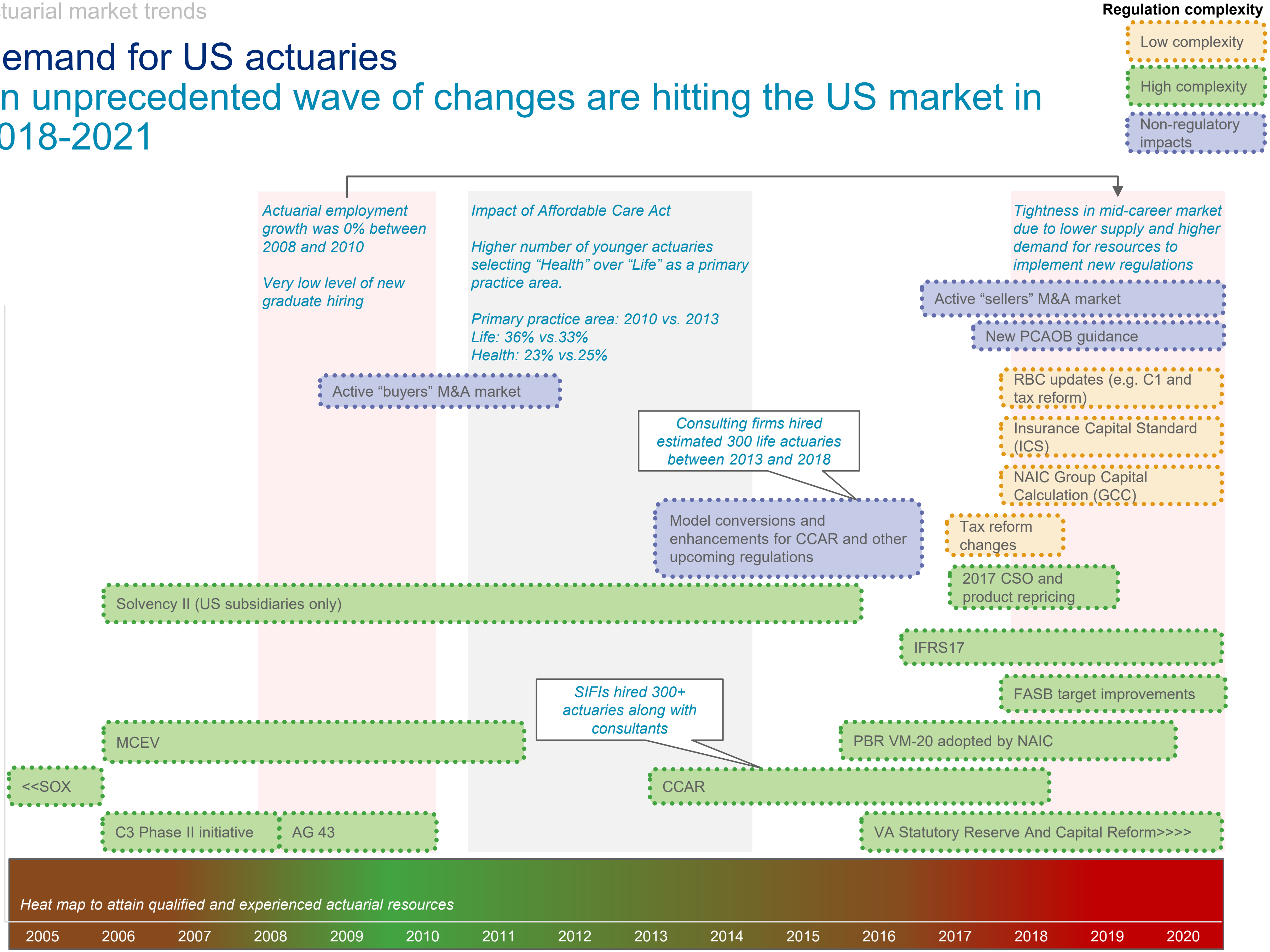
LONG DURATION GAAP TARGETED IMPROVEMENTS

