ALM for Long-Term Insurance

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MOODY'S ANALYTICS

Agenda

1. What is ALM?
2. ALM for Insurers – The Basics
3. Setting the Stage for Complex Assets
4. Modern ALM Models and Approaches

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What is ALM?

Asset-Liability Management (ALM)

- “Asset/liability management is the process of managing the use of assets and cash flows to reduce the firm’s risk of loss from not paying a liability on time” – Investopedia

- Mitigating financial risk resulting from a mismatch of assets and liabilities

Key ALM Risks

- Financial Risk
  - Asset-side Risk
    - Market Risk
      1. *Asset Price Risk*
      2. *Interest Rate Risk*
      3. *Inflation Risk*
      4. *Exchange Rate Risk*
    - Credit Risk
    - Liquidity Risk
  - Liability-side Risk
    - Underwriting Risk
    - Reserve Risk
    - Catastrophe Risk

ALM Framework

- Realistic picture of all cash flows
- Long- and short-term focused
- Long-term profitability and stability
- Maintains liquidity and credit quality
- Ensures sufficient capital
- Documented policy and risk tolerance and continuously monitored
- Expansive, holistic, and challenging!

2

ALM for Insurers:
The Basics

The Basics of Asset Liability Management (ALM)

- Build and/or acquire liability and asset modeling platform(s)
- Project liability and asset cash flows into the future
- Run business under many scenarios
- Analyze, report, and act on results

ALM Modeling Systems

- Establish corporate cash flow model
- Cash flows built up from scratch
- Model assets or use EPAs
- Generate or import economic scenarios
- Run model under multiple scenarios, applications; summarize results
- Report results – company-specific or statutory

One System vs. Separate Systems

SEPARATE SYSTEMS
FOR LIABILITIES AND ASSETS

- Actuarial modeling platform for liability cash flows
- Separate asset modeling platform for asset cash flows
- Combine asset and liability cash flows in either the system used to project liabilities, or the system used to project assets, and perform ALM
- Combine asset and liability cash flows in a 3rd system, and perform ALM

SINGLE SYSTEM
FOR LIABILITIES AND ASSETS

- One system to model and project asset and liability cash flows, and perform ALM
- Better overall modeling from a technical standpoint
- More complex models
- More rigor in managing and executing model

One System is Generally Better

SEPARATE SYSTEMS
FOR LIABILITIES AND ASSETS

- Model and project liability and asset cash flows in separate software platforms, and combine after in ALM system
- Allows different functional areas greater independence, and can simplify individual models
- More complex business process
- Harder to capture all interactions
- Leave accuracy on-the-table

SINGLE SYSTEM
FOR LIABILITIES AND ASSETS

- Model and project asset and liability cash flows, generate/import scenarios, and perform ALM in a single actuarial modeling system
- One area can own model
- Simplifies process
- Captures all material dependencies and interactions
- Better, more efficient ALM model

3

Setting the Stage for Complex Assets

Recent Private Equity Purchases of Strategic Asset Management and/or Legacy Life Insurance and Annuity Blocks

Jan 2021 – Blackstone/ Allstate
Blackstone purchased Allstate Life Insurance company for $2.8B providing Allstate with additional capital

Feb 2021 – KKR/ Global Atlantic
KKR acquired Global Atlantic valued at $4.7B places $90B assets under KKR management

Mar 2021 – Apollo/ Athene
Since 2012, Apollo received lucrative fees for Athene asset allocation services. Now merged with $11B stock deal

July 2021 – Blackstone/ AIG
Blackstone purchase 9.9% of AIG Life & Retirement business as equity stake for $2.2B along with strategic asset management

July 2021 – 6th St/ Talcott
6th St purchased Talcott which has $90B in liabilities and surplus

Nov 2021 – Blackstone/ EverLake
Blackstone purchased Everlake for $4B from Allstate

Feb 2022 – 6th St/ Principal Financial
Principal Financial offload Life and Annuity business to 6th St freeing up $800M in deployable capital

Mar 2022 – Carlyle/ FortitudeRe
Caryle Group acquired $2.1B equity stake in Fortitude Re along with strategic advisory services agreement

Feb 2023 – MetLife/ Raven Capital
MetLife Investment Management purchased alternative investment solution Raven Capital with $2.1B in assets under management

Feb 2023 – Stone Point Capital/ Lincoln
Stone Point Capital to invest in Lincoln Property Management

Mar 2023 – Aquiline / Genworth
Aquiline and GenStar purchased Genworth Wealth Management for $412.5 M

- Seeking
- Higher
- Returns!

