tr>
<tr>
<td>24</td>
<td>Life RBC WG begins discussion on C3 Phase 1 and C3 Phase 2 instruction changes by 1/31/22 and exposes them for comment by 4/30/22</td>
</tr>
<tr>
<td>25</td>
<td>Life RBC WG adopts C3 Phase 1 and C3 Phase 2 instruction changes by 6/30/22</td>
</tr>
<tr>
<td>26</td>
<td>NAIC E Committee adopts RBC changes by 8/31/22</td>
</tr>
<tr>
<td>27</td>
<td>NAIC Exec/Plenary adopts Valuation Manual amendments</td>
</tr>
<tr>
<td>28</td>
<td>NAIC Exec/Plenary adopts RBC instruction changes by Dec. 2022</td>
</tr>
<tr>
<td>29</td>
<td>Conning sets up process to run the Basic Data Set as of each month end and produce scenarios and related tools</td>
</tr>
<tr>
<td>30</td>
<td>NAIC and Conning prepare websites for links to final documentation, training materials, scenarios and tools</td>
</tr>
<tr>
<td>31</td>
<td>New ESG prescribed for VM-21 and VM-22 effective 1/1/22, and for C3 Phase 1 and C3 Phase 2 effective 12/31/22.</td>
</tr>
</tbody>
</table>

Note: The intent would be to compare Conning's ESG against the AAA ESG throughout milestones 6-13.
Overview of GEMS® Treasury Model
Dec. 3, 2020
Dan Finn, FCAS, ASA – Managing Director at Conning
Pat Allison, FSA, MAAA – NAIC Managing Life Actuary

Agenda
1. Presentation Approach
2. Reference Materials and Documentation
3. GEMS® Treasury Model: Potential Goals
4. Next Steps
Presentation Approach

1. Potential goals relating to the GEMS® Treasury Model are outlined.
2. For each goal:
   a. Background information is provided for educational purposes, along with an underlying rationale
   b. Similarities and differences between the Academy ESG and GEMS® will be discussed
   c. Items requiring decisions are highlighted

Reference Materials and Documentation

The following materials are available on the LATF webpage (Related Documents tab):
https://content.naic.org/cmte_a_latf.htm

2. Comparison of the AIRG and GEMS: GEMS vs AAA - Fan Chart.pdf

ESG Background Information:

Economic Scenario Generators: A Practical Guide
https://www.soa.org/resources/research-reports/2016/2016-economic-scenario-generators/
Goals relating to the yield curve shape:

1. **The model's starting yield curve should match the actual starting yield curve as closely as possible.**

   **Rationale for this goal:** The model should reflect accurate initial conditions.

   **Background:** In the AIRG and GEMS® models, the projected interest rates don’t start with the actual initial yield curve. A fitting process is used to create a representative initial yield curve.

   **AIRG compared to GEMS®:**
   - AIRG model fits 1- and 20-year maturities; GEMS® fits 3-month maturity and 2 other selected maturities
   - GEMS® fitting procedure adjusts the 2 other points to minimize gap between actual and fitted
   - The 2 other points are chosen each period to optimize the fit of the curve
   - These changes do NOT impact underlying (i.e., fitted) model
Comparison of Fitting Results: AIRG Model fits 1- and 20-year maturities

Comparison of Fitting Results: GEMS® fits 3-month and 2 other selected maturities
AIRG compared to GEMS® (cont.):

- Both models have adjustments to fit the actual initial yield curve
  - AIRG model's discrepancies go away linearly over 12 months
  - GEMS® has a decay parameter which controls the speed at which the discrepancies go away
    - Default value of 3 leads to 95% reduction during first 12 months
    - Range of from 0 (no decay) to 1000 (use fitted curve)
    - Remaining adjustments roll down the curve with passage of time. For example, the initial 10-year adjustment will impact the 8-year yield after 2 simulation years

Decision to be made: How fast do regulators want the discrepancies to go away?
Recommendation is to use the default value of 3.
Goals relating to the yield curve shape:

2. The model should produce a variety of yield curve shapes, and they should change over time.

Rationale for this goal: In the real world, a wide variety of yield curve shapes occur and evolve over time.

Background:
• Inversions of the yield curve occur when shorter-maturity yields are higher than longer-maturity yields
• Inverted yield curves occur approximately 10% of the time in the U.S. and in the standard calibration of the GEMS® treasury model. However, altering the GEMS® calibration could change the prevalence of yield curve inversions.

AIRG compared to GEMS® - Yield Curve Shapes: Both models produce normal and inverted yield curve shapes. However, the GEMS model is able to produce a wider variety of real world yield curve shapes, such as the humped curve shown in the 8/29/19 graph.

