VM-22
Standard Projection Amount (SPA) P/H Behavior (PHB) Assumptions Update

VM-22 SPA PHB Assumption
Drafting Group

Drafting Group and our objective

- The 12 members of the VM-22 SPA PHB Assumptions Drafting Group (DG) comprises regulators (IA, CA and IL) and representatives from the life industry, NAIC and LIMRA.
- Except for holidays and special events, the DG conducts weekly meetings since September 2021.
- Our objective is to develop a **strawman** of PHB assumptions (i.e., except mortality) for estimating the SPA of annuity contracts covered by the proposed VM-22.

Level of Details and Product Categories

- Determining whether the VM-22 SPA is a reserve floor or a disclosure item is beyond our scope. It may be determined by VM-22 Subgroup based on the results of the field test.
  - If it is a reserve floor, the PHB assumptions should be more detail oriented.
  - If it is a disclosure item, the PHB assumptions could be at a high level.
- The current target is to develop PHB assumptions for fixed annuities (FA), fixed indexed annuities (FIA), with or w/o guaranteed living benefit (GLB).
- Indexed Linked Variable Annuities (ILVA) was determined to be out of our scope and should be covered under VM-21.
- MYGA is grouped with FA. If we have time, we may develop specific PHB assumptions for MYGA.
- Distribution channel can also be a factor for PHB assumptions.

Approaches for Developing PHB Assumptions

- Three approaches were discussed:
  A. Use VM-21 SPA's actuarial assumptions as a starting point (a priori). By means of credibility theory or other methods to blend the SoA/LIMRA general account annuity experience data with VM-21 SPA assumptions to form the initial set of PHB assumptions (posterior).
  B. Directly use SoA/LIMRA experience data to develop the initial set of actuarial PHB assumptions.
  C. Develop a new method, other than those used for VM-21 or other valuation manual, to derive the initial set of actuarial assumptions.

- Approach A was chosen as the initial approach.
- For certain assumptions such as surrender, we may use SoA/LIMRA data to validate and modify assumptions developed by other sources.

Valuation Methods and Inventory of PHB Assumptions

- To be consistent with VM-21, the DG assumes both valuation methods (Company Specific Market Path and CTE with Prescribed Assumptions) specified in VM-21 for SPA are also applicable valuation methods for VM-22 SPA.
- The PHB assumptions for VM-22 SPA are listed below:
  - Assignment of VM-22 product types (FA/MYGA, FIA)
  - Maintenance expenses – not covered by LIMRA database
  - Guaranteed actuarial present value (GAPV)
  - Partial withdraw
  - Withdraw Delay Cohort – it was later determined to be too complicated and was not retained
  - Full surrender
  - Annuitization
  - Account transfers and future deposits
  - Account value depletion
  - Other voluntary terminations
  - Dynamic surrender and withdraw (not mentioned in VM-21) – sensitivity parameters, crediting rate, competitor rate
  - Base and dynamic GLB utilization (not mentioned in VM-21)

Crediting rate, competitor rate and dynamic parameters(1)

- With respect to crediting rate and competitor rate, there is no experience data suitable across the life industry.
- The practices for setting competitor rate or crediting rate floor should be included in an actuarial practice note rather the Valuation Manual.
- It is decided that this DG will not develop their exact definitions. Instead, this DG will
  a. Allow qualified actuary to use his/her professional judgement to set the assumed crediting rate and competitor rate for the VM-22 stochastic reserve and use them for the VM-22 SPA
  b. Require companies to provide detail documentation to justify these two assumptions
  c. Incorporate dynamic lapse/PW parameters to reflect the diff between crediting/competitor rates
  d. Provide guardrails for crediting rate and competitor rates, during and after the SC period
  e. Use company's supporting documents for the assumptions to identify outliers for further scrutiny
  f. The reasonableness of these assumed crediting and competitor rates should be reflected in the modeling of assumed surrender rates (base lapse rate and dynamic lapse)
  g. There should be a limit on the PV of future investment spreads (not future profits) to avoid companies abuse the system by assuming significant annual investment spreads (e.g., 5%) between future earned rates and crediting rates. The PV of future investment spreads is calculated using VM-20 Scenario #9 "Baseline Scenario – All Shocks are Zero." This should be a part of the required documentation in (b).

Crediting rate, competitor rate and dynamic parameters (2)

- For FIA, the option budget is the assumed crediting rate for quantifying the investment spread between the net portfolio earned rate and the crediting rate.

