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Economic-Based Capital Requirements

North America Updates

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Agenda

- US Reserving
- US Risk-Based Capital
- US ORSA
- Canada LICAT
- Canada ORSA

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US Reserving

US Principle-Based Reserving ("PBR") Overview

- The NAIC's Valuation Manual (VM) enhances uniformity in principle-based approaches
- The VM defines minimum reserve requirements for policies issued after the operative date – new business only
- On January 1, 2017, VM-20, which is PBR for life products becomes effective
  - PBR already exists for variable annuities (VM-21), adopted as Actuarial Guideline 43. PBR is also effective for life companies with captives under AG48

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Rules-based vs. principle-based approaches

- PBR maintains an element of rules-based approach in the NPR but adds principle-based reserves in the form of a DR and a SR
- Net Premium Reserve (NPR)
  - Formulaic seriatim calculation
  - Same assumptions and margins used for all companies
  - Locked in at issue date
  - Floored at net surrender value
- Principle-based approach
  - Calculate a Deterministic Reserve (DR) and Stochastic Reserve (SR)
  - Model-based cash flow calculations for groups of similar policies
  - Reflective of specific product risks and guarantees assumptions and margins are reflective of company experience with margin for uncertainty
  - Assumptions can be unlocked to reflect changes in experience

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PBR

- Quantify key reserve cash flows, including benefits, expenses and funding sources (e.g., premiums)
- Capture all benefits/guarantees and reflect associated quantifiable and material risks
- Developed using a level of conservatism for unfavorable events that have a reasonable probability of occurrence
- Utilize relevant and credible company experience, with margins that are consistent with the level of uncertainty in the block of business
- Consistent with a company's risk analysis, financial models and overall risk management procedures
- Process is adaptive to changes in a company's risk profile

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US Risk-Based Capital

US Risk-Based Capital ("RBC")

- The National Association of Insurance Commissioners (NAIC) instituted the RBC system for insurance companies in 1993
- RBC focuses on the calculation of a regulatory minimum capital level for each insurer, based on that insurer's mix of assets, liabilities, and risk
- The RBC level of capital required is calculated by multiplying risk factors by annual statement values
- Formulas continuously evolve
  - NAIC publishes newsletters and guidelines for the calculation of RBC
- The RBC ratio is then the ratio of a company's actual surplus to the RBC requirement

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US Risk-Based Capital ("RBC") (continued)

- Focus is on solvency of each legal entity, not on insurance groups
- As the RBC ratio decreases below certain thresholds, a company is subject to increasingly stringent regulatory responses
- The purpose *is not* to rank the relative strength of companies
- The US RBC approach is largely factor-driven
  - C3 Phases I and II are the exceptions

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Actuarial Guideline 43

- The NAIC introduced Actuarial Guideline 43 (AG 43) in 2009, which applied to the vast majority of variable annuities, both in force and new business
- AG 43 governs reserving requirements
- AG 43 requires two methods of valuation and the final reserve is equal to the greater of the two:
  - **Standard Scenario Amount:** A single scenario following prescribed assumptions. The scenario itself is designed with a drop and recovery
  - **CTE (Conditional Tail Expectation) Amount:** A CTE 70 measure using real-world valuation principles

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C3 Phase II

- C3 Phase II is the principle-based capital requirement introduced at year-end 2005
- Defines a similar standard as Guideline 43 for NAIC RBC for variable annuity guarantees

AG43 and C3 Phase II Developments

- Both AG 43 and C3 Phase II have provisions that affect reserves and capital requirements through the reflection of hedge activity within the reserve/capital calculations
- Most notably, they both allow for some reflection of current hedge positions as well as future hedge activity when the company follows a clearly defined hedging strategy
- The reflection of hedge activity is limited, however
  - By an effectiveness factor in the CTE Amount and
  - By the requirement, in the Standard Scenario Amount, that hedges are all assumed to be liquidated within one year
- In addition, because the statutory reserve calculations incorporate real-world measurement concepts, they do not align with the market consistent valuation inherent in the fair values of hedge instruments

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AG43 and C3 Phase II Developments

- AG43 and C3 Phase II currently generate reserve/capital requirements with varying degrees of sensitivity to market risks
- For example, when the Standard Scenario Amount dominates the reserve is not sensitive to changes in market interest rates
- This discourages companies from hedging interest rates as hedging has the potential to erode statutory capital when market interest rates increase
- The NAIC and industry have recently proposed a number of changes to the methodology and are currently analyzing the implications
- One specific proposal is contained in the NAIC exposure draft "Issue Paper XX—Special Accounting Treatment for Limited Derivatives."