Reinsurance Transactions

- Regulatory scrutiny on complex offshore reinsurance deals

December 2023 Prudential / Somerset Re

Prudential reinsures in ModCo arrangement $12.5B Guaranteed UL reserves (pending BMA approval)

August 2023 Farmers New World Life / Resolution Life

FNWL ceded inforce individual life to Resolution

May 2023 Met Life / Global Atlantic

MetLife transfer $14B in Life Insurance, UL, VUL, ULSG Reserves and $5.2B Fixed Annuity reserves (Risk Transfer)

Oct 2022 Guardian Life / Talcott

Guardian reinsure $7.4B Variable Annuity Block

May 2023 Lincoln / Fortitude

Lincoln ceded $28B inforce UL and Fixed Annuity

Mar 2022 Taiyo Life / Fortitude

$4B Reinsurance transaction with Taiyo inforce Individual Annuity block.

Why is Private Equity Increasingly Involved with Insurance Companies?

Capture Spread Private Equity increase Assets Under Management

Private Equity provide Strategic Asset Allocation and earn a spread…

- Earn Alpha
  - Earn IRR from 10% to 14%
  - Increase asset net earned rate by 50 bps to 100 bps
  - Redirect asset allocation to Collateralized Loan Obligations and Asset Based Securities
  - Increase illiquidity risk

Immediate Scale and Self-Dealing Private Equity firm build scale overnight

Acquire Life Insurance long term assets provides immediate scale to redeploy in more rewarding, but risky investments…

- Self-dealing, invest insurance assets in their own funds.

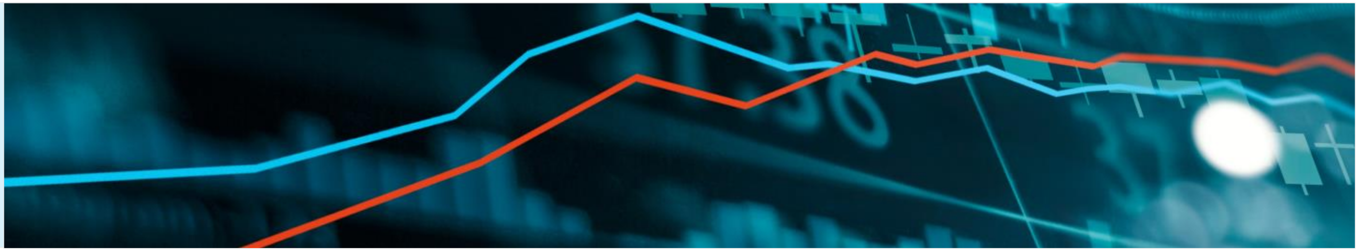
Earned Fee - Private Equity firm earn fees for investing acquired insurance assets

Typical fees…

- Management fee (2% of invested assets).
- Performance fee or carried interest (20% performance fee over benchmark).

Why Do Insurers Sell Life and Retirement Business to Private Equity?

Improve Return on Equity



Free up Capital for Reinvestment

- Modernize administrative systems
- Refocus on cross selling high margin products
- Acquire expertise in other distribution channels

Return Capital to Shareholders

Increase overall portfolio earned rate

Better ALM cashflow and duration match:
low for long (2009 – 2021) guarantees (1%-4%) exceed public bond yields (1.5%-3%)

Senate Committee on Banking Suggests Guardrails on Private Equity Annuity and Life Insurance Investments

Private Equity in Insurance

- Incentives for off-shore reinsurance
- Increased counterparty risk / connections between US and Bermuda entities
- More complex investment strategies are less liquid and more volatile
- Create capital arbitrage (company free up capital and distribute to shareholders at expense of policyholders)
- Reduced transparency of risk due to private and/or interdependent entities

CAP MANAGEMENT FEES

Cap management fees particularly from retirement savings vehicles and blocks protected by the Pension Benefit Guaranty Corporation (PBGC).

