2020 VALUATION ACTUARY
VIRTUAL SYMPOSIUM

IFRS 17 Implementation Considerations for Variable Annuity (VA) with a focus on Hedging

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Agenda

- General considerations of IFRS17 implementation for VA writers and reinsurers
- A case study of IFRS17 implementation
- IFRS17 ALM survey results

Scope of IFRS 17: Mostly unchanged from IFRS 4

- Applies to:
  - Insurance and reinsurance contracts issued
  - Reinsurance contracts held,
  - Investment contracts with discretionary participation features
- Does not apply to:
  - Warranties or residual value guarantees provided by manufacturer, retailer
  - Employer provided benefits
  - Contingent payments on non-financial items
  - Financial guarantee contracts
  - Policyholder accounting other than reinsurance ceded
- Optionally applies to fixed fee service contracts (or can apply IFRS 15 – Revenue)

Introduction – Measurement Approaches

There are three measurement approaches in IFRS 17, depending on the type of insurance contracts:

GENERAL MODEL
(aka Building Block Approach or BBA)

Default valuation approach

VARIABLE FEE APPROACH
(VFA)

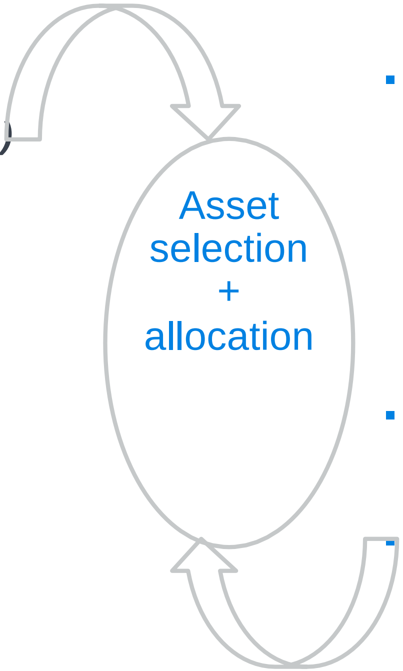
Approach for contracts with direct participation features (e.g. unit-linked, with-profit contracts)

PREMIUM ALLOCATION APPROACH
(PAA)

Simplified approach for short duration contracts (coverage period up to one year)

IFRS 17 and IFRS 9 Interaction

- Liability measurement models:
  - ***Building Block Approach (BBA)***
  - *Premium Allocation Approach (PAA)*
  - *Variable Fee Approach (VFA)*
- CSM, RA, BEL (cash flow, discount rate)
- Accounting mismatches due to interest rate movements:
  - Changes in discount rates will be reported either through P&L or OCI



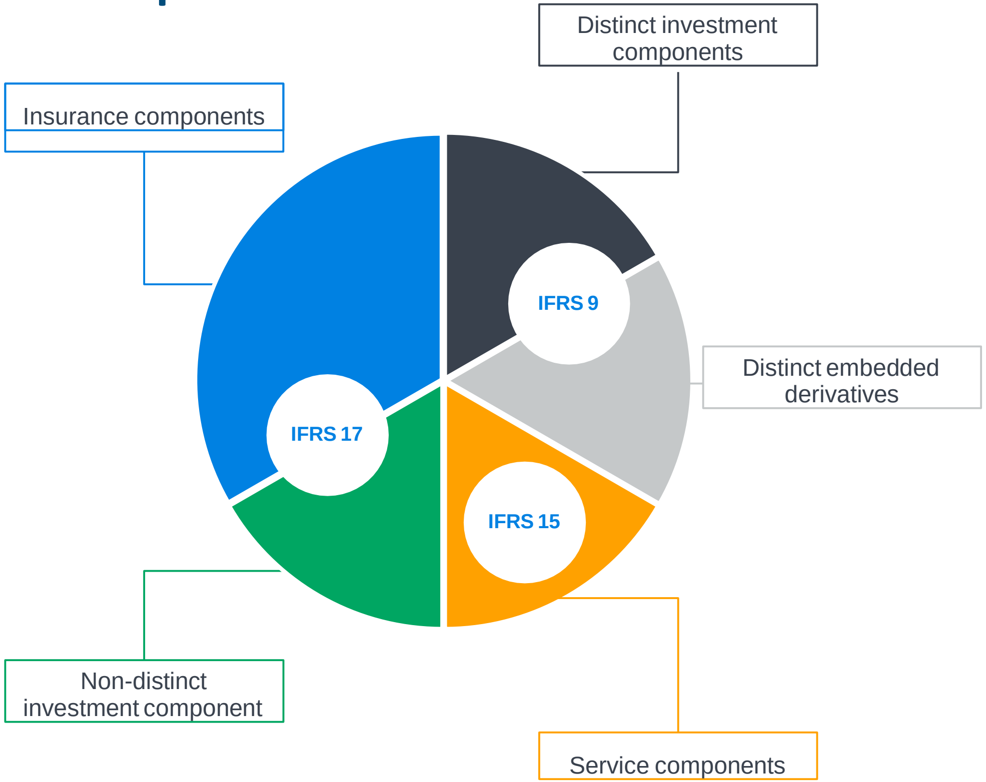
- Assets classification: **amortized cost, FVOCI or FVPL.**
  - Impact to equity instruments
  - Impact to debt instruments
- Valuation of impairment
- Hedge accounting

IFRS 17 ⟷ **IFRS 9**

Goal Setting

Bifurcation - Investment components

- Distinct investment components should be separated from the host insurance contract unless highly interrelated
- A distinct investment component is sold or can be sold separately
- An insurance contract and investment contract are highly interrelated if:
  - It is not possible to measure the one without considering the other; or
  - The policyholder is unable to benefit from one component unless the other is also present
- Promises to transfer distinct goods or non-insurance services to the policyholder – apply IFRS 15



