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.

   Chris Whitney, on behalf of the American Academy of Actuaries' Life Reserves Work Group.

   Revise the approach in VM-20 to determine the credited rate for index accounts in the calculation of the Deterministic Reserve (DR).

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:

   2018 edition of the Valuation Manual, updated Nov. 22, 2017; VM-20: *Requirements for Principle-based Reserves for Life Products.*

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 Attachment A.

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

   The equity market returns prescribed in the Deterministic Reserve (DR) scenario are based on analysis for variable products. Applying these returns to indexed life products results in very low index credited rates that is not consistent with the intent of the DR scenario (as defined in VM-20) to be a one standard deviation shock from the mean.

   Using an index credited rate for the DR scenario consistent with the Implied Guaranteed Rate Method (IGRM) under Actuarial Guideline XXXVI produces moderately adverse index credited rates that are more in line with the intent of the DR scenario and have a more realistic relationship between index credited rates and option budgets.

   See Attachment B for further details and supporting analysis.

* 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:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

Attachment A: Proposed changes

Add the following new paragraph #6 under Section 7.F:

F. Cash Flows Invested Assets

6. Determine cash flows for each projection interval for hedge assets used in the determination of credited amounts for indexed life insurance policies and indexed accounts of other types of life insurance products as follows:

   a. In lieu of the economic scenario 12 equity returns, as described in Section 7.G.1.a.ii for the deterministic reserve, use 105% of the amount spent on options, accumulated to the end of the option settlement period. The 1-year U.S. Treasury rate will be used for accumulation.

   b. For the scenarios described in Section 7.G.2 for the stochastic reserve, use scenario equity returns appropriate for the underlying basis for credited interest, along with mechanics of the underlying options that reflect caps, floors, and participation rates.

Attachment B: Supporting analysis

Summary

The equity market returns prescribed in the Deterministic Reserve (DR) scenario are based on analysis for variable products. Applying these returns to indexed life products results in very low index credited rates that is not consistent with the intent of the DR scenario (as defined in VM-20) to be a one standard deviation shock from the mean. Using an index credited rate for the DR scenario consistent with the Implied Guaranteed Rate Method (IGRM) under Actuarial Guideline XXXVI produces moderately adverse index credited rates that are more in line with the intent of the DR scenario and demonstrate a more realistic relationship between index credited rates and option budgets.

Analysis

Account performance

The account performance for representative Variable Universal Life (VUL) and Indexed Universal Life (IUL) products was compared over the first 20 years of projection using the DR scenario and the 10,000 SR scenarios. Product details and results from this analysis are summarized in the following table.

		VUL	IUL
Index Parameters	Dividends	Yes	No
	Cap	n/a	Dynamic*
	Guaranteed Cap	n/a	3.0%
10,000 SR Scenarios	Mean	7.7%	5.8%
	SD	3.6%	1.7%
	Minimum	-4.4%	1.4%
	Maximum	20.3%	15.3%
DR Scenario—Current	Rate	4.0%	2.0%
	SDs From Mean	**-1.0**	**-2.2**
DR Scenario—105% OB	Rate	4.0%	4.3%
	SDs From Mean	**-1.0**	**-0.9**
DR Scenario—100% OB	Rate	4.0%	4.0%
	SDs From Mean	**-1.0**	**-1.0**

* The dynamic cap is based on the projected earned rate for each scenario.

Variable account (VUL product)

Performance for the DR scenario is 1.0 standard deviation below the average of SR scenarios. This is in line with the DR scenario description shown in the "Background" section of this attachment.

Index account (IUL product)

Account performance for the DR scenario under the current approach is 2.2 standard deviations below the average of SR scenarios, which is extremely low when considering the description of the DR scenario.

The recommended change to the DR scenario brings the index account performance in line with the variable account, with performance 0.9 standard deviations below the average of the SR scenarios.

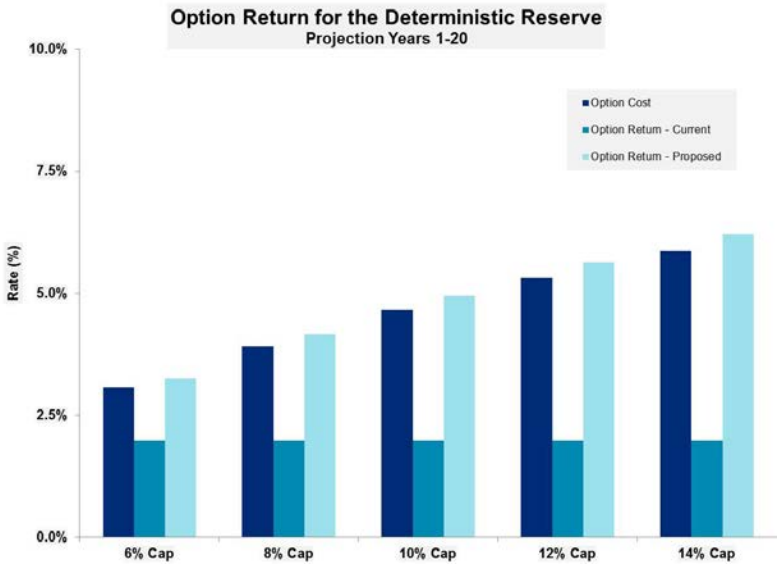
Equity growth rates

Considerations and analysis around equity growth rates were presented at the Spring NAIC meeting.[1]

The file below contains a comparison of the option return and option budgets for the DR scenario using the current and proposed approach for a variety of different cap rates.

IUL Crediting 04 09 2018.xlsx

The results demonstrate that the proposed approach has the desired effect of linking the option return to the option budget for the DR scenario. The results are shown in the following graph, taken from this file.



Background information

DR equity returns

The equity market returns for the DR scenario are based on analysis performed for variable products by the American Academy of Actuaries' Variable Universal Life Subgroup.

The scenario used for the DR is described in Section 7.G.1.c of VM-20 as: *"…interest rate yield curves and total investment returns are based on approximately a one standard deviation shock to the economic conditions as of the projection start date, where the shock is spread uniformly over the first 20 years of the projection."*

Actuarial Guideline XXXVI

The IGRM under Actuarial Guideline XXXVI defines the guaranteed rate as: (a) the guaranteed interest rate for the current term of the contract; plus (b) the accumulated option cost expressed as a percent of the policy value to which the indexed benefit is to be applied.

The option cost as of the valuation date uses the currently declared cap rate. For periods past the valuation date, the guaranteed minimum cap rate is used.

[1] The presentation can be found at actuary.org/files/publications/Academy_IUL_under_PBR_for_NAIC_Spring_2018.pdf.