INCREASE RESERVE REQUIREMENTS

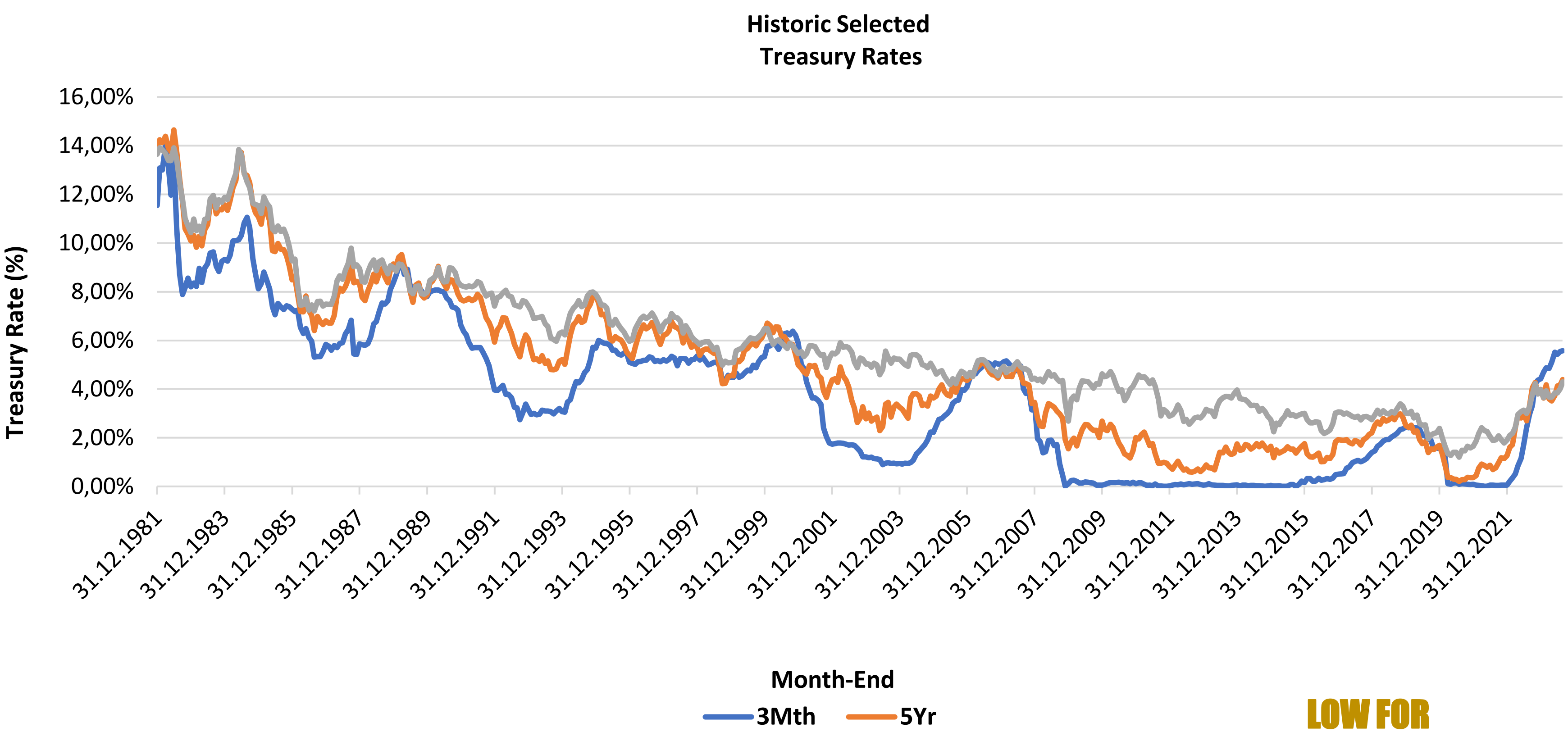
Consider increasing reserve requirements for investments in risky assets.