ACHS SPRING MEETING MAY 14, 2019

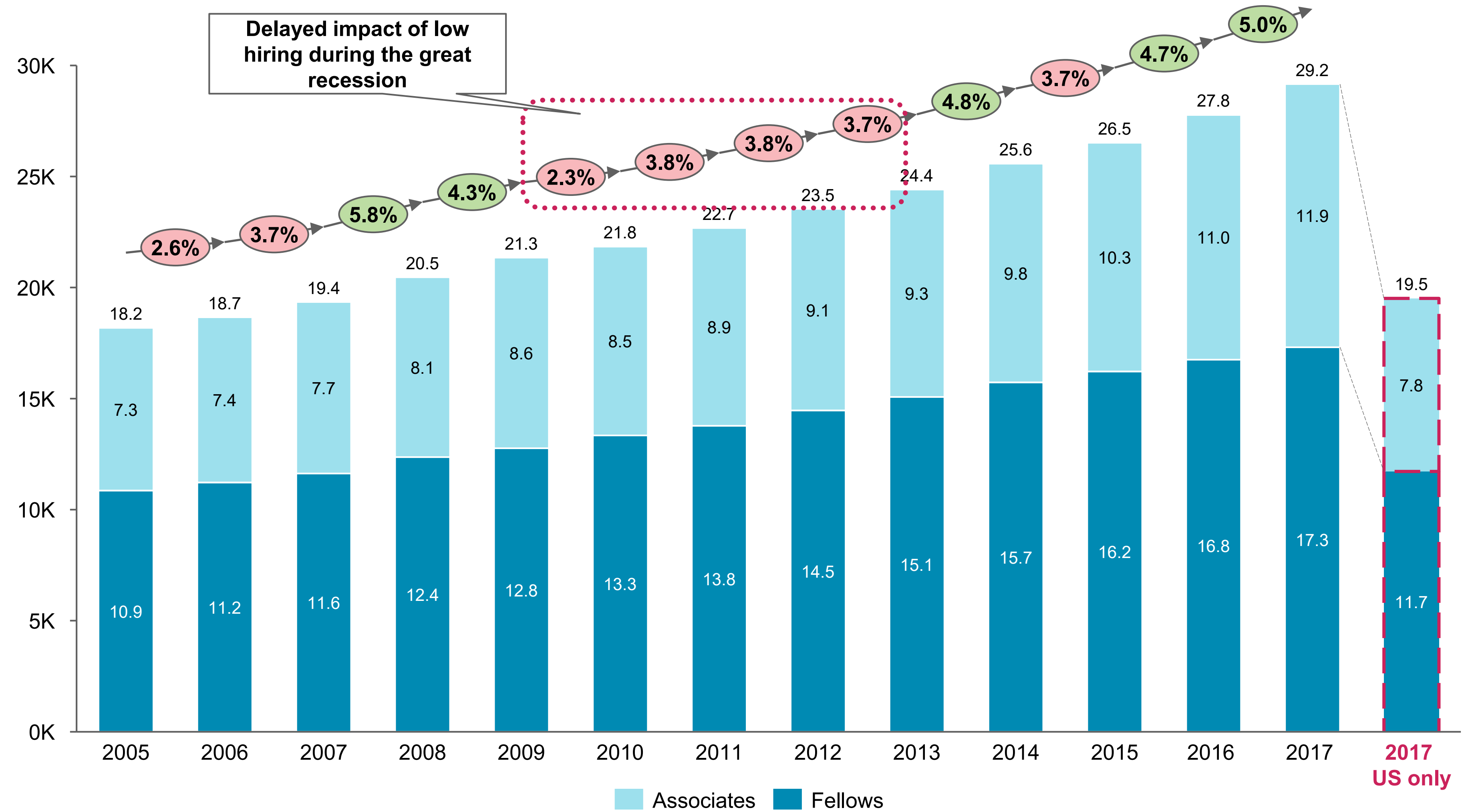
Rob Winawer, FSA MAAA

Demand for US actuaries
An unprecedented wave of changes are hitting the US market in 2018-2021



