

PBR Implementation: Lessons Learned

Boston Actuarial Club

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Part I: Agenda

VM-20 Overview

5 Min

**PBR
Implementation
Consideration**

10 min

**PBR Modeling
Consideration**

5 Min

**PBR Reporting
Consideration**

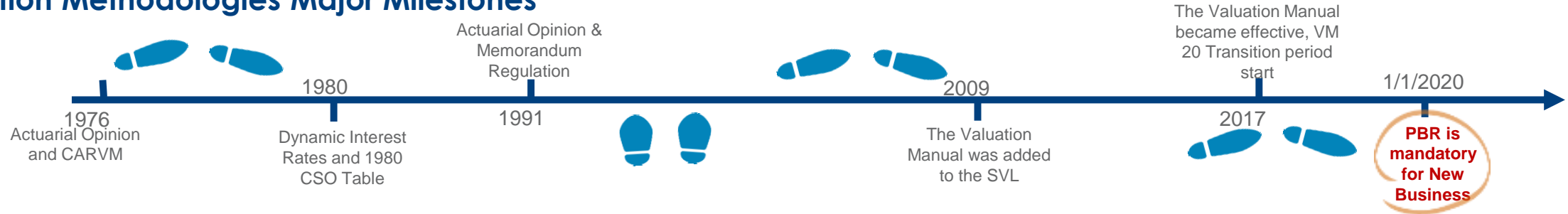
5 min

VM-20 Overview

A milestone in valuation methodology change for life products



Valuation Methodologies Major Milestones



Net Premium Reserve
A “formulaic” type reserve intended to serve as the “floor” reserve for any specific policy. Separate calculation for ULSG & term products. Defaults to current CRVM for other products.



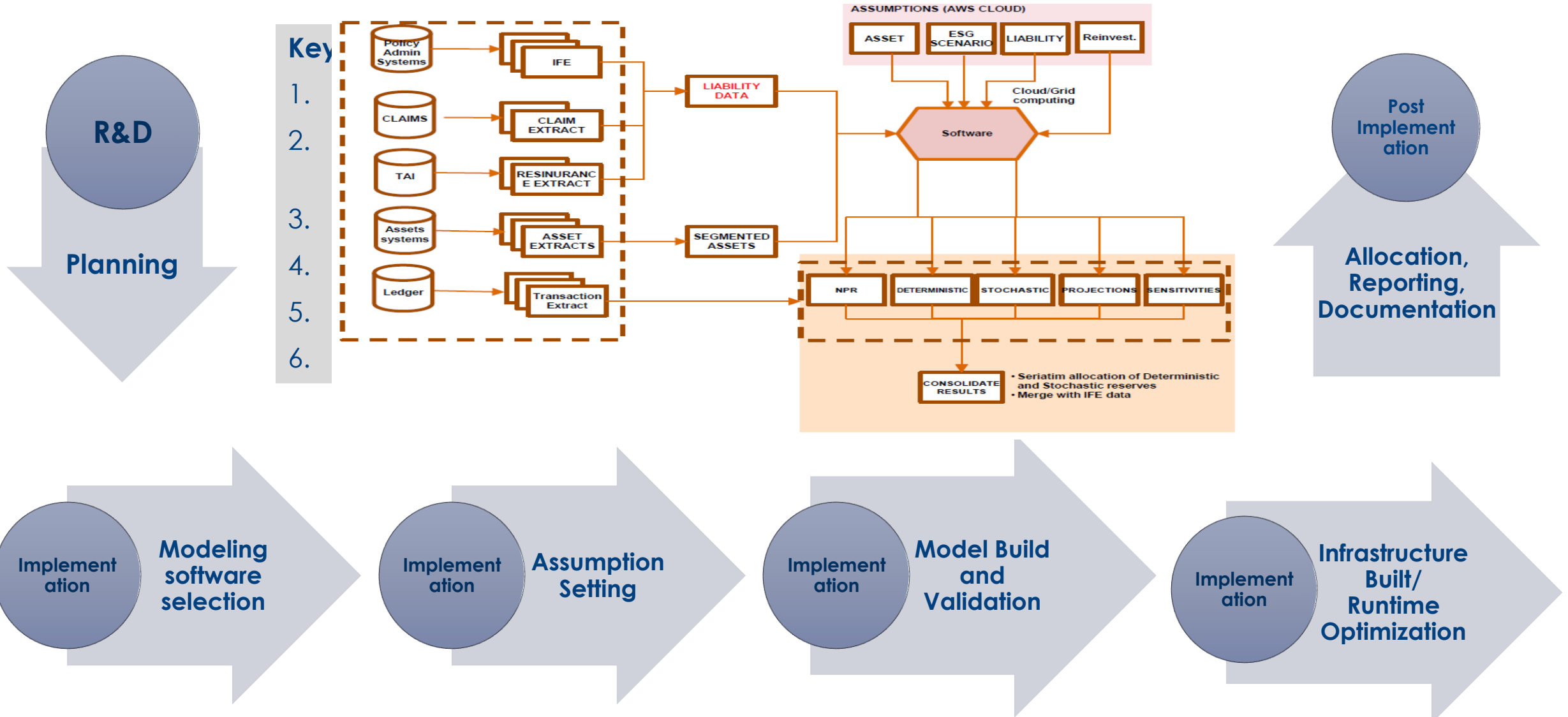
Deterministic Reserve
A gross premium reserve that uses the company investment strategy under a prescribed economic scenario. Present values use discount rates based on projected net earned rates.