1. **AG53** – Asset Adequacy with Complex Assets
2. **NY** – Limit short term borrowing and model actual reinvestments
3. **Bermuda** – No borrowing, no rebalancing

BAN SELF-DEALING IN OWN FUNDS

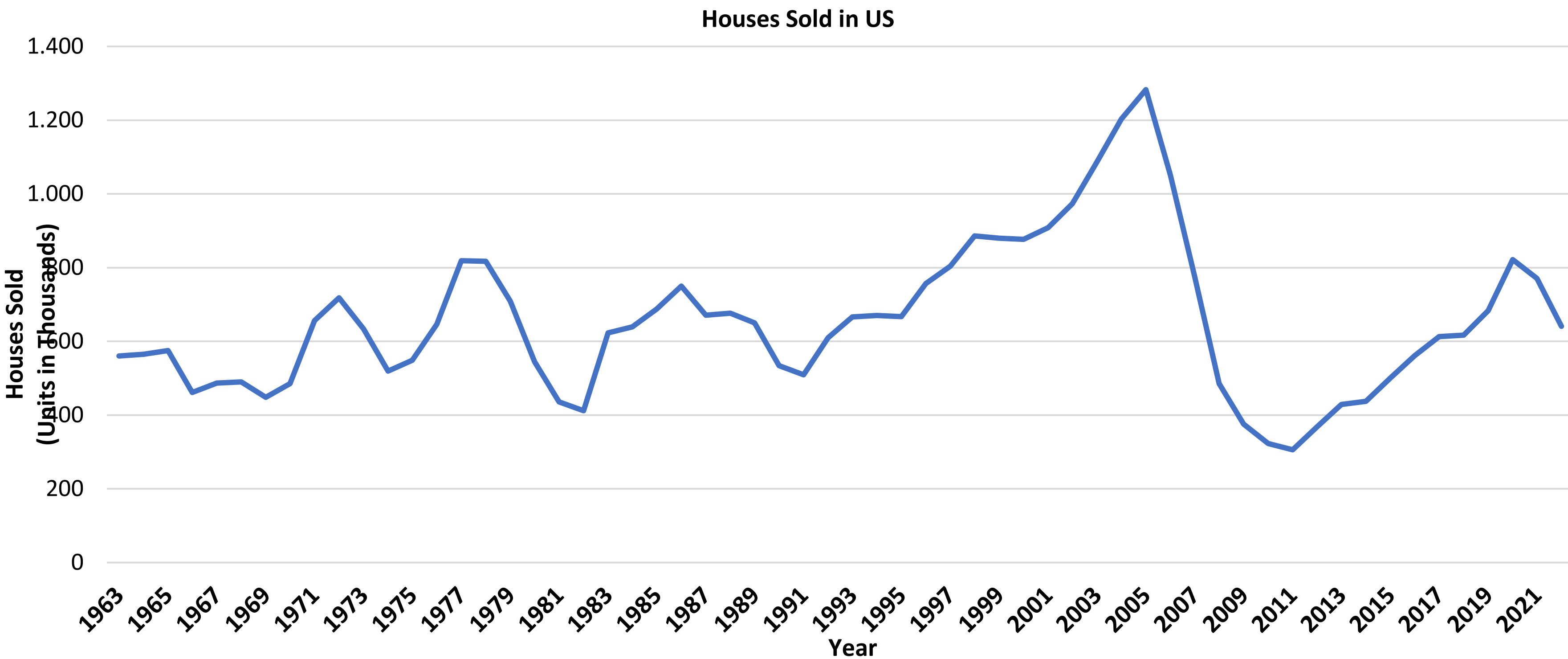
Ban investing insurance assets in own private equity funds.

Reading Interest Rates



LOW FOR LONG!