Transition – Three Approaches

Full retrospective approach

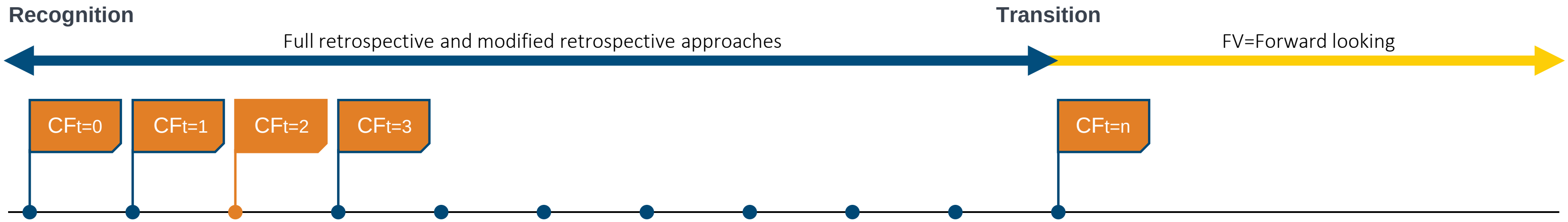
- Required where not ‘impracticable’
- Requires day 1 data and assumptions and full history to date of transition
- If impracticable, choose between modified retrospective and fair value approach

Modified retrospective approach

- Retrospective with simplifications to address data gaps
- Assumes that the historical cash flows are equal to the estimated cash flows at recognition.
- Simplifications can be applied on a piecemeal basis

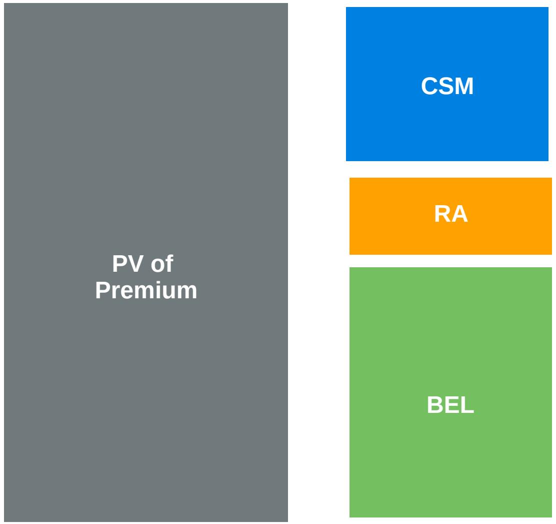
Fair value approach

- Comparison of fulfilment value to IFRS 13 fair value
- Could result in limited CSM and future profits
- Determination of fair value of insurance contract is unclear
- Could lead to counter intuitive results for renewals and onerous contracts



General Model

- *Best Estimate Liability (BEL)*: unbiased best estimate value of future net cash flows expected to fulfill the insurance
- *Risk Adjustment (RA)*: compensation that a company requires for bearing any uncertainty in the underlying cash flow
- *Contractual Services Margin (CSM)*: the expected insurance profit calculated at inception. CSM would amortize over the life of the contract. Losses are recognized immediately for loss-making contracts.
- *Cohort*: policyholders can be grouped into cohorts. Within each cohort, there are 3 groups: onerous, maybe onerous, profitable.



Source: IFRS 17 - Introduction, Challenges & Opportunities

Best Estimate of Liability

- Present Value of unbiased best estimate value of future net cash flows expected to fulfill the insurance contracts
- Expected value (i.e. probability-weighted average mean) of the full range of possible future cash flows
- It is recalculated at every reporting period.

Future cash flows should:

1) Incorporate all reasonable and available information in an unbiased way
2) Reflect the perspective of the entity, any relevant market variables are consistent with observable market prices
3) Up to date assumptions about the future at validation date

General Model

- Risk Adjustment

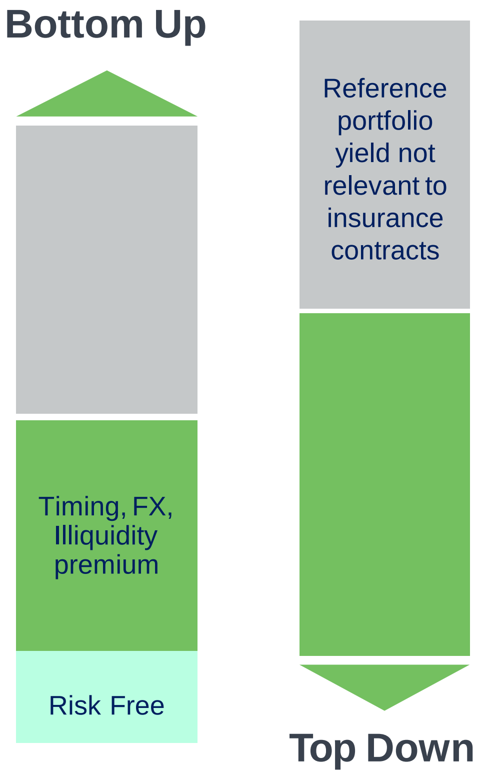
- Compensation that a company requires for bearing any non-financial risk in the underlying cash flow

- Non-financial risk includes insurance risk and other risks such as lapse and expense risk, not general operational risk.