AIRG compared to GEMS® (cont.) – Yield Curve Movements:
• For the AIRG, yield curve movements are driven by the simulated values of the long maturity Treasury and the term premium (additional yield for long maturity Treasury assets vs. shorter maturities). These drivers can produce the following yield curve movements:
  • parallel shifts, which happen when the long maturity Treasury changes, but the term premium does not, and
  • changes to the slope of the yield curve, which happens any time the term premium changes.
• The GEMS® model goes about this differently. In addition to parallel shifts and slope changes, GEMS® is also able to produce changes in curvature.
  • Therefore, GEMS® can produce a broader set of yield curve shapes than the AIRG.
  • Changes in curvature affect the measurement of the convexity of assets and liabilities.

Decision to be made: None.
Possible Yield Curve Movements: Parallel
AIRG and GEMS® both produce this type of movement.

Possible Yield Curve Movements: Change in Slope
AIRG and GEMS® both produce this type of movement.
Goals relating to the yield curve shape:

3. Interest rates can be negative.

Rationale for this goal: Interest rates in the U.S. have been trending lower, and negative interest rates have occurred in the past.

Background:
• Negative yields have rarely happened in the US
  • Less than 0.4% of the time for the 3-month yield
  • Never for the 5- or 10-year yields

AIRG compared to GEMS®:
• Negative yields happen roughly 5% of the time for the 3-month yield using the current GEMS® Treasury Model calibration. This can be customized.
• AIRG does not produce negative interest rates.

Decisions to be made:
• Should the model produce negative interest rates?
  • If so, how low should rates be allowed to go, and how frequently should negative rates occur?
  • If not, how absolute is this? Should there be a floor?
AIRG compared to GEMS® current calibration

Projected 3-Month Yield (10,000 Scenarios)

Goals relating to interest rate mean reversion:

4. The model should be capable of producing a reasonable range of results for very long simulations.

Rationale for this goal: A reasonable range is needed, given the long-term nature of life insurance and annuity liabilities.

Background:

- Without mean reversion in an interest rate model, the yields will "explode" over long-term simulations.
- It is important to consider both the speed of mean reversion and the level of mean reversion.
  - The following slide will provide information about speed of mean reversion.
  - See goal #5 to find information about the level of mean reversion.
AIRG compared to GEMS®: The speed of mean reversion in the AIRG is slower than in GEMS®

<table>
<thead>
<tr>
<th>Description</th>
<th>AIRG Target</th>
<th>GEMS Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long End Mean Reversion Speed</td>
<td>16.8</td>
<td>4.1</td>
</tr>
<tr>
<td>Short End Mean Reversion Speed</td>
<td>3.6</td>
<td>3.1</td>
</tr>
</tbody>
</table>

Impact of Target
- Impacts expected trajectory
  - Lower value = steeper slope given today’s low initial yields
- Impacts ratio between volatility of changes and volatility of steady state Yields
  - Higher value = more growth from Year 1 to Year 30
  - So, if we have a target for long-term volatility of Yields, a Higher value will result in lower volatility of changes

Background:
- Since 2012, the 10-year U.S. Treasury has averaged approximately 2%
- The 10-year U.S. Treasury has been below 1% since 3/19/2020
- Producing low for long scenarios will involve changing multiple targets, including the mean reversion speed, mean reversion level, and the interest rate volatility

AIRG compared to GEMS®:
- See previous slide for information on speed of mean reversion.
- See next slide for information on level of mean reversion.
AIRG compared to GEMS® (cont.):

• The mean reversion target in the AIRG is lower than the GEMS® target.

Mean Reversion Levels

<table>
<thead>
<tr>
<th>Description</th>
<th>AIRG Target</th>
<th>GEMS Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-Year Yield Mean Level</td>
<td>3.50%</td>
<td>4.48%</td>
</tr>
<tr>
<td>1-Year Yield Mean Level</td>
<td>2.50%</td>
<td>2.93%</td>
</tr>
</tbody>
</table>

Methodology used to Set Targets

• AIRG Model uses a weighted average of values from the last 36-, 120- and 600-months. The mean reversion target is automatically updated annually by this formula.

• GEMS® targets are based on Central Bank inflation targets and observed Treasury Yields since 1995

• There are other options
  • Yields stay at their current level
  • Yields follow the market’s implied expectations

Prepared by Conning. Sources: Academy Interest Rate Generator v 7.1.201905 and GEMS® Economic Scenario Generator scenarios

AIRG compared to GEMS® current calibration

Projected 20-Year Yield (10,000 scenarios)
AIRG compared to GEMS® calibration adjusted to maintain today's current low levels

Projected 20-Year Yield (10,000 scenarios)

Decisions to be made:

- What is the mean reversion target, and what methodology will be used to determine it? Conning can solve for implied parameters for each update.
- What mean reversion speed is desired?
- How many low for long scenarios are desired?
- What sensitivities should be tested prior to field testing, and how should they be determined?
Goals relating to interest rate volatility:

6. The model should produce interest rate levels that fluctuate significantly over long periods.

Rationale for this goal: This follows the historical pattern of interest rates in the U.S.