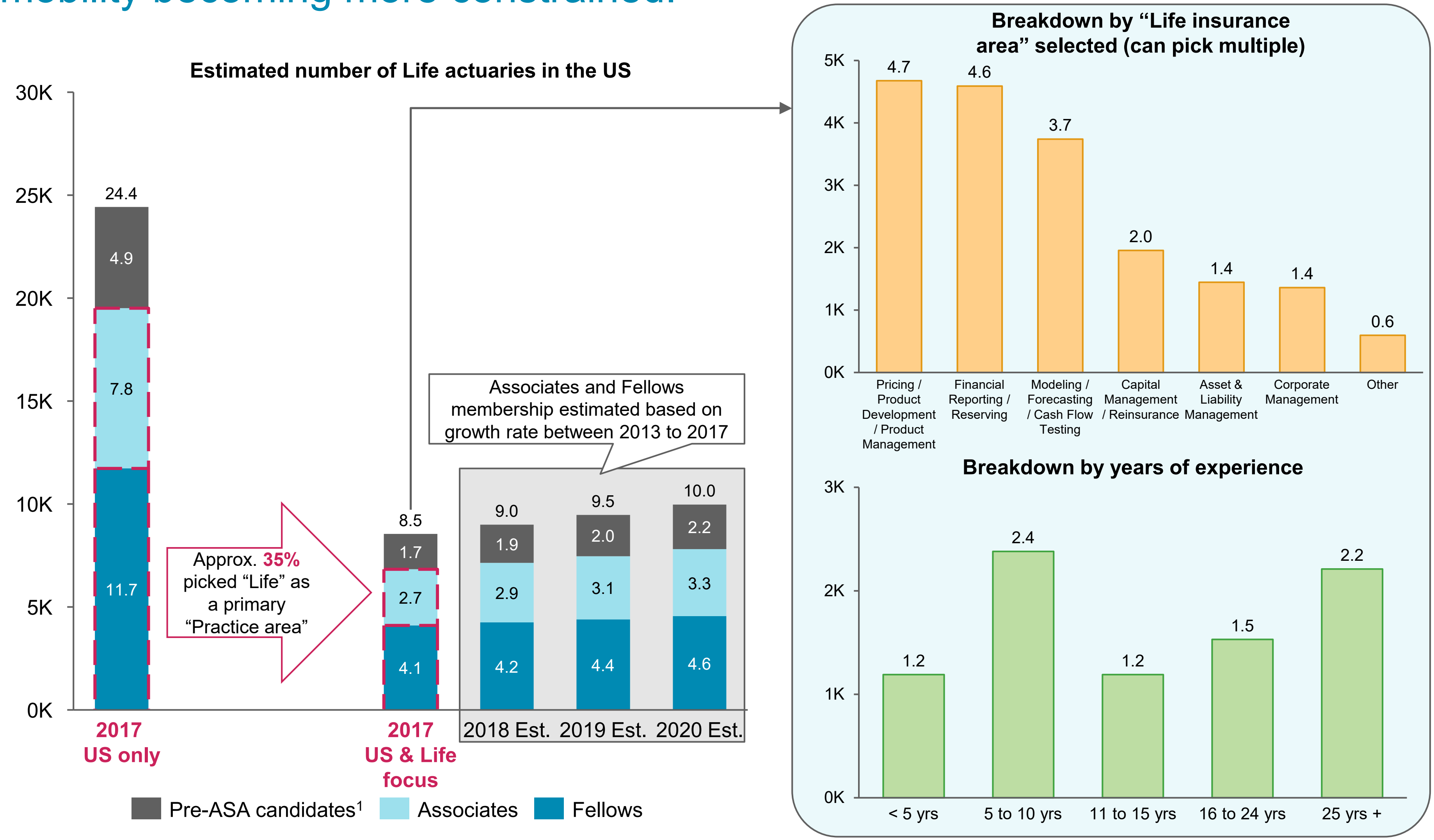
Total SOA membership

Worldwide SOA membership has grown between 2% and 5%. Supply of qualified actuarial talent lags demand and does not respond short term.



Estimated supply of “Life” actuaries across the US

Organic growth of ~450 “Life” actuaries is expected in the US. International mobility becoming more constrained.