Stochastic Reserve
The CTE70 of Scenario Reserve over a set of stochastic scenarios. The Scenario Reserve is a greatest present value of accumulated deficiency calculation (GPVAD).

- VM-20 is prospective, applying to new business
- Model Reserve uses a combination of entity specific prudent estimate and regulatory prescribed assumptions
- Exclusion tests can provide relief from having to calculate the deterministic and stochastic reserve
- Small companies may be exempted from PBR

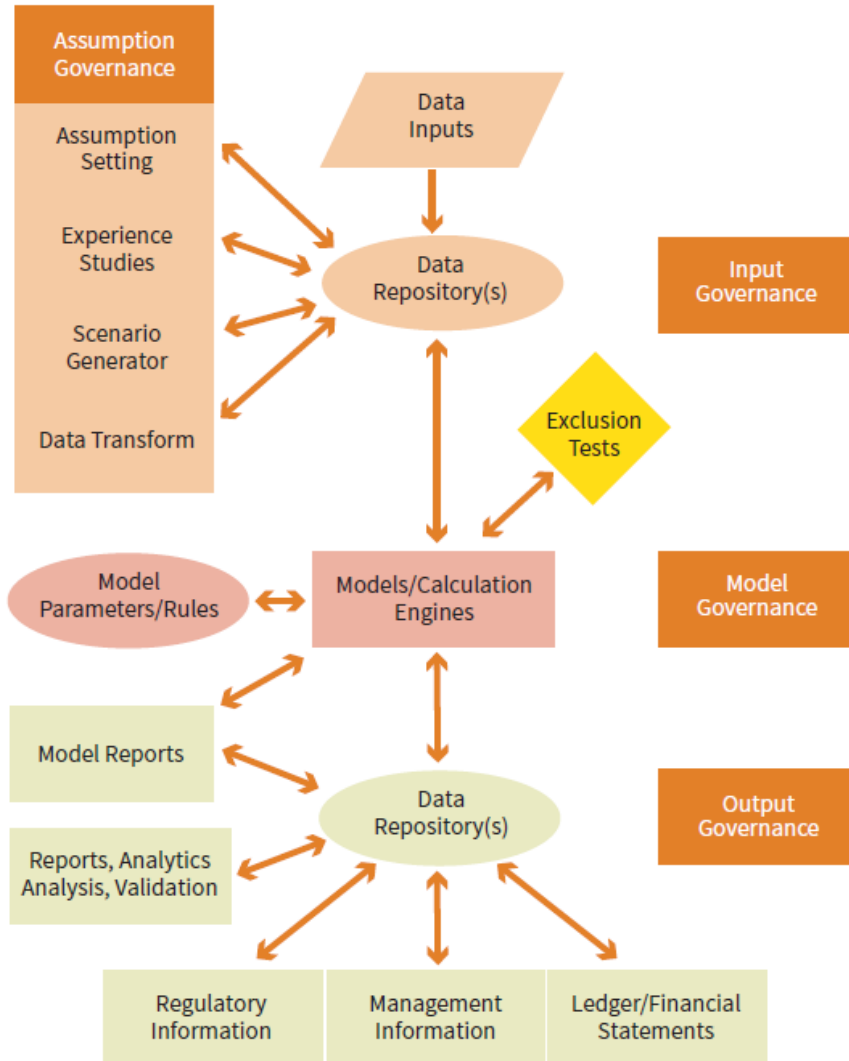
PBR Implementation Consideration

Leverage communication and coordination to drive a more focused implementation experience