- With respect to setting limit on the spread between the net portfolio earned rate and the crediting rate, DG proposes that
  a. The maximum annual spread to be [2.25%] for policies without initial bonus.
  b. For policies with initial bonus of [B%], the maximum annual spread is [2.25%] + [B%]/SCP during the surrender charge period (SCP). The maximum annual spread is reduced back to [2.25%] after the SCP.
  c. The extra maximum annual spread [B%]/SCP allows the insurer to recapture the initial bonus via higher spread during the SCP.
  d. If the proposed maximum annual spreads noted in (a) and (b) are adopted, an insurer may ask the regulators in its state of domicile for special permission if the insurer can justify the exception. As it can create non-uniform practices among states, such permission should only be granted with strong supports and may be scrutinized by VAWG. In other words, granting such permission should be a rare event.

Product groups and their assumptions

- There will be PHB assumptions for FIA and FA/MYGA.
- There will be no specific PHB assumptions for two-tier annuities due to immaterial amount of new business.
- There will be no PHB assumptions for payout annuities (e.g., pension risk transfer (PRT), SPIA, DIA, Structured Settlements contracts) due to lack of policyholder flexibilities (e.g., surrender or PW). Mortality is the key assumption for these payout annuities.
- An insurer may use its own retirement age assumption for PRT stochastic reserve as an assumption for VM-22 SPA. If there are credible experience data, we may develop appropriate guardrails for the retirement age assumption in the future.
- The effect of market value adjustment (MVA) should be incorporated into dynamic lapse formula.
- For annuities with both FA and FIA features, the general principle is to define whether the contract is FA/FIA in accordance with the classification of the base contract.
- GLB is the most common rider for FA and FIA. GLB and LTC riders may affect PHB.
- If there is no credible experience data for certain innovative riders, companies should incorporate margins into their PHB assumptions for annuities with such innovative riders.

Withdraw, annuitization and other minor assumptions

- Withdraw assumptions
  - Currently, VM-21 SPA has a special provision for withdraw cohort which may not be applicable for general account deferred annuities (FA and FIA).
  - DG will look at the LIMRA data first and try to keep it simple before considering a more complicated withdraw assumption.
- Annuitization assumptions
  - The industry's experience on annuitization is that the utilization rate is minimal (10-15bp).
  - Due to its immateriality, DG will not prescribe the annuitization assumption.
  - Companies may use their own annuitization assumptions for stochastic reserve as the assumptions for SPA.
- Maintenance expense, AV transfers, future deposits, AV depletion and other voluntary terminations are considered immaterial.
  - For these minor assumptions, companies may use their own assumptions for stochastic reserve as assumptions for SPA.

Withdraw Assumptions(1)

The proposed VM-22 SPA withdraw assumptions follow the format of VM-21 SPA withdraw assumptions.

- For FA/FIA, either prior to exercising the GLB or FA/FIA without GLB, the partial withdrawal amount each year shall equal the following percentages of AV, based on the contract holder's attained age:

Attained Age	With GLB; % of AV	W/O GLB; % of AV
59 and under	[1.50%]	[2.25%]
60-69	[1.75%]	[2.75%]
70-74	[3.75%]	[4.50%]
75+	[4.25%]	[4.50%]

- For FA/FIA contracts with GLB and account values of zero, the partial withdrawal amount shall be the guaranteed maximum annual withdrawal amount.
- Numbers quoted in brackets [ ] are based on the recent LIMRA collected data for FIA and are subject to change.

Withdraw Assumptions(2)

- For FA/FIA contracts with GLBs or hybrid GMIBs, that, in the contract year immediately preceding the valuation date, withdrew a non-zero amount not in excess of GMWB's guaranteed withdrawal amount or the GMIB's dollar-for-dollar maximum withdrawal amount, the partial withdrawal amount shall be [100%] of the guaranteed annual withdrawal amount or the GMIB's dollar-for-dollar maximum withdrawal amount each year until the contract's account value reaches zero.
- For other FA/FIA contracts with lifetime GMWBs or hybrid GMIBs, partial withdrawals shall be projected to commence pursuant to the Company's own prudent best estimate assumptions, but ensuring that, at a minimum, GMWB or hybrid GMIB utilization rates in aggregate, measured by benefit base under Path A (replicating 70CTE), are at least as high as the utilization rates shown in the table below. Once GMWB or hybrid GMIB withdrawals are projected to commence, the partial withdrawal amount shall be 100% of the guaranteed annual withdrawal amount or the GMIB's dollar-for-dollar maximum withdrawal amount each year until the contract's account value reaches zero.