- No guidance on techniques, but higher RM for the following characteristics
  - ✓Risks with low frequency and high severity
  - ✓Contracts with longer duration
  - ✓Risks with a wider probability distribution
  - ✓The less that is known about the underlying assumptions

Discounting

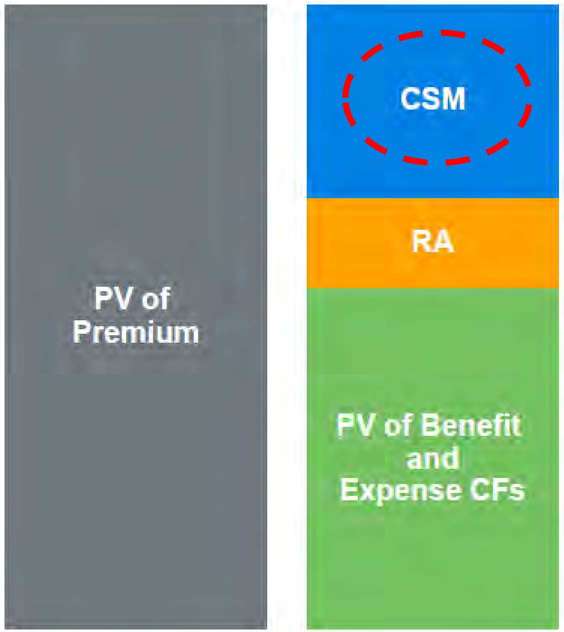
- Be consistent with observable current market prices for assets with cash flows whose characteristics are consistent with those of the insurance contracts.
- Reflect time value of money, characteristics, and liquidity of the insurance cash flow
- Exclude credit risk
- Bottom up or top down approach



General Model

- Contractual Services Margin (CSM)

- CSM: un-earned profit that will be realized over time as contract obligations are fulfilled
- CSM cannot be negative at cohort level
- Amortized over coverage period in proportion to service provided
- For example, CSM released in year t = (expected release of coverage units in year t) / (sum of expected coverage units in all years)
- CSM unlocked for changes in estimate of future cash flows related to providing future service that derive from non-financial risks
- CSM not unlocked for changes in discount rate



Source: IFRS 17 - Introduction, Challenges & Opportunities

General Model

- CSM Unlocking for Subsequent Runs

✓CSM is updated based on locked-in discount rates.

✓CSM unlocked for changes in estimates of future cash flows related to providing future service that derive from non-financial risks.

✓CSM not unlocked for changes in discount rates

General Model (GM):

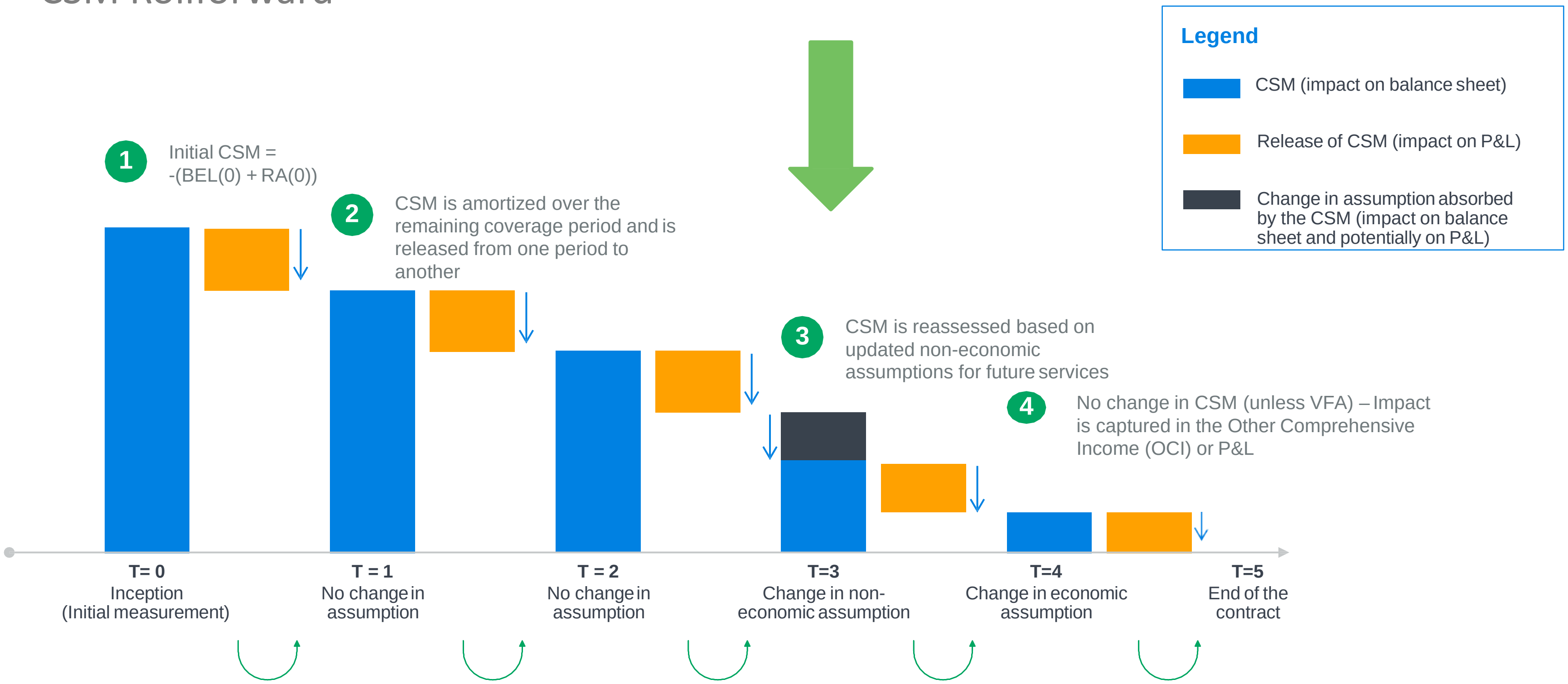
- Non-economic assumption: absorbed in CSM
- Discount rates and market variable changes: OCI and P&L

Variable Fee Approach (VFA):

- CSM is adjusted for changes in estimates of the variable fee as well as discount rate.

