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Regulatory Capital Requirements for U.S. Insurers

Presentation to the Financial Stability Oversight Council
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Discussion Topics

- Risk-based Capital (RBC) and the US Solvency Framework
- Purpose of Regulatory RBC
- Risks covered by Life RBC
- Formula Basics of Life RBC
- Comparison of Life and P&C RBC formulas
- Refinements to the Solvency Framework
  - Recent & under consideration
  - Stress Testing
- Concluding Observations

RBC and the US Solvency Framework

- RBC was implemented in starting in 1993
  - Three RBC formulas are used: life, health, and casualty
  - Many changes have been made to all three formulas since 1993
- RBC is one part of the framework for monitoring the solvency of insurers operating in the US; other tools include:
  - Risk-focused examinations of insurers
  - Cross-state review of insurers' financial position, with the domiciliary state taking the lead; uniformity in insurance regulations assured through a state accreditation process
  - Conservative statutory accounting and reporting requirements, investment laws governing permissible types and limits on asset classes
  - Actuarial certification of the adequacy of policy and claim reserves based on each company's unique risk profile
  - Newer regulatory processes include supervisory colleges directed toward the regulation of insurance groups and a new requirement being adopted by the states that requires many insurers to submit an Own Risk Solvency Assessment (ORSA)

Objectives of the RBC System

- Create a relatively simple formulaic structure that identifies potentially weakly capitalized companies
- RBC ratios are not designed to compare capital strength of companies
- Design a formula that is applied to all companies based on publicly available information
- Provide a regulatory tool that initiates a more extensive review of an individual company's risks and capital (including proprietary models and other detailed analysis) for those companies that are likely to be, or are weakly capitalized, in order to determine if corrective action(s) are needed
- Establish an objective standard for triggering regulatory action, including the authority to take over a company under certain conditions, such as falling below a certain capital level

Background on RBC

- RBC establishes a de facto minimum level of capital
  - RBC creates a "reference point," via the RBC formula, whereby regulators can compare a company's actual statutory capital position to this regulatory reference point
  - RBC amount is not related to the "value of business"; RBC does not represent the amount a willing buyer would pay to assume a company's obligations or an "exit value" but it does represent the minimum amount of capital a willing buyer would have to maintain in the company if it were purchased
- RBC formula is not designed to achieve a stated calibration level or maintain aggregate capital requirements at a stated calibration level as an outcome of the RBC calculation
- Generally, minimum capital requirements in combination with statutory reserves are expected to be sufficient to protect insurer solvency 95% of the time over a five to seven year time horizon

Background on RBC (cont.)

- RBC calculation is based on statutory accounting principles whose goal is to protect policyholders
- Required capital calculation assumes a going concern, not a liquidation environment
- Required capital is an add-on to reserves under the assumption that policy and claim reserves are adequate; RBC factors were established to capture risk levels above the levels captured in policy and claim reserves

Background on RBC (cont.)

- RBC formula is neither pro-cyclical or counter-cyclical; RBC was designed to be cycle-neutral
  - RBC factors are primarily independent of the current economic environment
  - Many factors are based on the average of past economically driven events; averaging builds in a countercyclical "muting" in contrast to capital requirements based on current economic risk factors
- While economic and business environments may cause risk exposures to fluctuate in the short run, the RBC formulas capture the effects of risks that could materialize over a short to medium time horizon

Risks Covered by Life RBC

- The focus of the original Life Risk-based Capital (LRBC) formula was the identification and measurement of the risks that could affect an insurer's statutory solvency
- RBC framework is based on separate distributions for material risk components (i.e., C0–C4 RBC components) that are aggregated to determine total capital requirements:
  - C-0: risks from affiliates
  - C-1: investment risks
  - C-2: claims risk (i.e., mortality and morbidity)
  - C-3: interest rate risk (i.e., disintermediation)
  - C-4: general business risks

Risks Covered by Life RBC (cont.)

- Correlation of risks between these risk categories is reflected:
  - For correlations pertaining to risks other than interest rates and equity returns, a simple assumption was made
  - Each major risk category was considered to be either completely independent of other risk categories, or completely correlated with the other risk categories
  - After this determination was made, a statistical adjustment was made to adjust for risk correlation among the major "C" risk categories, known as the "covariance adjustment"

Risks Not Included in Life RBC

- The LRBC system assumes that appropriate policy reserves have been established and LRBC provides a cushion for risk levels beyond those risks covered in reserves
- Policy reserves are intended to cover expected losses that arise under moderately adverse conditions
  - Moderately adverse conditions have been implicitly assumed to occur at one standard deviation (roughly the 83rd percentile for normally distributed risks)
- LRBC establishes capital requirements for losses that arise under more adverse conditions (e.g., beyond one standard deviation)

Risks Not Included in Life RBC (cont.)