PBR Modeling Consideration

The modeling environment should also allow the establishment of a development/ testing & a production environment



Key considerations:

1. Complexity of the process: Projection models will calculate these VM-20 reserves at the model start date and at each future period via different assumption sets.
2. Identify risk & establish best practice
3. Runtime concern and simplification techniques
4. Support the downstream reporting and produce meaningful financial results with consideration of a balance of practicality

POTENTIAL OFF-CYCLE ACTIVITIES (NOT DURING FINANCIAL CLOSE) INCLUDE

- Perform exclusion tests.
- Set assumptions (reflecting a policy regarding frequency and updating).
- Run experience studies.
- Perform assumption sensitivities.
- Perform some validations and audit activities.
- Document.

PBR Reporting

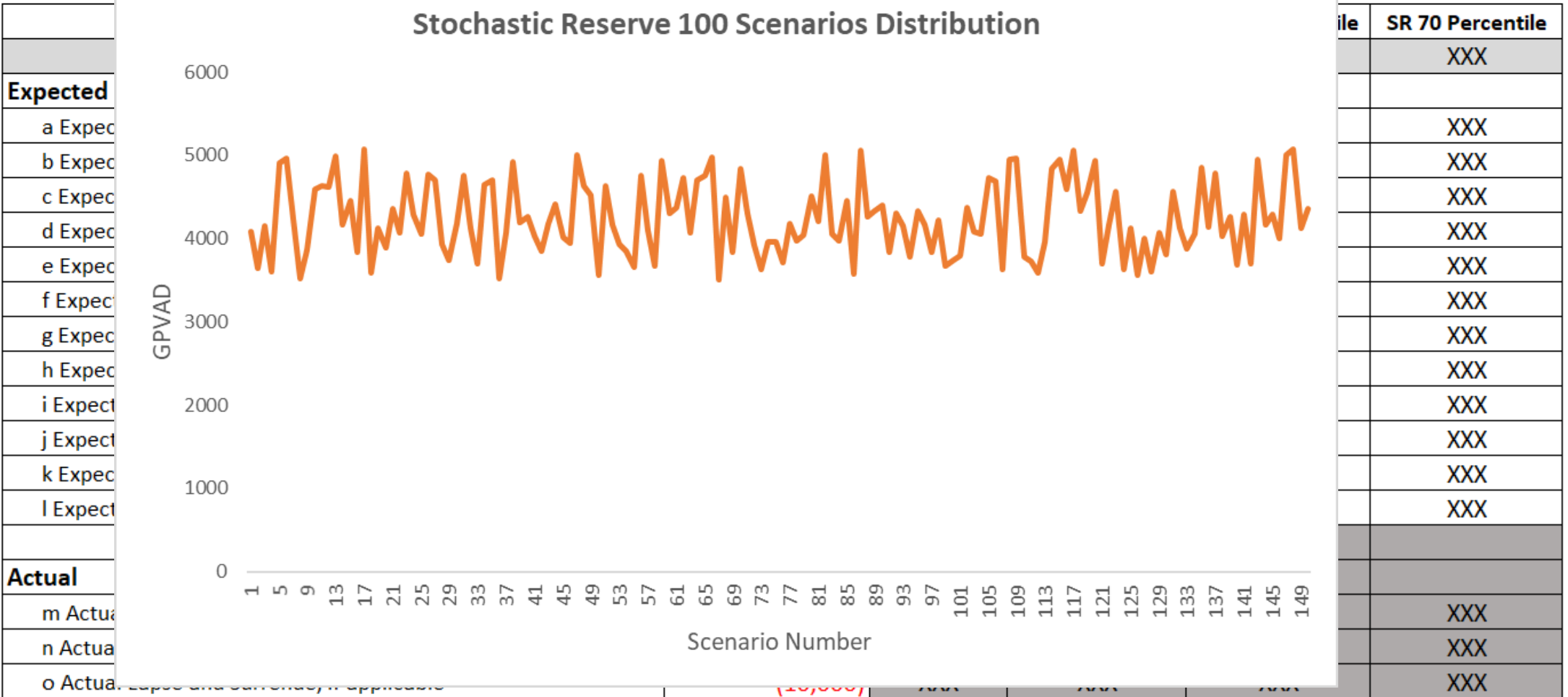
A balance betwe

Section I: Actual Reserve Rollforward

**Not that DR calc is based on 5yr term example in the workbook*

	NPR	DR	SR
1. BOP Reserve Balance	35,000	40,000	42,000
2. Actual Reserve Movement			
3. BOP Balance on Death	(8,000)	(0.142)	(0.500)

Section II: Expected Cash Flow for Data Development



l Expected			
m Actual			
n Actual			
o Actual			
c Expected variation interest on reserve	1,440	1,440	N/A
d Expected Continuing policies	N/A	7,055	N/A

Thank you!



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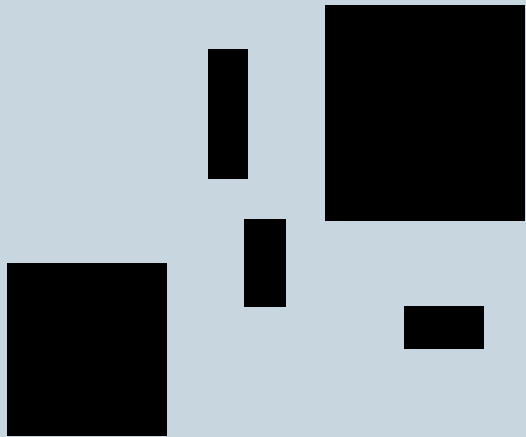
- Assumptions

- Reinsurance

- Pricing and Product Design

- Moving Forward Under VM-20

Lessons Learned: Assumptions



Mortality Assumption Impact

A focus on credibility

- The credibility of your company experience dictates
 - Margins on your anticipated experience assumption
 - How long a company can delay blending to the industry table
- Companies with a lot of relevant experience
 - Have lower margins on the assumption
 - Delay grading to the industry table
 - Likely have less volatility in reserve results (a year of poor experience is mitigated by prior experience)

Potential Challenges