General Model

- CSM Rollforward



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What is the Variable Fee Approach?

- **Key Requirements**
  - Modification of General Model (BBA)
  - Applies to contracts with participating features
  - Entity's obligation is difference between share of return on fair value of underlying items minus insurer's fee for services or guarantees provided.
  - Any changes in insurer's fees are reflected in the CSM and recognized accordingly

- Differences with BBA
  - Accretion of interest on CSM uses current interest rates
  - Changes in market variables, including options and guarantees, are recognized in CSM
- Provided specific criteria are met, insurers may elect not to recognize in CSM any changes to the shareholders' share or changes to financial guarantees if there are in place risk management/mitigation strategies
- IFRS 9 hedge accounting can also apply, if conditions are satisfied

- **Hedging adjustment under VFA**
  - CSM is adjusted for changes in financial risk
  - However, if an entity hedges market risks, the entity can elect to adjust P&L to reflect these changes.
  - This resolves the mismatch that would otherwise occur if the hedge instruments flowed through P&L and the liability financial risk changes adjusted CSM only.

Direct Participating Contracts

- Definition
  - Contract terms must specify PH to share in returns of clearly defined pool of underlying items
  - Entity expects to pay PH a substantial share of FV returns on underlying items
  - Entity expects a substantial portion of any change in the amounts to be paid to the PH to vary with the change in FV of the underlying items

- Assess at inception only

- Underlying item
  - Can be anything
  - Must be specified in the contract and be enforceable
  - Do not need to hold it
  - Cannot change it in retrospect

- Reinsurance contracts cannot be direct participating contracts

Accounting mismatch – analysis

Valuation of financial assets

Premium allocation approach

- Amortized cost and FVOCI

General model

- FVOCI
- FVP&L
- Amortized cost and FVOCI

Variable fee approach

- FVP&L

Valuation of insurance liabilities

Premium allocation approach

- No discounting

General model

- Discounting through OCI and roll forward P&L
- Discounting and roll forward P&L
- No discounting (short term claims reserves)

Variable fee approach

- FVP&L, but CSM will absorb significant part of the change of the variable fee.
  Option to use P&L.

IFRS 17 Risk Mitigation

- ✓ Insurers are not required to adopt
- ✓ Effect of changes in financial risks do not adjust CSM under VFA
  - ✓ Recognized in P&L instead
- ✓ Insurers must:
  - ✓ Document risk management objective
  - ✓ Document risk mitigation strategy
- ✓ Very similar to IFRS 9 hedge accounting requirements
- ✓ Thus, changes in financial risk through P&L are offset by asset fair value changes in associated backing derivatives.
- ✓ Mismatch reduced
- ✓ Under GM, financial market changes already flow through P&L and do not impact CSM.
- ✓ It is unclear what the impact of non-derivative risk-mitigation assets will be.

IFRS 17 Risk Mitigation vs IFRS 9 Hedge Accounting

- When derivatives are used, changes in derivatives' fair value will offset insurance guarantees.
- Fulfilment cash flow volatility will be reduced, though depending on valuation methodology and derivatives used, it may not be eliminated
- At present, hedging is not typically done at the level of granularity required by IFRS 17, as IFRS 4 does not require it.
- Assets backing insurance contracts held at FVPL, with FV movements going through income statement, offset by insurance liabilities which are measured using current economic assumptions.
  - This will be unchanged by IFRS 9 and 17.
- Hedge accounting requires hedged item to be separately identifiable and reliably measured.
  - Difficult, if not impossible if investment and insurance components are highly interrelated.
  - Example: lapses, surrenders, new business, mortality. If these impact financial market risks, then it is not clear how they could be excluded from hedging relationship.

Case Study of IFRS17 Implementation

Case Study Background

- Variable annuity reinsurer currently report under GAAP
- Rider features: Lifetime GMWB and GMDB
    - Dynamic lapse that vary by In-the-moneyness (ITM)
    - Annual Ratchet, reset, and rollup
- Risk mitigation: dynamic hedging fair value liability
    - Daily Delta hedge
    - Daily Rho hedge
    - No volatility or Gamma hedging
- Somewhat unique case because most VA apply VFA but because it’s a reinsurer, they are restricted to use the General Model. This required us to develop methodologies from first principle of the IFRS17 framework

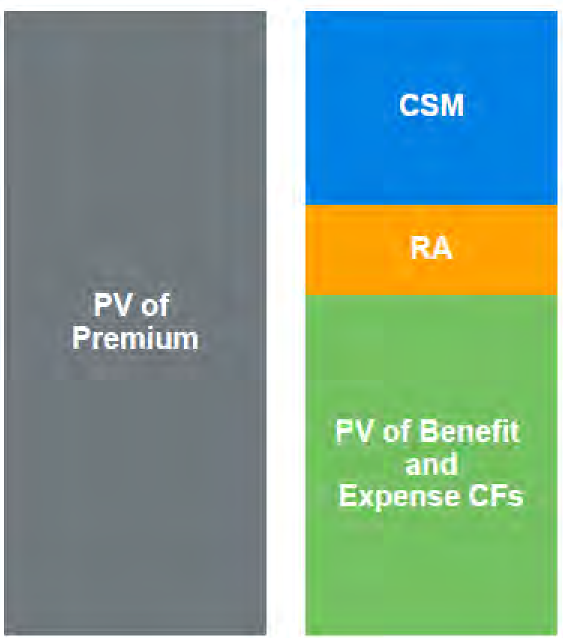
Key Decisions

- Transition Model

- Transition Model: Modified Retrospective Approach or Full Retrospective
  - Started with Fair Value Approach to calculate initial CSM
  - Between the first reinsured policy and transition date, interest rates dropped almost 100 bps, in most countries
  - Which approach can better reflect their dynamic hedging program?