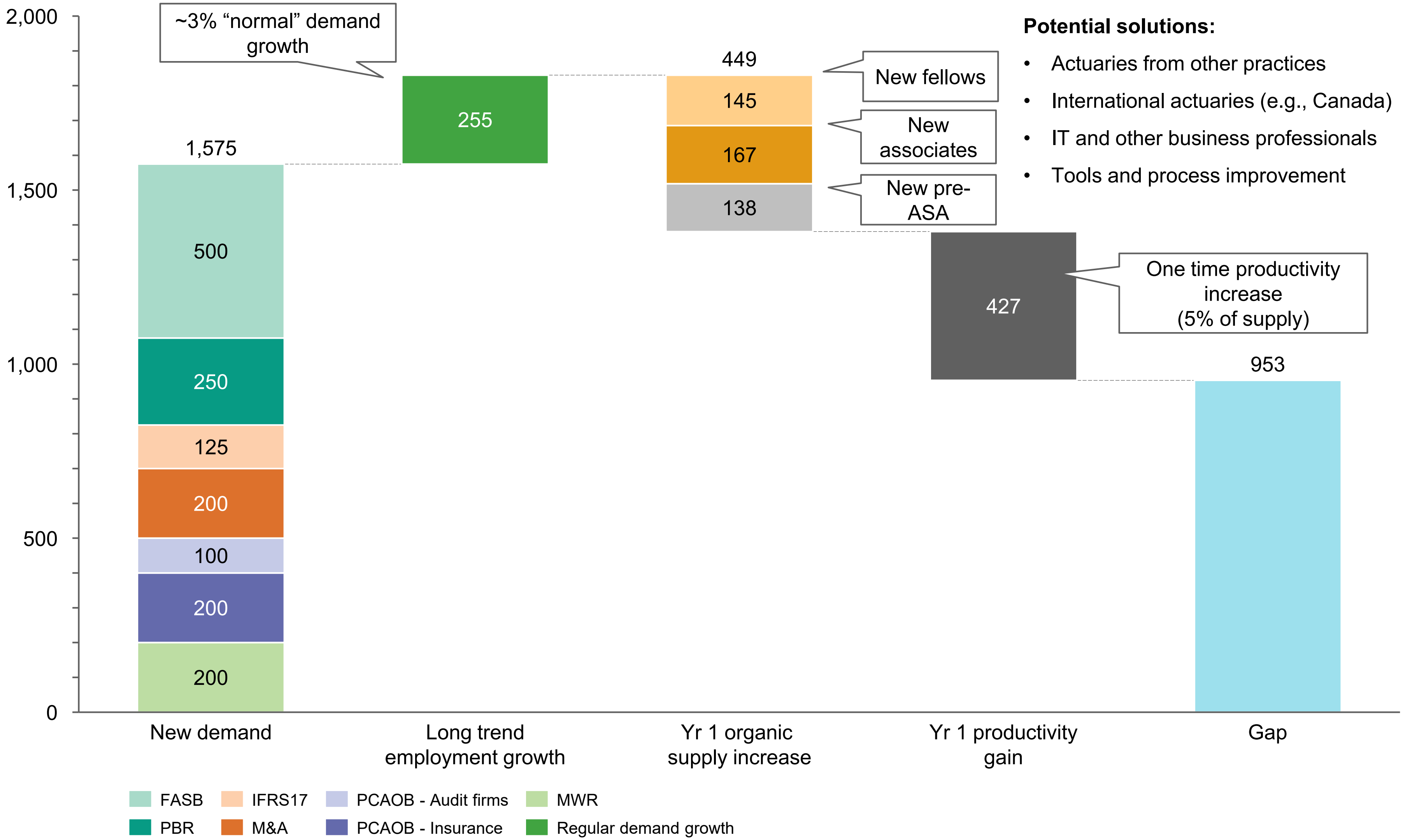
1 Pre-ASA candidates are estimated based on number of students graduating from US schools; source EIU estimates, Bureau of Labor Statistics
2 Estimated based on study from 2013

Estimated demand for “Life” actuaries across the US
Approximately 1,600 additional “Life” actuaries will be needed in the US over the coming year

	Demand driver	Expected demand FTEs	Rationale
1	FASB	500 FTEs for two years	Estimated 20 companies with 25 FTE/year each
2	PBR	250 FTEs for two years	Estimated 40 companies with 6.25 FTEs each for catch up (reference Oliver Wyman survey of PBR writers)
3	IFRS 17	125 FTEs for four years	Estimated 10 companies with 12.5 FTEs each
4	M&A	200 FTEs short term	Expecting more deals in the short term than typical (based on Oliver Wyman M&A work)
5	PCAOB - Audit firms	100 FTEs indefinite	25 additional FTEs each for the big four auditing firms to address requirements from Protecting Investors through Audit Oversight (PCAOB)
6	PCAOB - Insurance	200 FTEs indefinite	Twice the audit firm resources required to address all questions and make required modifications
7	Other GAAP	200 FTEs indefinite	Improvement and remediation in actuarial controls
	Total	**1,575 FTEs**	**Peak additional demand of nearly 1,600 actuaries**

Gap between supply and demand for "Life" actuaries

The is a ~1,000 gap in qualified actuaries. We are seeing evidence of a "race for talent" and rising costs for top talent.



Potential solutions:

- Actuaries from other practices
- International actuaries (e.g., Canada)
- IT and other business professionals
- Tools and process improvement

GAAP TARGETED IMPROVEMENTS
A TECHNICAL OVERVIEW

MAY 14, 2019

Rob Winawer, FSA MAAA

MARSH & McLENNAN COMPANIES

GAAP Long Duration Targeted Improvements objectives
Revisions to simplify and enhance financial reporting

1. **Simplify amortization of deferred acquisition costs**

2. **Improve timeliness by recognizing changes in expected traditional and limited pay future liability payments**