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US ORSA

US Own Risk and Solvency Assessment ("ORSA")

- Many jurisdictions outside the US require companies to maintain an ORSA (EU, Bermuda, Canada)
- With the passage of the ORSA requirement, the US has formalized the process for insurance companies' managements to maintain a risk management program and framework within the organization
- NAIC defines the ORSA is "a confidential internal assessment…conducted by [an] insurer of the material and relevant risk associated with an insurer's current business plan and the sufficiency of capital resources to support those risks."
- The two primary goals of the ORSA, per the NAIC, are:
  - To foster an effective level of enterprise risk management at all insurers, through which each insurer identifies, assesses, monitors, prioritizes and reports on its material and relevant risks, using techniques that are appropriate to the nature, scale and complexity of the insurer's risks, in a manner that is adequate to support risk and capital decisions
  - To provide a group-level perspective on risk and capital, as a supplement to the existing legal entity view

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High Level Requirements of the US ORSA

- Design, implement and conduct an ORSA process
- Annually create a summary report that includes
  - Description of the risk management framework
  - Assessment of risk exposures
  - Group risk capital and prospective solvency assessment
- The third step above is the closest step to an economic-based capital requirement in the US
- First ORSA reports were in 2015
- ORSA submissions have, and will continue to evolve and mature over time

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Section 1: Description of ERM Framework

- Key components
  - Risk culture and governance
  - Risk identification and prioritization
  - Risk appetites, tolerances, and limits
  - Risk management and controls
  - Risk reporting and communication

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Section 2: Assessment of Risk Exposures

- Summary of the quantitative and qualitative assessments of risk exposure in both normal and stressed environments for each material risk in Section 1
- Should consider a range of outcomes using risk assessment techniques that are appropriate to the nature, scale, and complexity of the risks
- Such as
  - Credit
  - Market
  - Liquidity
  - Underwriting
  - Operational
- The analysis should be conducted in a manner that is consistent with the way the business is managed, e.g.
  - Group, legal entity, or other basis

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Section 3: Group Assessment and Prospective Solvency Assessment

- Description of how the insurer combines the qualitative elements of its risk management policy with the quantitative measures of risk exposure in determining the level of financial resources needed to manage over a long term business cycle
  - 1-5 years
- Should be performed in a manner that encompasses the entire group
- Information is intended to assist the insurance commissioner in assessing the quality of an insurer's risk and capital management

Section 3A: Group Assessment of Risk Capital

- Aggregate available capital is compared against the various risks that may adversely affect the enterprise
- Should consider how the group capital assessment is integrated into the insurer's:
  - Management and decision-making culture
  - Evaluation of available capital
  - How risk capital is integrated into the capital-management activities
- Processes should assess through myriad metrics (e.g. rating agency capital, internal measurements of capital, regulatory capital) and future forecasting periods
- Should include a comparative view from the prior year, including an explanation of changes

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Section 3B: Prospective Solvency Assessment

- Capital assessment should tie closely to business planning
- Robust capital forecasting capabilities over the planning time horizon
- Should consider material and relevant changes identified by the insurer to the insurer's internal operations and external business environment
- The assessment should demonstrate the insurer has financial resources necessary to execute its multi-year business plan in accordance with its stated risk appetite
  - If not, should describe the management actions it has taken (or will take) to remedy any capital adequacy concerns

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Canada LICAT

Canada LICAT

- LICAT ("Life Insurance Capital Adequacy Test") is the new capital framework effective in Canada since January 1, 2018
- The new guideline is much more principles-based than its predecessor, MCCSR ("Minimum Continuing Capital and Surplus Requirements")
- Whereas MCCSR was mostly factor based, and no concept of diversification between risks, LICAT defines a Total Asset Requirement based on different shocks, with different levels of diversification benefits
- Not exactly the same as Solvency II, but very similar in construct

Canada LICAT

- Office of the Superintendent of Financial Institutions (OSFI) was satisfied with the overall amount of capital in the Canadian system and targeted a similar level with LICAT, however there were some winners and losers at the company level
- Generally less insurance risk capital in LICAT vs MCCSR and more market risk capital
- New requirement is operationally much more complex, requires more runs and longer run time, more reviews, documentation of assumptions, etc.