Qualification Status	Before 65	65-70	71-75	76+
Non-Qualified	[12%]	[20%]	[30%]	[35%]
Qualified	[15%]	[40%]	[80%]	[95%]

Withdraw Assumptions (3)

- For FA/FIA contracts with Non-Lifetime GLBs that, in the contract year immediately preceding the valuation date, withdrew a non-zero amount not in excess of GMWB's guaranteed withdrawal amount, the partial withdrawal amount shall be [70%] of the guaranteed annual withdrawal amount each year until the contract's account value reaches zero.
- For other FA/FIA contracts with Non-Lifetime GMWBs, partial withdrawals shall be projected to commence pursuant to the Company's own prudent best estimate assumptions but ensuring that, at a minimum, GMWB utilization rates in aggregate, measured by benefit base under Path A (replicating 70CTE), are at least as high as the utilization rates shown in the table below. Once GMWB or hybrid GMIB withdrawals are projected to commence, the partial withdrawal amount shall be [70%] of the GMWB's guaranteed annual withdrawal amount each year until the contract value reaches zero.

Qualification	Before 65	65-70	70-75	76+
Non-Qualified	[12%]	[20%]	[30%]	[35%]
Qualified	[15%]	[40%]	[80%]	[95%]

Initial thoughts on surrender assumptions and In-the-Moneyness (ITM)

For deferred annuity products, base lapse/ surrender rates are dynamically adjusted upward (or downward) when the actual credited rate is below (or above) the competitor rate. For deferred annuity products with a GLIB, base lapse/ surrender rates are further adjusted based on the ITM of the rider value. The proposed lapse formula is as follows:

$Total\ Lapse\ = (Base\ Lapse\ +\ Rate\ Factor) \times\ ITM\ Factor$, where

$ITM = PV\ of\ GMWB\ \div Account\ Value$

$PV\ of\ GMWB = Annuity\ Factor \times GMWB\ Benefit$

$ITM\ Factor\ =\ 1$ if ITM ≤ 1.25

$ITM\ Factor\ =\ (\frac{1.25}{ITM})^{2}$ if ITM > 1.25

$Rate\ Factor\ =\ Market\ Factor\ \times\ Max(0, 1 - 5 \times SC\ Percentage)\ /100$, where

$Market\ Factor\ =\ -1.25\ \times\ (CR - MR)^{2.5}$ if CR ≥ MR

$Market\ Factor\ =\ 0$ if MR > CR ≥ [MR – BF]

$Market\ Factor\ =\ 1.25\ \times\ (MR - BF - CR)^{2.5}$ if CR < [MR – BF]

Minimum Lapse = 1%

Maximum Lapse = 60%; 90% for MYGA at the end of the interest guaranteed period

- CR represents the crediting rate at the time of the projection.
- MR represents the market competitor rate at the time of the projection.
- BF represents a buffer factor where dynamic lapses do not occur

The final formula and parameters for FA/FIA will be adjusted in accordance with emerging experience.

Data for setting surrender assumptions (1)

- DG has studied the most recent LIMRA surrender data for FIA/ FA and does not consider the data for FA to be very insightful. A new revised set of FA surrender data is needed.
- A new set of experience data for FA can be obtained by either (a) collecting a new set of data from the industry or (b) collecting the new experience data for FA via VM-51 requirements.
- An alternative is to discuss this data issue with the Academy (ARCWG) and its consultants, WTW. The goal is to determine whether the DG can leverage on the data collected by WTW or to evaluate whether the Academy's suggested surrender assumptions for SPA are viable.

Data for setting surrender assumptions (2)

- DG decided to ask LIMRA to send out a mini-survey for FA which contains less data fields (20-22) and focuses on surrender data.
- Some detail data fields are not included in the survey with the following assumptions:
  - MVA is not subject to dynamic lapse as the market value adjustment eliminates interest-related lapses.
  - MVA period is the same as the surrender charge period.
  - GLB is not as prevalent in FA as in FIA. Thus, DG only wants a GLB indicator for each FA contract to differentiate whether GLB has material effects on FA surrender rates.
- Distribution channel remains as an important factor for surrender and is a required data field for the mini-survey.

Data for setting surrender assumptions (3)

- LIMRA indicates that the regular data survey for FIA has been sent to the participating companies earlier this year and expects responses in the next few months.
- The remaining task is to prepare the mini-survey for FA in the same format as the regular data survey for FIA and submit it to the participating companies.
- The proposed approach is to review WTW's surrender assumptions and use the collected data to validate or modify the formulae and parameters for FA and FIA.

Timing of the data collection

- The time schedules for FIA/FA PHB data are:
  a. FIA
     i. Received data from 18 companies with 9 companies' data being validated.
     ii. LIMRA is working with the remaining companies to clarify or amend the received data.
     iii. All companies' data should be validated by end of September 2022
     iv. A preliminary set of data should be available by mid-Oct.

  b. FA
     i. A project oversight group was formed.
     ii. Deadline for the receiving the data should be end of the end of 2022.
     iii. After data validation, a preliminary set of PHB data should be available at the end of 1Q2023.

- DG is responsible to develop the pivot tables for LIMRA (by mid-July) to analyze the collected data.

Questions?