- The following types of risks are intentionally excluded from the Life RBC formula:
  - Immaterial over the LRBC time period (i.e., which generally covers risks that could abruptly materialize over a short to medium time frame, such as three to five years)
  - Tail Risks, or risks that materialize beyond the tested portion of the risk distribution (i.e., in the outside tails of the distribution beyond the 95th percentile); these risks materialize so infrequently that they only exist beyond the stated calibration level
  - Risks that are not effectively mitigated by capital, such as liquidity or specific operational risks

Life RBC Formula Basics

- The Life RBC ratio is defined as the Total Adjusted Capital (TAC) divided by the Authorized Control Level Risk-based Capital
- Total Adjusted Capital (TAC) is equal to unassigned surplus plus Asset Valuation Reserve plus one-half of the dividend liability
- The Authorized Control Level Risk-based Capital is 50% of Company Action Level (CAL) RBC as calculated from the following formula:

$$CAL = C0 + C4a + \text{Square Root of } [(C1o + C3a)^2 + (C1cs + C3c)^2 + (C2)^2 + (C3b)^2 + (C4b)^2]$$

Life RBC Formula Basics (cont.)

- RBC is calculated at the legal entity level for every insurance company; no charge for contagion risk
- NAIC has not yet defined regulatory capital requirements at the group level; work on a group capital assessment tool has begun
- The Life RBC formula calculates a post-tax amount; the P&C and Health formulas are pre-tax

Regulatory Trigger Points

- Regulatory action levels are triggered when the Total Adjusted Capital falls below certain levels
- Regulatory action levels were empirically established by regulators in the early 1990s

Regulatory Trigger Points (cont.)

- When TAC falls below the **Company Action Level (CAL)**, the company is required to submit an RBC plan to the commissioner of the domiciliary state, which is subject to commissioner approval
- The **Regulatory Control Level** is defined as 150% of Authorized Control Level (ACL); company must submit plan and subsequent regulatory actions will be mandated
- The **Mandatory Control Level** is defined as 70% of ACL authorizing the domiciliary commissioner to rehabilitate or liquidate the company
- The **Authorized Control Level** is defined as 50% of CAL, authorizing the domiciliary commissioner to take whatever actions are necessary to protect policyholders and creditors

Major Risks: P&C vs. Life Insurers

- Major P&C Risks: pricing, reserving, catastrophe, and equity risk

- P&C Insurers vs. Life Insurers:
  - Most P&C business is short duration; much less exposure to investment risk
  - Assets and liabilities not integrated

RBC Requirements for P&C Insurers

- Risks Covered:
  - loss (claim) reserves
  - inadequate pricing
  - fluctuations in asset values (stock, real estate)
  - catastrophes
  - rapid growth

RBC Requirements for P&C Insurers (cont.)

- Risks Not Covered:
  - liquidity
  - strategic and reputational
  - foreign exchange
- Similar formula mechanics to Life RBC
  - 3 major risk components with several minor risk components and a covariance adjustment

US Solvency Framework: Adopted Refinements

- ORSA Requirement (January 1, 2015 in many states)
  - The Own Risk Solvency Assessment (ORSA) provides regulators with an insurer's confidential view of their risk exposures, risk mitigation techniques, and ERM practices
  - ORSA complements RBC with a discussion of an insurer's unique risk profile, and its practices for managing risks and its capital position
- Enhancements underway to all RBC formulas
  - Investment risk factors for all asset classes (implementation date TBD)
  - Operational risk component (informational for 2015)
- Recent enhancements to LRBC formula
  - Life insurer captives (2015 implementation)
  - Commercial mortgages (2013 implementation)
  - Life insurance policies with PBR-defined reserves (Principles Based Reserves) (2017 implementation)
  - Modification to requirements for annuities (fixed & variable) (2016 or later implementation)

US Solvency Enhancements Under Consideration

- Group Capital Assessment Tool
  - NAIC approved the development of a group capital tool in November, 2015
- Additional Stress Testing Requirements
  - Life Insurers are required to perform stress testing to opine on adequacy of reserves
  - Existing reserve and capital requirements include stress testing requirements for some products
  - Should a stress testing requirement be used to define aggregate capital requirements?