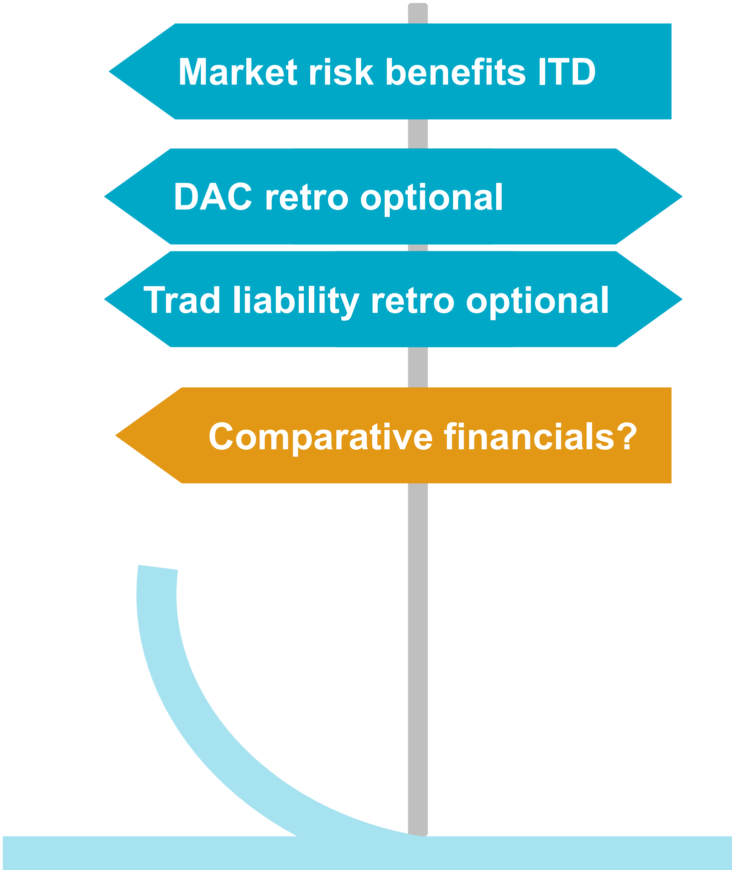
3. **Simplify reporting of market-based guarantees through consistent fair value accounting**

4. **Enhance effectiveness of required disclosures**

What’s changing?

	DAC	Traditional liabilities	Market risk benefits	Disclosures
Term, WL, and LTC/DI	✓	✓	✗	✓
SPIA and Payout	✓	✓	✗	✓
FIA, VA	✓	✗	✓	✓
UL, DA, IUL, and VUL	✓	✗	✗	✓
Short-duration	✗	✗	✗	✗

One key choice for transition is whether to retroactively restate DAC and traditional liabilities on the opening balance sheet



Public companies start reporting 3/2021

Market risk benefits are remeasured inception to date

- Profit of hindsight allowed if data is lacking

Default transition approach for other than market risk benefits starts with existing balances

- Adjustment made for interest rates through AOCI
- Prospective transition using current assumptions

Companies have an alternative option to retroactively restate DAC and traditional liabilities

- Retroactive true up recorded through retained earnings
- Balances also adjusted for interest rates through AOCI
- Entity-wide issue year based decision
- Actual historical data required, which will challenge many companies

Addressing the need for comparative financials is not mentioned in ASU 2018-12

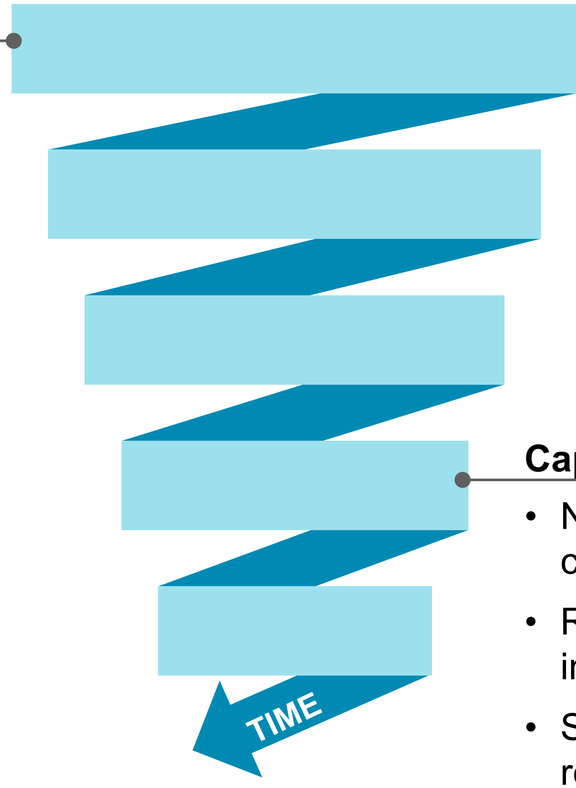
- Transition starting with the 1/1/2019 will allow for two years comparative financial data, but produces an overlap to actual reported

Some companies will find the transition balance sheet to be an opportunity to reshape financials

Capitalized costs now recognized using “straight-line amortization”