Key Decisions

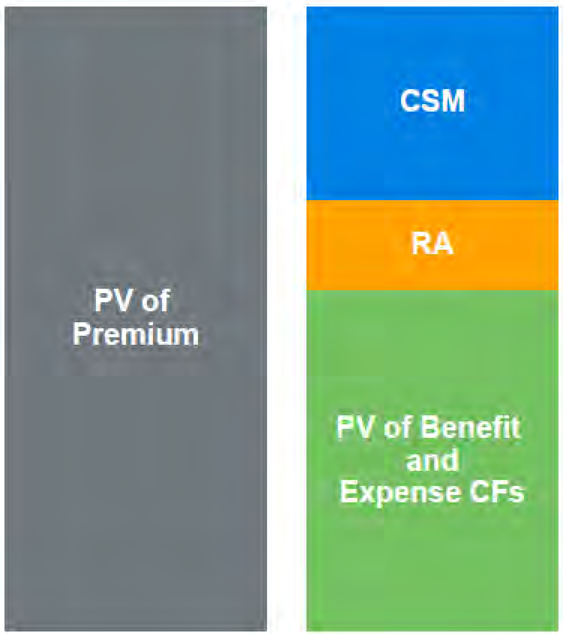
- Measurement Approach



Source: IFRS 17 - Introduction, Challenges & Opportunities

- Measurement Approach: the General Model (BBA)
  - BBA is the only feasible approach for a VA reinsurer
- Reporting Components at cohort level:
  - Best estimate liability = fair value valuation (hedging)
  - Risk Adjustment (RA):
    - Cost of capital approach
    - Margin uses Solvency II concept, 99.5%tile
      - Longevity risk
      - Lower lapse risk (under hedge)
  - CSM: details in later slides

Key Decisions
- Discounting



Source: IFRS 17 - Introduction, Challenges & Opportunities

- Bottom-up discounting: Risk free curve + illiquidity spread
  - OIS rates: more likely but may introduce disconnect with hedging if hedges different rates
  - LIBOR swap rates: current interest rate assumption but LIBOR is going away

Key Decisions

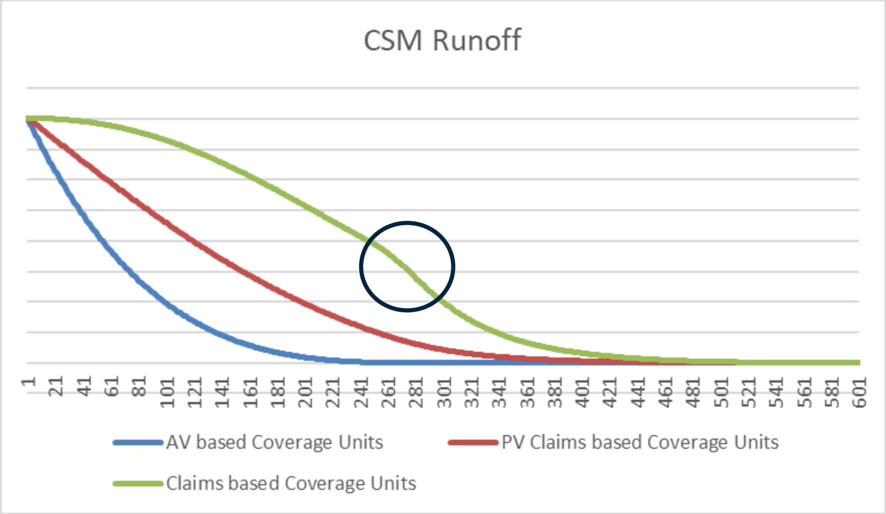
- Coverage Units Definition and Initial CSM Release

1. PV of Account value (AV) based Coverage Units:
   - Variable annuity is viewed as predominantly an investment product, with policyholder benefitting from market-driven AV growth. It's widely recognized in accounting treatment as an option, especially when it is rider only
   - CSM is viewed as the present value of future profits and coverage units as the timing of profit release
   - Initial CSM is tied to account value. M&E fees are account value based
   - Profit stream can be protected from hedging, so linking profit to AV lines up nicely with the hedging program
2. PV of claims based coverage units
3. Claims based coverage units

Key Decisions

- Coverage Units Definition and Initial CSM Release

1. PV of AV based coverage units (blue)
   - Most aggressive / frontload profit release
   - Smooth release
2. PV of claims based coverage units (red)
   - Medium speed and duration
   - Smooth release
3. Claims based coverage units (green)
   - Most conservative / backload profit release
   - Not as smooth; may have kinks, especially at cohort level