Reading the Housing Market



Jul 1981 - Nov 1982
Double Dip Recession

Jul 1990 - Mar 1991
Gulf War Recession

Mar 2001 - Nov 2001
Dot Com Recession

Dec 2007 - June 2009
Great Recession

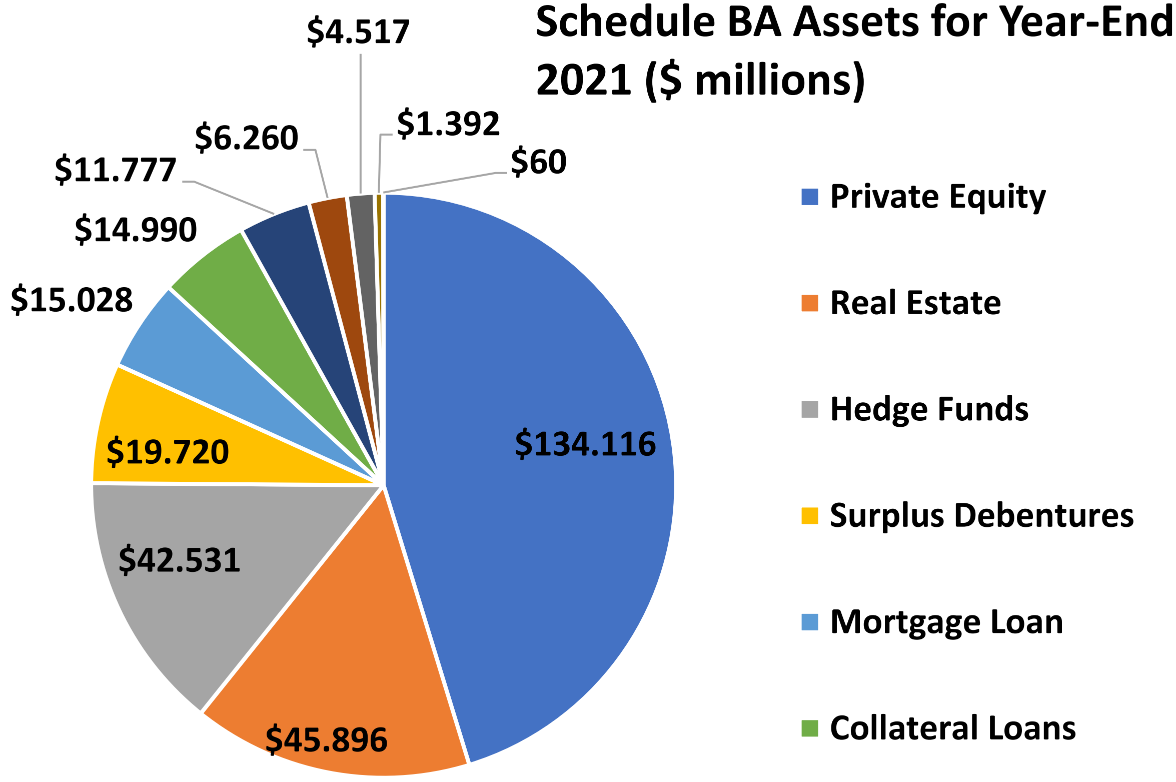
Feb 2020 - Apr 2020
COVID recession

Shift in US Insurer Asset Portfolios

US Life Insurance Industry Allocation to Schedule BA (Long Term Assets) increased by 24% from 2020 to $296 million.

(3rd consecutive year of double-digit growth)

US Life Insurance Industry Schedule BA Assets for Year-End 2021 ($ millions)



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Modern ALM Models and Approaches

Robust ALM Systems Must Handle Complexity

- As market yields increase, insured populations seek higher returns; market-linked insurance products respond
  - Market-linked annuities are growing in popularity
- Assets have more moving parts, and less predictable cash flows
- Cash flows must be dynamically-linked to the appropriate variables
  - A must-have for sensitivity- and stress-testing
  - When market volatility increases so do correlations
- Must handle natural interactions between liabilities and assets
- Must handle in force asset and liability portfolio; all risks; ALM policy; and reinvestment and asset allocation strategies