Mortality: Appropriate amount and type of experience

Balance between

- Using all available experience (to increase credibility and sufficient data period)
- Using experience that is relevant to the particular block of business

Questions to determine the relevance of available experience

- Similar risk class structure?
- Similar underwriting era?
- Any significant underwriting concessions during data period?
- Similar product design?
- Similar distribution channel?
- Should conversions, PLTP, and/or other special business be included?

Potential Challenges

Mortality: Projecting

The assumption will change as your company collects experience

- Credibility will improve as the company collects more claims data
- Sufficient data period will also be increasing
- Additional years of historical mortality improvement will be allowed

Considerations in how to project the assumption

- What is a reasonable estimate of future claims experience? Best estimate mortality?
- What changes will be necessary to the inner and outer loop projection?
- How material are these changes to my profit metrics?
- What simplifications can be made?

Potential Challenges

Mortality: Business other than FUW

The current VM-20 guidance is focused on FUW business

- Only some GI business is excluded from the VM
- Guidance is still pending for other GI business and SI business
- Accelerated underwriting creates new challenges in developing your prudent estimate assumption

Actuaries must use their judgement for non-FUW

- Actuaries are left to determine what is a reasonable interpretation of the current VM, proposed amendments, and intention of the VM
- Multiple, technically correct, interpretations of the regulation may exist
- Something must be assumed, strong justification and documentation will be very important

Potential Challenges

Other assumption challenges

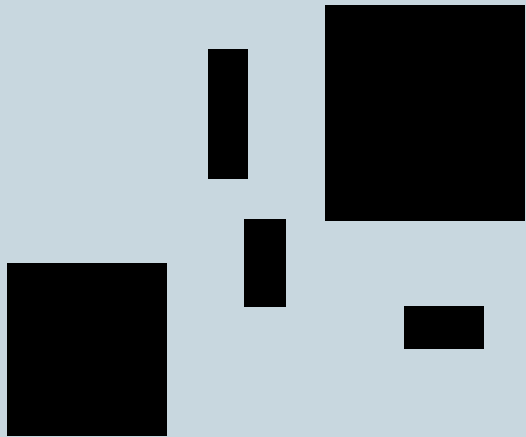
Experience studies

- Processes and methods need to be overhauled in many cases
- Better process governance and auditing
- Addition of new features such as VM-20 approved credibility methods