Key Decisions

- CSM Roll-forward and Unlocking

- CSM roll-forward in subsequent periods:
  1. Interest is accredited based on initial interest rate curve
  2. Expected CSM is released based on Coverage Units
- CSM is unlocked in subsequent periods: non-financial risks only
  1. Experience adjustment arising from premium received
  2. Changes in estimates of the PV of the future cash flows for remaining coverage
  3. Differences between actual vs expected investment component payable
  4. Changes in risk adjustment for non-financial risk

Key Decisions

- CSM Roll-forward and Unlocking

- CSM is unlocked in challenges:
    a) De-couple embedded financial risk impact

*"Distinguish between the effect of changes in assumptions that **relate to financial risk** on that commitment and the effect of **discretionary changes** to that commitment"*

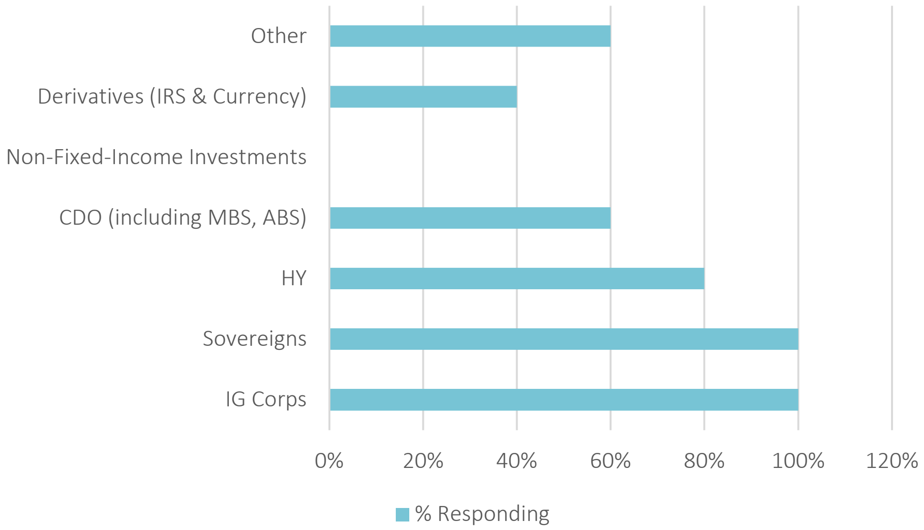
Key Decisions

- CSM Roll-forward and Unlocking

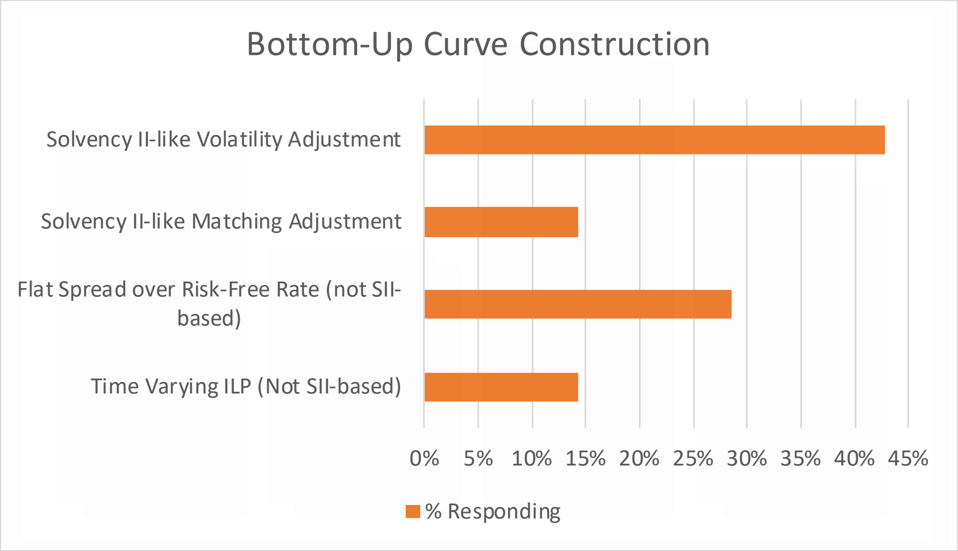
- De-couple embedded financial risks impact
  1) AV fluctuates with market
  2) Ratchet feature makes benefit base also market dependent
  3) Dynamic lapse function makes lapse assumption also market dependent
- As market condition change, it can cause CSM duration to contract or extend but it does not affect CSM amount as it should not be market sensitive
- Step 1: capture CSM duration change due to market condition update
- Step 2: capture CSM amount change due to discretionary assumption update

IFRS 9 & 17 ALM Survey

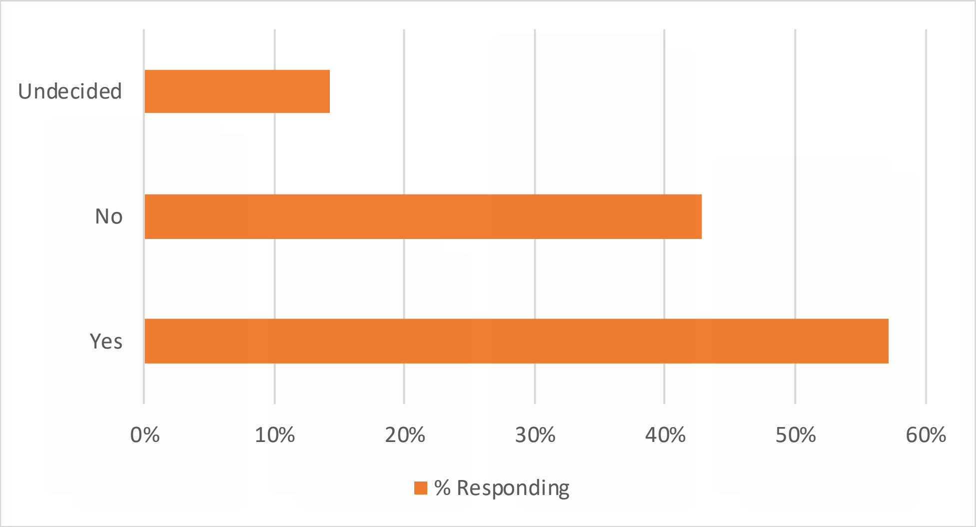
If you are using the top-down approach, what assets are you using to build the curve?