LICAT

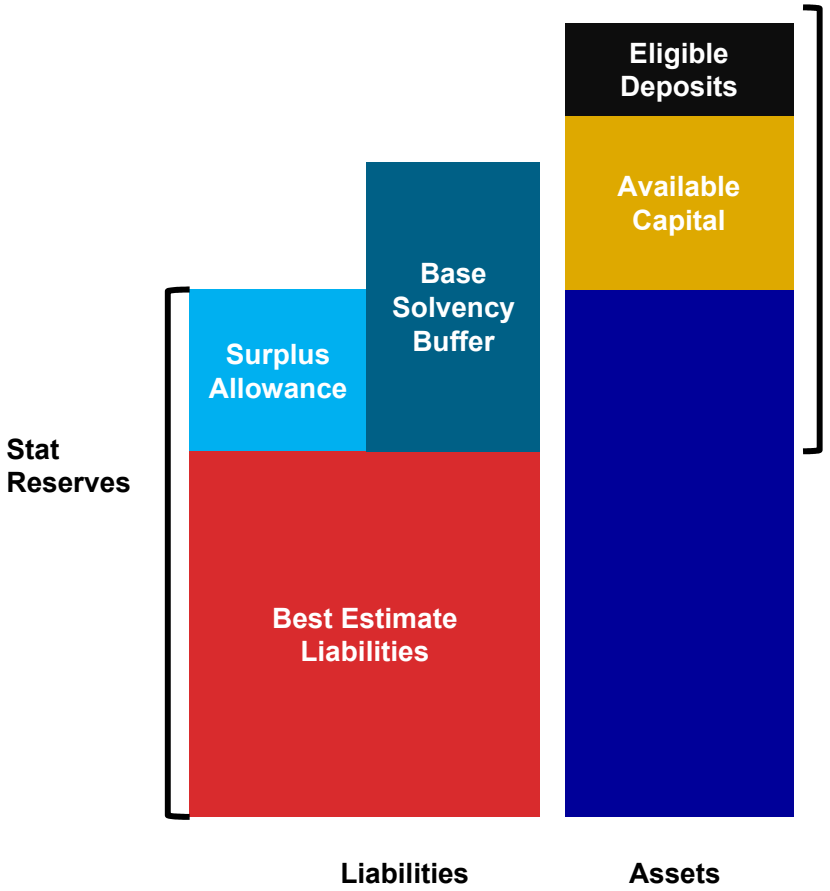
MCCSR

- Prescribes what needs to be held over Statutory Reserves
- Capital calculated with some shocks but mostly factors
- No diversification
- The level of capital in the industry is appropriate according to OSFI
- Easy to allocate capital among business lines

LICAT

- Prescribes what needs to be held over Best Estimate Reserves, i.e. including Provisions for Adverse Deviations (PfADs)
- Capital calculated with some factors but mostly shocks
- Several layers of diversification
- Redistribution of capital requirements among companies and business lines
- Marginal impact needs to be considered

LICAT



$$\text{Ratio} = \frac{\text{Available Capital + Surplus allowance + ED}}{\text{Base Solvency Buffer}}$$

Base Solvency Buffer

- Mixture of factor based (Credit and Operational Risk) and prescribed shocks to cash flows
- OSFI scalar of 1.05

Available Capital

- Tier 1 and Tier 2 capital

Surplus allowance

- Liability PfADS for risk-free interest and non-economic assumptions

Eligible Deposits

- Excess collateral on unregistered reinsurance

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Base Solvency Buffer

- Insurance risk, market risk, credit risk, plus operational risk, less capital requirements for adjustable products, risk diversification, and participating and adjustable products
- Insurance risk
  - Trend, volatility, baseline level, and catastrophe all derived on a standalone basis
- Market risk
  - PV of cash flows between base scenario and the worst of 4 pre-set (by OSFI) scenarios
- Credit risk
  - Factor-driven

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Canada ORSA

Canada ORSA

- OSFI published its first ORSA guideline in January 2014, requiring companies to perform an ORSA on a regular basis, and documenting in a report to the Board of Directors at least annually
- The ORSA is not required to be filed with the regulator
  - The only requirement is to file a report that compares regulatory capital to the ORSA capital and internal target
  - Up to year-end 2017, this was comparing MCCSR capital to ORSA capital
  - In 2018+, will be comparing LICAT capital to ORSA capital

Canada ORSA

- The ORSA should contain at the minimum, certain key elements and considerations, including:
  - Comprehensive Identification and Assessment of Risks
  - Relating Risk to Capital
    - An insurer is expected to set internal targets, that normally should be determined without undue reliance on regulatory capital measures
    - Before the insurer gives consideration to external constraints (e.g. regulatory minimum, analysts' expectations), internal targets should be, first and foremost, based on an insurer's assessment of its own capital needs
    - This exercise will reflect their own choice of datasets, distributions, measurers, confidence levels, time horizons, valuation approaches, financial tools and methodologies, appropriate to their own unique profile
  - Board Oversight and Senior Management Responsibility
    - Includes a review of the reasonableness and appropriateness of the results in the context of the Board-approved stated risk appetite and risk limits (included in the Risk Appetite Framework...a core responsibility of the Board is to approve the Risk Appetite Framework annually)
  - Monitoring and Reporting
  - Internal Controls and Objective Review

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