More consideration given to other liability assumptions

- Premium assumptions – some of the common industry practices do not fully capture lapse without value
- Non-guaranteed elements such as COIs, interest rate spreads, what is a reasonable assumption?
- Margins, where not prescribed, will need to be justified
 - Best practice includes statistical analysis to support margin setting
 - Using statistical analysis may help support the reduction of margins as more experience emerges

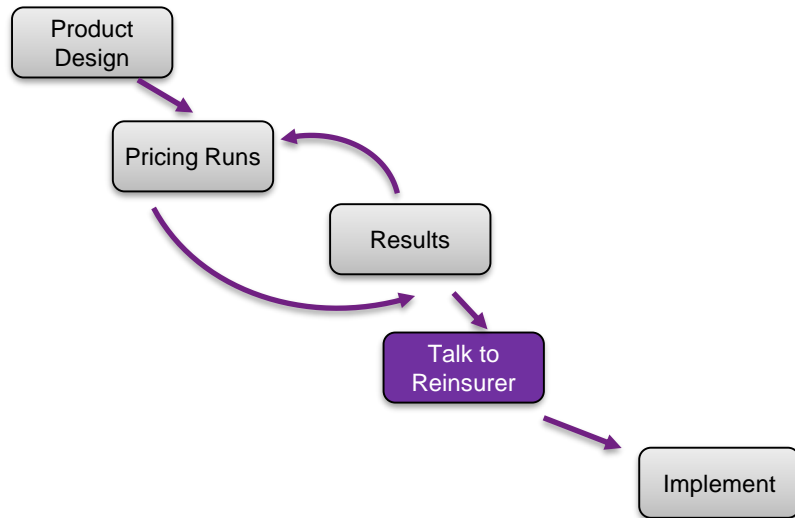
Lessons Learned: Reinsurance



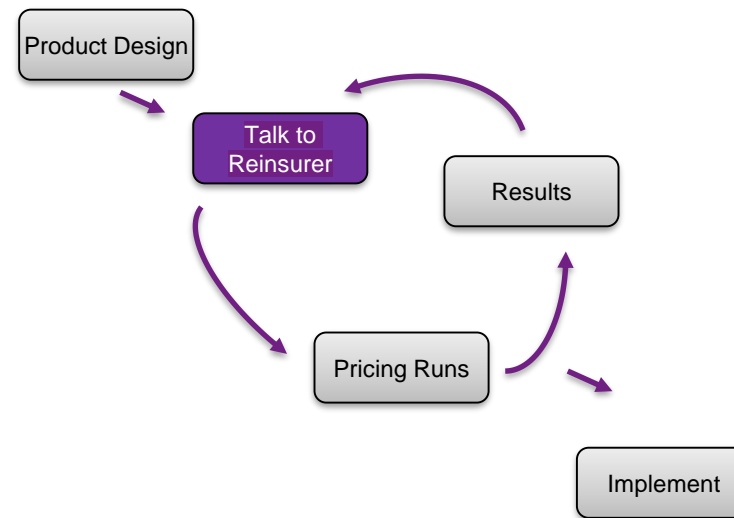
Reinsurance

- Reinsurers will need to be part of the product development process early on
- Reinsurance agreements will have an impact on the balance sheet

Pricing Process: Pre-PBR



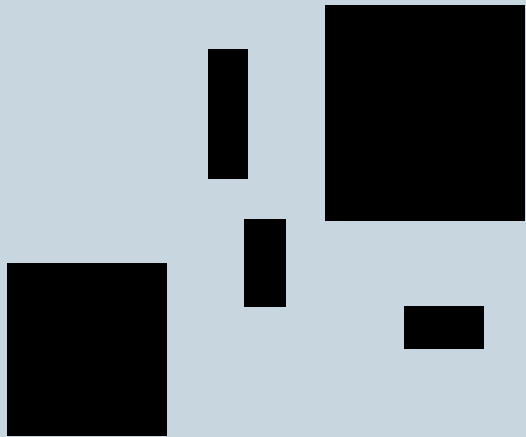
Pricing Process: Under-PBR



Source: Hasham, Amburn, Yang "Redefining the Role of Reinsurance in a PBR World", *Reinsurance News Issue 92*, November 2018

- The appropriate treatment of YRT non-guaranteed elements under VM-20 is an area of considerable debate in the industry.
- Field testing of proposed amendments addressing YRT is underway.