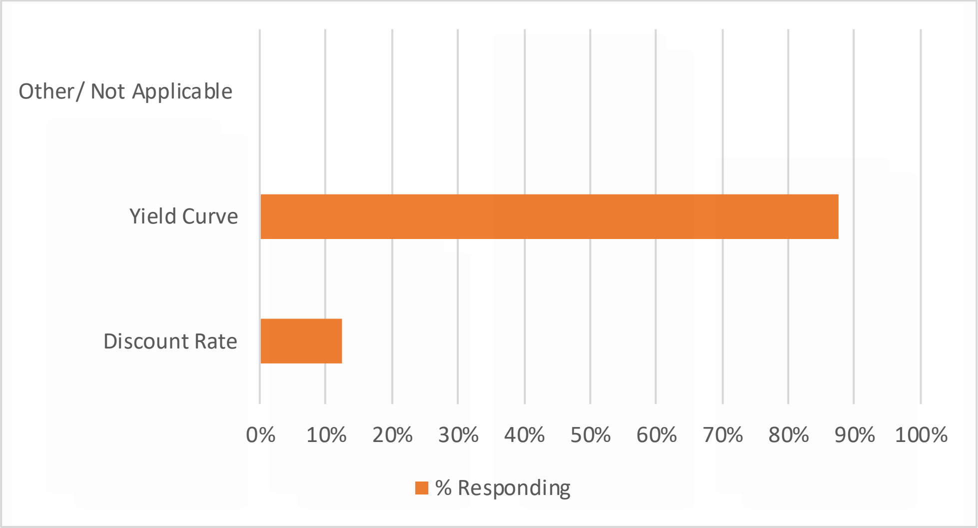
If using a bottom-up approach, how are you calculating the spread over the risk-free rate?



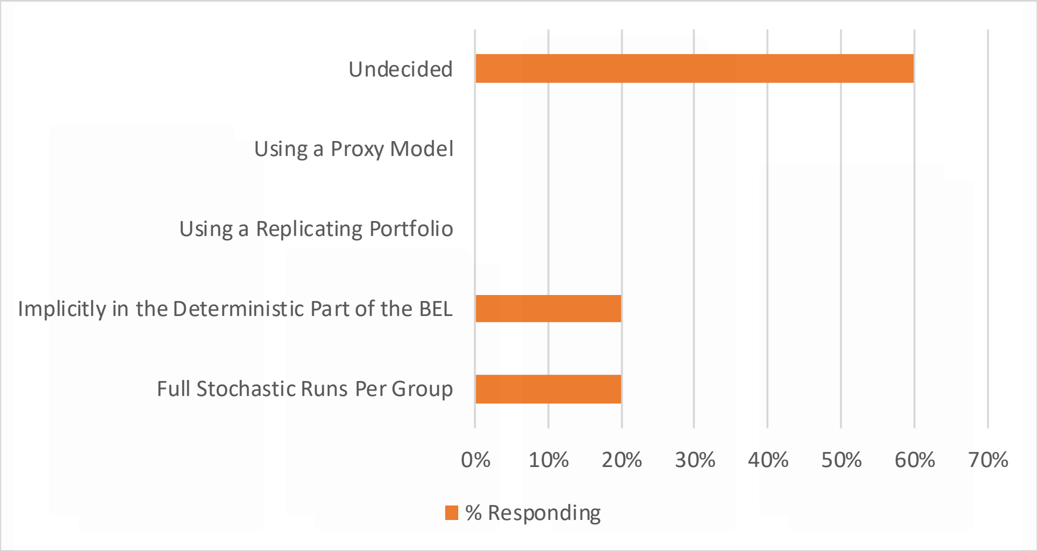
Will you use an Ultimate Forward Rate (UFR)?