Background:

<table>
<thead>
<tr>
<th>Description</th>
<th>AIRG Target</th>
<th>GEMS Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long End 1-Year Volatility</td>
<td>11 bps</td>
<td>37 bps</td>
</tr>
<tr>
<td>Short End 1-Year Volatility</td>
<td>20 bps</td>
<td>94 bps</td>
</tr>
<tr>
<td>Absolute Minimum (3-Month Yield)</td>
<td>0.0%</td>
<td>-12.7%</td>
</tr>
<tr>
<td>Achieved Minimum (3-Month Yield)</td>
<td>0.0%</td>
<td>-2.0%</td>
</tr>
</tbody>
</table>

Impact of Target

- Impacts range of possible results
  - For comparison, actual 20-Year Treasury was down about 90 bps from 1/1/20 through 9/30/20
  - Had been down over 130 bps (3/9/20)
  - Applies to the upside, as well

- Volatility is also linked to minimum possible and observable Yields
  - More volatility leads to lower simulated Yields
  - The volatility in the AIRG is proportional to the rate level, where the lower the yield, the lower the volatility (i.e. Yields = 0 = no volatility)
  - GEMS® also has volatility proportional to the rate level, but the volatility would decline to zero at the Initial Shift level instead of at 0%
Impact of Initial Yield Level on 20-year Treasury volatility – AIRG Model as of 9/30/2020

Dispersion from Median in first 12 months of Projection

-1.5%  -1.0%  -0.5%  0.0%  0.5%  1.0%  1.5%

Baseline  Up 50 bps  Up 100 bps

Percentile
95-99  90-95  75-90  50-75  25-50  10-25  5-10  1-5

Baseline Up 50 bps Up 100 bps

20-year Treasury = 1.23%

Prepared by Conning. Source: Academy Interest Rate Generator v 7.1.201905

Impact of Initial Yield Level on 20-year Treasury volatility – GEMS® Model as of 9/30/2020

Dispersion from Median in first 12 months of Projection

-1.5%  -1.0%  -0.5%  0.0%  0.5%  1.0%  1.5%

Baseline  Up 50 bps  Up 100 bps

Percentile
95-99  90-95  75-90  50-75  25-50  10-25  5-10  1-5

Baseline Up 50 bps Up 100 bps

20-year Treasury = 1.23%

Prepared by Conning. Source: GEMS® Economic Scenario Generator scenarios
Other goals:

7. The interest rate generator should be arbitrage free.

Rationale for this goal: If a model is not arbitrage free, then there is some ability to create a risk-free profit

AIRG compared to GEMS®:

- The AIRG model is not arbitrage free. When the short end of the curve hits the minimum, the arbitrage free framework is violated
  - Consider a scenario where the 1- and 2-Month Yields are at their minimum (i.e. 1 bps). Then, over the next month, the return on a 1-Month Treasury will be 1 / 12 bps in all scenarios. On the other hand, that will be the maximum return over that period on a 2-Month Treasury. If Yields increase, then the 2-Month Treasury's return will be less than that. So, one can lock in a profit by buying the 1-Month Treasury and selling the 2-Month Treasury in that scenario.
- The GEMS® Treasury Model is arbitrage free.
- Why is this important: This is particularly important for life insurers because they are valuing not only their assets with these scenarios, but also their liabilities. So, in certain circumstances, it is possible for a company to create an asset strategy that will always outperform its liabilities despite the two having the same initial market value.

Decision to be made: No decision to be made. The GEMS model is arbitrage free. However, if a floor is introduced, it will no longer be arbitrage free.

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Other goals:

8. The ESG should be calibrated using an appropriate historical period.

Rationale for this goal: It is important to incorporate a historical period that captures an appropriate range of market dynamics while also being careful not to introduce bias into the generated scenarios

AIRG compared to GEMS®:

- The AIRG is calibrated using historical Treasury data going back to 1953.
- GEMS® is calibrated using data from 1995 to 2019. The historical period used for calibration can be customized. For example, see the customization illustrated on slide 22.

Decision to made: What historical period would regulators like to use?
Summary of Goals

Goals relating to the yield curve shape:
1. The model’s starting yield curve should match the actual yield curve as closely as possible.
2. The model should produce a variety of yield curve shapes, and they should change over time.
3. Interest rates can be negative.

Goals relating to interest rate mean reversion:
4. The model should be capable of producing a reasonable range of results for very long simulations.
5. The ESG should be capable of producing low interest rates for an extended period of time.

Goals relating to interest rate volatility:
6. The model should produce interest rate levels that fluctuate significantly over long periods.

Other goals:
7. The interest rate generator should be arbitrage free.
8. The ESG should be calibrated using an appropriate historical period.

Next Steps

1. Please send questions and comments regarding the GEMS® treasury model to Reggie Mazyck (Rmazyck@naic.org)

2. Next topics for discussion
   1. Corporate Model
   2. Equity Model