Pitfalls of Classic, Multi-System ALM

- Asset and liability cash flows are modeled and projected in separate systems – two sources of truth
- Need custom processes to link asset and liability systems to ALM solution
- More difficult to capture interactions between assets and liabilities, and dependencies on common variables
  - Difficult to apply a true first-principles approach
  - Difficult to sensitivity- and stress-test models, and run many economic scenarios

Key Benefits of Single-System ALM

- Models are holistic and dynamic
- Systems that handle assets and liabilities tend to be modern and robust
- Streamlined process
- With great power comes great responsibility
  - Requires closer coordination between actuaries and investment staff
  - Models are more complex, harder to explain and reconcile, and computationally-intensive

A Robust ALM Model

- Captures all material relationships and interactions; supports a multi-scenario; approach; executes expediently
- Promotes reasonable risk-return spectrum and relationships
- Incorporates margins on asset assumptions:
  - To capture uncertainty in assumptions and timing and amounts of asset cashflows for volatile assets
  - For conservatism to reflect anticipated illiquidity under adverse conditions
- Supports sensitivity- and stress-testing
- Supports spread attribution to Credit Risk, Illiquidity Risk, Volatility and other risks
- Provides sufficient output to construct insightful and bespoke narrative

Structured Assets

- Growing in popularity – structured assets provide an alternative to traditional financing
- Provide higher yields in some cases, access to new markets without cost of origination, and help with diversification
- Can help match funding of assets and liabilities
  - e.g., a structured security could have a tranche that pays a lower return for a more predictable payment profile
- Structured assets are generally too complex for standard actuarial cash flow modeling platforms
- Structured assets would typically be modeled in special-purpose solutions and imported into the ALM system, but native integration is best

Concerns with Higher Net Yield Complex Asset Assumptions in Actuarial Models

- Lowers amount of assets making reserves adequate – Easy to produce overly favorable asset adequacy results
- Concern that previously released assets are required for reserve adequacy
- Variety of practice resulting in net yields from 4.5% to in excess of 10% for initial assets and reinvestments
- Higher Yielding assets are less liquid
- Need to carefully capture in the actuarial model

Other ALM Model Applications

- Hedging
  - Supporting hedging programs- calculate Greeks and option values on inforce portfolio, anticipate market movements over next few days
  - Model, simulate and project hedging strategies to mitigate risk of variable annuity guarantees
- Strategic Asset Allocation
  - Additional applications beyond the cash flow engine, such as efficient frontier analysis, and portfolio optimization
  - Extrapolate “heavy model” results for quick insights and decision-making
- Portfolio Management
  - Portfolio managers could benefit from more analytical and detailed tools

Regulatory Perspective – The Caribbean & Bermuda

- Trinidad and Tobago
  - IFRS 17 is not an ALM-method, and simply discounts liability cash flows
  - The September 2023 Guideline for the AA states: “In order to better understand the risks associated with mismatches between asset and liability cash flows, the Central Bank is continuing to request ALM information. The AA in the AAR must describe the (re-)investment strategies, ALM philosophy, objectives, policies and practices of the insurer”
- Jamaica
  - Also IFRS 17
  - No ALM reserve, but quality ALM programs are required
  - Financial Services Commission guidelines state “An insurer shall develop and implement an effective program for monitoring and managing its asset-liability positions to ensure that its assets and investment activities are appropriate to its liability and risk profiles and its solvency position”
- Bermuda
  - SBA - emerging ALM-type principles-based method
  - ALM is a natural part of the statutory reserve calculation
  - Like Canadian CALM and US PBR

Regulatory Perspective – Canada & US

- Canada
  - Also IFRS 17
  - Previous ALM-reserve requirement under CALM
- US
  - Principles Based Reserves (PBR) VM-20, VM-21, and VM-22
  - Like Bermuda, and Canadian CALM, ALM is a natural part of the statutory reserve calculation
  - VM-20 is for life reserves, VM-21 and VM-22 for variable/indexed and fixed annuities, respectively
  - US AG-53 - new asset reporting requirements for high-yielding assets