Key Considerations in Stress Testing Life Insurers

- A wide variety of products is offered in the insurance market, resulting in significant variations in the risk profiles of individual insurers due to different investment, business, and risk management strategies.
- The risks managed by insurers are complex, creating significant challenges in the testing and management of risks.
  - The insurance business model includes promises made to policyholders for 50+ years
  - A life insurer's assets and product liabilities are integrated
- Uniform, mandated, one-size-fits-all risk analysis can produce misleading results, leading to incorrect conclusions about an insurer's exposure to risk. Stress testing based on uniform scenarios can identify outliers, leading to more in-depth discussions between regulators and insurers.
- Fundamentally, the life insurance business is a business of managing risks. Regulation can not totally eliminate risk; regulation can however provide regulators with better information to oversee insurers.

Key Considerations in Stress Testing Life Insurers (cont.)

- Stress Testing is a fundamental analytical tool used by actuaries for many purposes.
- Stress Testing has been gradually introduced into the regulation of US life insurers for the last 30 years.
- As expectations for more sophisticated risk analysis increase, stress testing will take on greater importance for life insurer management and Boards, rating agencies, and regulators.

Observations on US RBC

- RBC was designed from the ground up, based on distributions of individual risks
- RBC is not a total balance sheet system, or a system based on an integrated view of risk for an organization
- RBC is defined according to statutory accounting principles:
  - The losses covered by RBC are defined relative to statutory principles
  - The goal of statutory reporting is the protection of policyholders; statutory accounting is different from US GAAP and different from fair value
- Certain RBC constraints affect the proper measurement of risks
  - Reliance on published statutory values
  - Desire for a simplistic, factor-based formula; avoidance of internal models
  - Uniform application to all insurers, ignoring varying risk profiles among insurers
  - Certain aspects of the calculation methodology are prescribed and have created disincentives to manage risk (e.g., variable annuities)

Observations on US RBC (cont.)

- Different constituencies quantify risk differently
  - RBC is a blunt instrument, designed for insurance regulators to identify potentially weakly capitalized companies
  - RBC was not designed to rank the capital strength of insurers; many have improperly used the RBC formula
  - Rating Agencies take a different view of risk and establish capital requirements using a different set of principles and methodology
  - Insurance companies take a different view of risk and establish internal capital requirements differently (e.g., a multiple of RBC or economic capital)
- RBC is one element of the US regulatory framework for monitoring the solvency of insurance companies
- RBC (the formula and where RBC fits into overall solvency framework) continues to evolve with more perspectives influencing its structure than ever before
  - International regulatory community
  - Federal government

Challenges with Modernizing the US Solvency Framework

- Balancing the limitations of a simplistic, uniform formula with cost of implementing and regulating with more sophisticated methods for measuring risk (e.g., internal models)
- Pressure to use RBC as the best tool to regulate all risks (e.g., liquidity, longevity)
- Limited regulatory resources to review and synthesize results; a wide range of enterprise risk management (ERM) practices within the insurance industry
- Pressure to redesign the US RBC formula to be similar to capital computation framework of other insurance regimes (e.g., Solvency II) or other financial sectors

Recent Changes to the US Solvency Framework Strengthen the Regulation of Insurance

- Increased emphasis to the comparability of the US Solvency framework to other regulatory regimes (e.g., defining statistical bases for RBC factors, outcome-based focus)
- Increased attention to risk transfer between entities (e.g., shifting risk to captives, reinsurance collateral)
- Increased attention to defining capital requirements for risks missing from current RBC formulas (e.g., operational risk, catastrophe)
- Increased attention to the insurance group in addition to the legal entity
- Increased attention to ERM through the ORSA requirement

Additional Academy Resources

- Report to the NAIC's Solvency Modernization Task Force on the risks covered in the RBC formulas (January 31, 2011) http://actuary.org/files/American_Academy_of_Actuaries_SMI_RBC-Report_2.4.pdf
- Report to the NAIC: Comparison of the NAIC Life, P&C, and Health RBC Formulas (February, 2002) http://actuary.org/files/publications/jrbc_12feb02.pdf

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