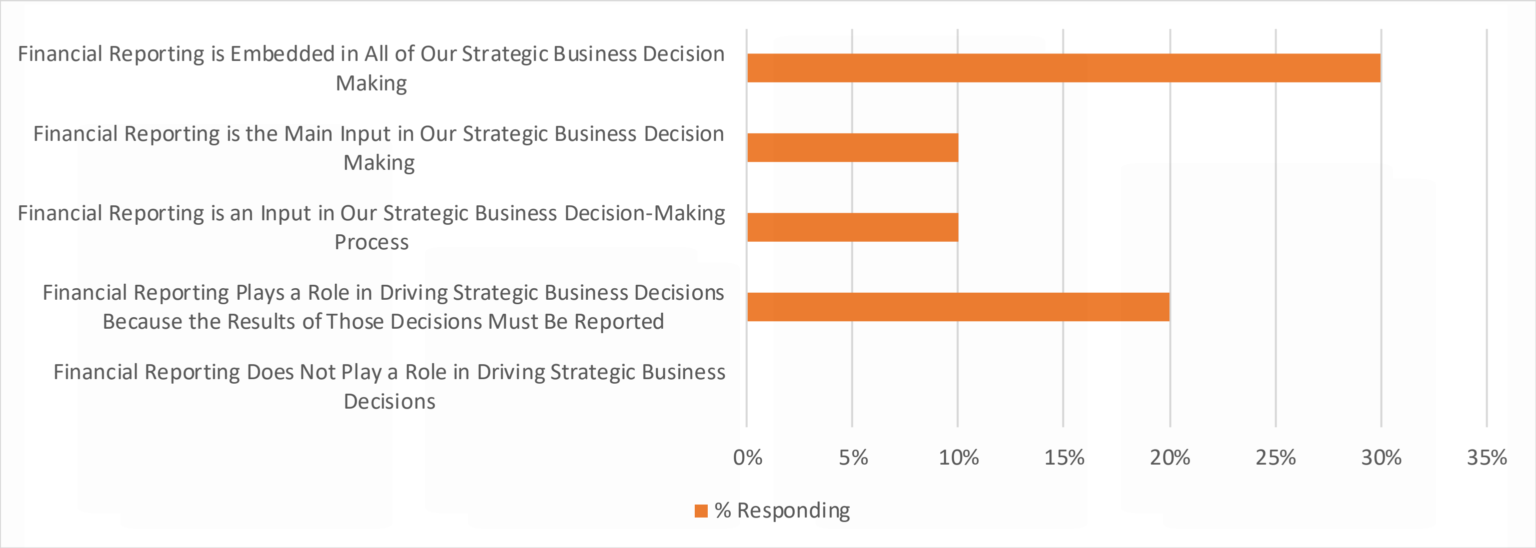
Will you use a discount rate (using IRR) as the locked-in rate for contracts valued under the GM, or apply a yield curve?



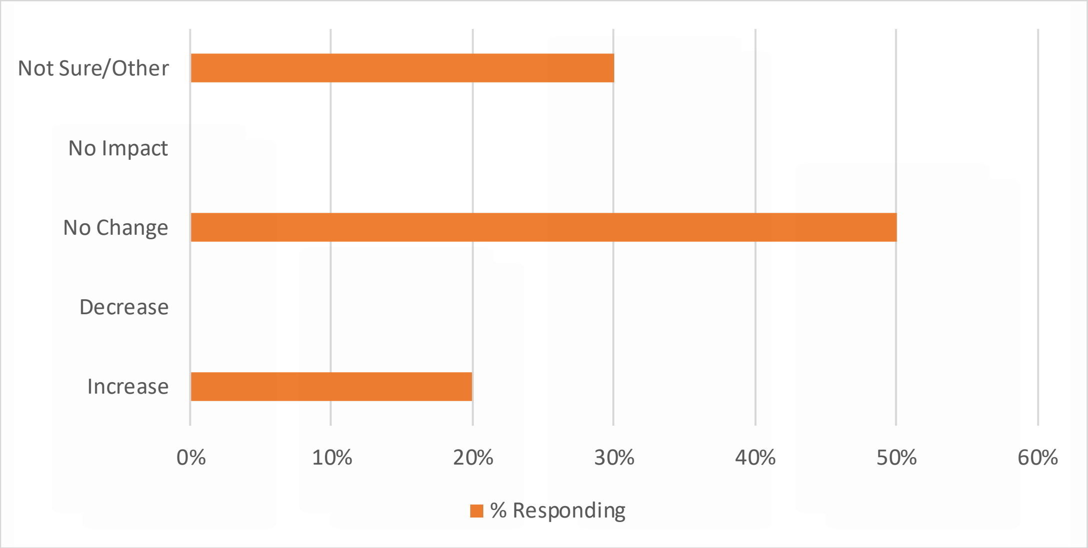
How will you calculate the time value of options and guarantees?



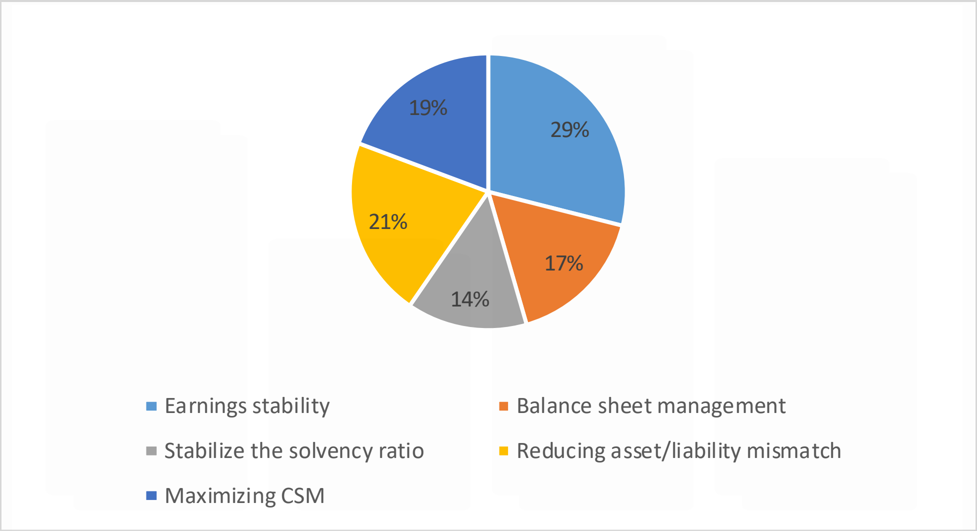
How big of a role does financial reporting play in driving day-to-day strategic business decisions?



Do You Expect IFRS 17 to Increase, Decrease, or Keep Unchanged the Role of Financial Reporting in Driving Day-to-Day Strategic Business Decisions?



What are your ALM goals in determining discount curves going forward?



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