Amortization

- Amortized over expected term without interest
- Performed at individual contract level or may be grouped as long as it approximates individual
- Negative experience variance must be recognized immediately, positive are optional
- Assumption revisions recognized prospectively
- Shadow DAC no longer applies
- No longer subjected to impairment testing



Capitalization

- No change to definition of what’s capitalized
- Recognized for capitalization only after incurred
- Sales inducements and unearned revenue treated similarly except in scope for impairment testing

Grouped approach most popular and is subject to company and auditor discretion

Liability changes for traditional and limited payment contracts

		Financial line item impacted	Targeted improvements	Prior standards
1	**Assumptions**	Earnings as re-measurement	• Best estimate assumptions with no PADs • At least annual review of assumptions with unlocking	• Original assumptions with PADs locked-in at issue
2	**Discount rate**	Other Comprehensive Income	• Upper-medium grade fixed-income instrument yields updated quarterly • Original discount rate part of all future calculations	• Similar to other assumptions, locked-in at issue • Based on company's earned rate
3	**Net premium ratio**	Earnings	• Excludes maintenance expenses • Original rate discounting • Sufficiency test at cohort level through net premium ratio 100% cap	• Includes maintenance expenses • Impairment testing performed at the aggregate block level including DAC

Impairment testing at the more granular cohort level increases likelihood of recognition event

Fair value of guarantee benefit lifecycle

Measurement phases

Fair value is simpler than the previous mixed approaches and more conducive to hedging

AT INCEPTION

Multiple market risk benefits are combined

Fair value will not always be zero

SUBSEQUENT

Can be negative (an asset) or positive (a liability)

Net profit from unused charges, behavior variances, volatility, and risk premiums

Instrument specific credit risk changes reported through other comprehensive income

DERECOGNITION

Deferred profit liabilty posted or loss recognized for market risk benefit in excess of liability

Gain results rarely for "non-performance“

Other comprehensive income is released

The new standards promote transparency and reduce conflicts between economic and GAAP priorities for ALM

Financials will become significantly more transparent
Example: Traditional products

Quarterly disclosures

- Disaggregated year-to-date liability roll-forward reconciled to income statement
- Disaggregated year-to-date DAC roll-forward reconciled to balance sheet
- Undiscounted expected future cash flows
- Actual experience compared to expected
- Amount of revenue and interest recognized
- Related reinsurance recoverable
- Weighted average liability duration
- Weighted average interest rate and method used
- Quantitative and qualitative information about net premiums capped at gross premiums

Additional annual disclosures

- Nature of deferred costs and information about inputs, assumptions, judgement, and methods used
- Information about inputs, assumptions, judgement, and methods used to measure liabilities for policy benefits and the effect of those changes on measurement

Other reporting considerations

- Liability remeasurement is a new line in the income statement, separate from disclosures in the notes
- Disaggregated liability and DAC roll-forwards from ending balance before transition to opening balance of earliest period presented on new standards
- Elective retrospective transition effects shown separately from mandatory “modified retrospective” application
- Qualitative and quantitative information about transition adjustments to retained earnings and AOCI, net premiums exceeding gross premiums, and premium deficiencies

Expanded and auditable actuarial inputs to financials require stronger infrastructure
Additional transparency may earn the industry higher average P/E

Financials will become significantly more transparent
Example: Market risk benefits

Quarterly disclosures

- Disaggregated DAC roll-forward including capitalization, amortization, and termination
- Disaggregated account balance roll-forwards along with average credit rates, cash values, buckets by guarantee and amounts in excess of guarantee
- Disaggregated market risk benefit roll-forward similar to fair value requirements including variances in: interest, equity, market volatility, actual behavior, and projected behavior. Asset and liability positions reported separately and guarantees in excess of account value shown

Additional annual disclosures

- Nature of deferred costs and information about inputs, assumptions, judgement, and method of amortization
- Information about inputs, assumptions, judgement, and methods used to measure liabilities market risk benefits and the effect of changes on measurement

Other reporting considerations

- Market risk benefits presented separately on the balance sheet and income statement with instrument specific credit risk below the line
- Disclosures must be in a manner that allows users to understand the amount, timing and uncertainty of future cash flows arising from the liabilities
- Groupings consider how information has been presented for other purposes, do not aggregate amounts from different reportable segments, and do not make disclosures for insignificant categories except in the reconciliation

Expanded and auditable actuarial inputs to financials require stronger infrastructure
Additional transparency may earn the industry higher average P/E

FASB Long Duration Targeted Improvements (FASB TI) Implementation & Strategic Implications