Lessons Learned: Pricing Product Design

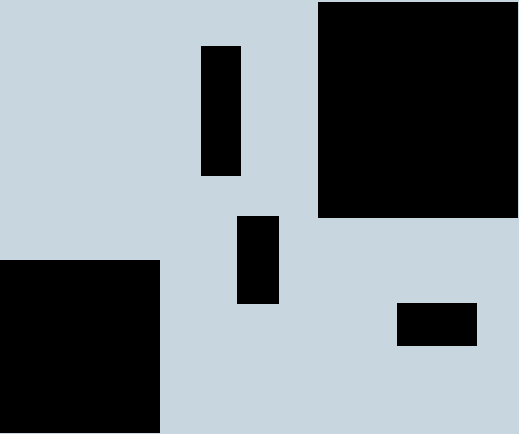
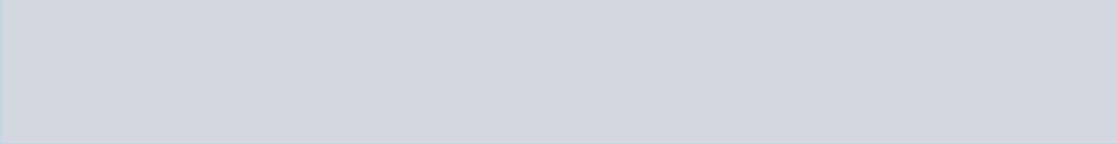


Pricing and Product Design

- PBR reserves are dependent on gross premium
 - Pricing process becomes even more iterative with the modeled reserve components
- PBR introduces additional distribution risk across pricing cells
 - Aggregate reserves may have cells that offset each other
 - Additional sensitivity tests on distribution risk should be modeled

- Many companies will need to first get comfortable with VM-20 reserves before redesigning products begins
 - Will ULSG products become less complex?
 - The modeled reserves limitation on post level term profit may drive rethinking term product structures

Moving Forward Under VM-20



VM-20: A Work in Progress

- The pace of amendments to the VM-20 has not slowed as the mandatory adoption date approaches; Companies need to be conscious of the shifting VM-20 landscape
- Clarification is still pending on key elements of including the modeling of YRT reinsurance

Key changes to the 2020 VM:

- The industry continues to seek clarification on aggregation for credibility in mortality assumption setting. Additional guidance on acceptable approaches for aggregation was added to the manual.
- Requirement that the testing for PLT profits be done on a seriatim, not aggregate, basis.
- The reserve credit for YRT in the modeled reserves has been set to $\frac{1}{2}$ Cx as a temporary measure.
- The NPR for assumed YRT business has been defined as $\frac{1}{2}$ Cx.
- Mandates testing to confirm that the company's prudent estimate assumption is not worse than the industry table it grades to. If worse, the industry table assumption must be adjusted upwards.
- Numerous changes addressing the perceived lack of uniformity in PBR reports reviewed by the VAWG.
- For GI business the prevailing CSO table has reverted to the 2001 CSO Ultimate, rejecting the previous adoption of the 2017 CSGI table.

Other Continuing Discussions for VM implementation:

- **Field testing for the amendments on the treatment of YRT reinsurance in modeled reserves is under way.**
- Many additional changes addressing the perceived lack of uniformity in PBR reports reviewed by the VAWG.
- **New York has released proposed language adding PBR to Regulation 213.**

Conclusions

Staying competitive under VM-20

- If your company has not yet completed VM-20 adoption do not underestimate the time and effort required
- As companies get comfortable with VM-20 they will turn to product design opportunities; this is a chance to rethink prior product design “innovations” driven by reserve regulations
- VM-20 is still a moving target – even now a large number of pending amendments and robust discussions are taking place; the pace may not slow as broader adoption introduces new issues
- Larger blocks of business, with presumably better credibility, will frequently have a pricing advantage
- Managing and understanding volatility will be critical under VM-20

Questions



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