May 14, 2019

Steve Tizzoni, Actuarial Regulatory & Methodology

Agenda

1 **Operational & Implementation Considerations**

2 **Strategic Considerations - Hedging**

3 **Strategic Considerations - Pricing**

1 All Life/Annuity Business Has Been "Targeted" by Targeted Improvements

Product Group / Item	Significance of Changes	Primary Operational Impacts
Traditional FAS 60 Life & Annuity		- Annual or more frequent assumption & projection updates - Detailed reserve calculation requiring significant granularity in actual cash flow items and projected future cash flows - Gross & Net of reinsurance - Quarterly update of discount rate to single A curve through OCI
Variable Annuity – Market Risk Benefits (MRBs)		- Similar to Embedded Derivative valuation under current FAS 157 (ASU 815), but requires significant additional granularity - Requirement to calculate historical net premium ratios by issue year and product group for ALL MRB Business! - Significant data requirements, so may need to consider practical expedients
DAC amortization		- Seriatim straight-line DAC calculation is standard in ASU 2018-12 - Aggregate methods can be used, but must be shown to approximate seriatim straight-line DAC amortization
Disclosures		- Significant increase in disclosure requirements - Rollforward of Actuarial Balances will require significant actuarial analysis
FAS 97 UL business		- Updates to URL methodology – no more projected deferrals - Updates to impairment testing and removal of shadow DAC
Two years of historical comparative financials		- Need to perform full set of comparative, audited financials, including full execution of SOX compliant controls

1 Key Challenges of FASB TI Program Implementation

Key Challenges	Considerations

Full Modernization vs. Smart Compliance	- Determine implementation strategy
	  - Smart compliance OR
	  - Modernization (e.g. automated model build, rollforward creation, automated ledger/subledger population, etc.)
	- How would 1-2 year delay change the strategy?

Timeline (1/1/2021)	- Very challenging without FASB delay - Requires **<u>dedicated</u>** resources from multiple disciplines to meet timelines - Extensive project management - Ownership at lower levels in the organization of key sub-projects

Eight Quarters of Comparative Financials	- Desire to perform parallel closes 1-2 quarters before “go live” date to mitigate implementation risk
	  - Extremely difficult for Valuation team to perform 2 parallel closes
	  - Dedicated FASB LDTI implementation team

1 Traditional Business

Key Challenges	Considerations
Granularity of Cohorts	Significant increase in granularity for projections & actuals - Ensure actuarial projection models can handle requirements - Ensure actual death benefits and premiums are stored at the required level of granularity - Manage data flows in an automated fashion
Assumption Updates	Significance of assumption update for current FAS 60 business - Affects timing and audit of assumptions - Consider granularity of cohorts when setting assumptions
Data Requirements	Clearly define data requirements and partner with IT / Data teams - Very important to have clear ownership of FASB LDTI data Data management strategy is key given large volume of data

1 Market Risk Benefits

Key Challenges	Considerations

Development of Attributed Fees	- **Full Retrospective** calculations are required
	- Attributed fee calculations needed for each product type / issue year cohort, requiring:
	    - Risk Neutral Scenarios / Market Parameters
	    - Inforce Files
	    - Best estimate assumptions
	    - Risk margins

Inforce File	- Pricing Cell Approach
	    - Use representative cells instead of actual point-of-sale inforce file
	- Ratio Approach
	    - Leverages current attributed fees for GMIB/GMWBs to estimate compound MRBs (GMDB benefits)

Assumptions	- Pricing documents are best source if available - Consider using oldest available pricing assumptions for prior business without documentation
Scope	- Annuity purchase guarantees may have other than nominal capital market risk and hence an MRB - Insurers have seen very low levels of historical utilization and may have used simplified modeling that would not be appropriate when valued as an MRB

1 Disclosures

Key Challenges	Considerations

Auditable Data Storage	- Need to plan for auditable data management process for disclosures
	    - Managing in Excel is no longer acceptable
	
	- Subledger based solutions are worth consideration
	    - Storage for actuarial balances and disclosure elements
	    - Tie out to General Ledger
	    - Drill down audit capability

Actuarial Rigor	- Valuation actuaries are used to doing robust movement analysis for actuarial balances. FASB TI creates additional complexity:
	    - Full audit of disclosure; no longer just supporting analysis
	    - Required actual to expected analysis at high levels of granularity

1 Key Operational Considerations for DAC / URL / SIA

Key Challenges	Considerations

Seriatim vs. Grouped	- Consider developing seriatim DAC amortization model. Benefits include:
	  - Increased automation
	  - Easier analysis for management reporting & disclosures
	  - No need to defend grouping-based methodology as approximating seriatim approach

Amortization Basis	- Select amortization basis similar to straight-line
	  - Face amount or policy count for Life insurance
	  - Benefit Base or policy count for Annuities
	  - Consider minor strategic or operational advantages

Future Deferrals	- Potential to change pattern of DAC / URL / SIA amortization depending on product design - Strategic considerations discussed on later slide

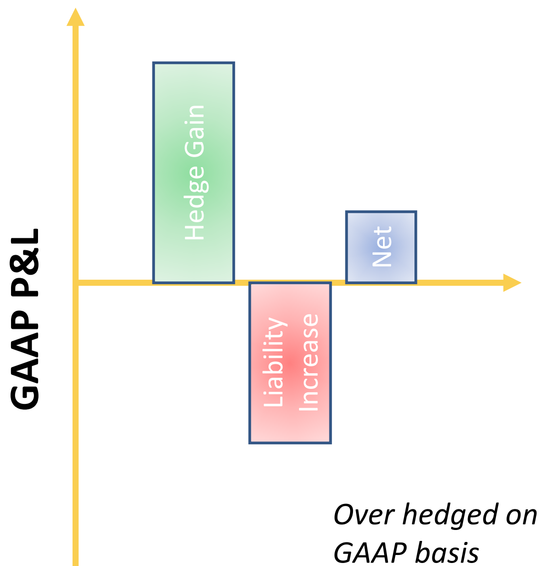
2 Strategic Considerations – Hedging MRBs

Variable Annuities: Fair Value Accounting for GMDB and GMIB products

- *Significant increase in sensitivity to capital markets*
- *Some capital market variables are typically hedged (equities, interest rates)*
- *Some typically not hedged (credit spreads, implied equity volatility)*

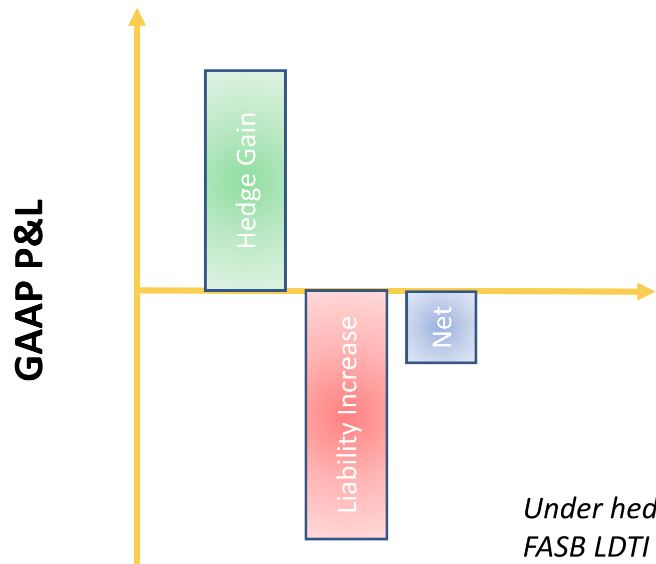
Example: Consider a VA product with GMDB (SOP 03-1) & GMWB (FAS 157) hedged to VACARVM

Current GAAP: 10% equity drop



Over hedged on US GAAP basis

LDTI GAAP: 10% equity drop



Under hedged on FASB LDTI basis

2 Strategic Considerations – Hedging MRBs

Is the Company comfortable with its current hedging strategy and the resulting GAAP Income Statement / Balance Sheet volatility within the FASB LDTI framework?

Accounting Base(s) for Company Hedge Target

- Moving to FASB LDTI basis will likely increase sensitivity to interest rates for VA w/ GMxB products. Potential implications to hedging strategy or hedge targets

Over/Under Hedged on FASB TI Basis & Shareholders / Management Desired position

- Some investors invest in the insurance sector for interest rate and / or equity exposure and may therefore prefer less than complete hedging
- Stock is sensitive to movements in GAAP Book Value, as are debt covenants

Hedge Additional Economic Variables

- 100% GMDB/GMIB/GMWB liabilities at fair value can create meaningful sensitivity to equity and interest implied volatility, which can be expensive to hedge

Non-GAAP Operating Earnings Definition

- Non-GAAP Operating Earnings policy can potentially be used to focus on the underlying business drivers and trend for Non-GAAP Operating Earnings, but not GAAP Net Income

VA product mix

- Consider desired VA product mix in light of GAAP LDTI treatment

3 Strategic Considerations – Pricing

FASB LDTI consideration for UL / VUL products:

1) No reflection of future deferred policy loads and charges in URL balance

- *This can defer the GAAP profitability for products with heaped charges over the early years of the product*
- *Initial URL k-factors will be low until future deferrals are reflected, thus deferring amortization. This is partially offset by removal of interest accretion*

2) Want to ensure timing of GAAP profit recognition is understood and reflected in the product pricing as warranted

URL amortization for VUL product with heaped charges