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#ACTUARIES2019

A Decade of Macroprudential Regulatory Changes

Lauren Eardensohn Sarper
Director, Policy Development, External Affairs
Prudential Financial, Inc.

International Reactions

- Financial Stability Board (FSB)
  - Resolution and recovery, compensation, derivatives, risk management, resiliency/solvency, “too big to fail” (TBTF)
  - Global Systemically Important Financial Institution (G-SII) list (temporarily suspended)

- International Association of Insurance Supervisors (IAIS)
  - Insurance Core Principles (ICPs)
  - Common Framework (ComFrame) for the Supervision of Internationally Active Insurance Groups (IAIG)
  - Risk-based Global Insurance Capital Standard (ICS)
  - G-SII Policy Measures, Holistic Framework, Macroprudential Supervision

- International Monetary Fund (IMF)
  - 2015 U.S. Financial Stability Assessment Project (FSAP)

Domestic Reactions

- Dodd-Frank Act of 2010
  - Financial Stability Oversight Council (FSOC)
    - Systemically Important Financial Institution (SIFI) Designations
    - Recommend enhanced regulatory standards for systemically risky activities
    - Annual report
  - Federal Reserve Board (FRB)
    - Capital and enhanced prudential standards
    - Annual financial stability report

- National Association of Insurance Commissioners (NAIC)
  - Solvency Modernization Initiative (SMI)
  - Macroprudential Initiative (MPI)

- Increased Global Engagement
  - Team USA – NAIC, Federal Reserve, Treasury/Federal Insurance Office (FIO)

IAIS

- ICPs, ComFrame, and ICS
  - Expanded focus on effective group-wide supervision, management/oversight of risks and macroprudential supervision
  - Developing ICS to serve as common language for discussions on IAIG group solvency
    - Iterative process informed by recurring public consultation and field testing
    - ICS Version 2.0 to be adopted Nov. 2019
    - 5 year Monitoring Period (2020 - 2024) followed by implementation as a minimum prescribed capital requirement (PCR)
    - Alternative approaches remain under development and consideration
- G-SII designations and policy measures based on entity-based approach (EBA)
  - Holistic Framework
    - Focuses on an activities-based approach (ABA) but retains elements of EBA framework
    - Heightened emphasis on ICPs and ComFrame in place of G-SII policy measures
      - ICP 16 Enterprise Risk Management for Solvency Purposes (revision)
      - ICP 24 Macroprudential Supervision (new)
- Application Papers
  - Completed: Board Composition, Corporate Governance, Supervisory Colleges
  - In Progress: Recovery, Liquidity, Resolution

NAIC

- SMI
  - Goal: Improve group supervision tools for regulators
  - Group Supervision enhancements: Insurance Holding Co. Model Law, Corp. Gov.
  - Updated to standard valuation: PBR and Valuation Manual
  - Credit for Reinsurance Model Law and Regulation
  - Own Risk and Solvency Assessment (ORSA) Reporting

- Group Capital Calculation (GCC)
  - Goal: Provide greater insight into insurance groups, including non-insurance operations
  - First field test recently concluded
  - Key design elements remain open
  - Finalization expected late 2020

NAIC (cont.)

- MPI
  - Goal: improve the macroprudential supervision tools for regulators
  - Resolution and recovery improvements (ongoing)
  - Counterparty exposures (ongoing)
  - Capital stress testing (post-GCC)
  - CLO stress testing (results expected Fall 2019)
  - Liquidity stress testing (exposure expected late 2019; field testing summer 2020)

Liquidity Risk Industry Practices

Tricia Matson
Partner, Risk & Regulatory Consulting

What is Liquidity Risk?

- Ability to meet obligations when due under normal and stressed conditions
- Typical sources are balance sheet or access to capital markets:
  - Balance sheet liquidity is less risky given difficulty predicting capital markets under stress
  - Both balance sheet and capital market access should be managed based on normal and stressed liquidity needs.
  - Products and strategy impact liquidity needs

Source: NAIC Capital Markets Bureau

Factors Impacting Asset Liquidity

- Size of market
- Size of the issue and the investor's holding
- Investor base
- Extent of credit loss exposure
- SEC registration
- Position in the capital structure/tranche
- Market landscape/supply and demand
- Duration
- Others?

Rank the Following In Terms of Liquidity

Cash

Junk Bonds

AA Corporate Bonds

A-Rated Mortgages

A-Rated CMOs

Private Placements

Real Estate

Treasuries

Factors Impacting Liability Liquidity

- Existence of a tradable market (rare)
- Non-forfeiture values/surrender charges
- Accumulation vs. protection products
- Policy lifetime and current duration
- Policy performance/funded level/guarantees
- Competitive positioning
- Market landscape

Rank the Following In Terms of Liquidity

GICs/MTNs

Highly funded UL

Disability Income

Deferred Annuities

Long Term Care

Whole Life

Low Funded UL

Traditional Health Care Products

Operating Liquidity

Estimation of cash inflows (sources of funds) and outflows (uses of funds) for each significant balance-sheet account, given a specific time period (usually includes daily, weekly, monthly, quarterly)

Foundational Elements	Governance	Mitigation
• Sufficient cash on hand to cover short term (day/ week/month) obligations • Monitored daily	• Treasury may own, with ERM review • Minimum liquidity should consider potential stress scenarios, such as market closures	• Specific, tested procedures for shortfall scenario

Stressed Liquidity

Estimation of cash inflows (sources of funds) and outflows (uses of funds) in both "baseline" and stressed conditions, over short and long term horizons (usually includes daily, weekly, monthly, quarterly, yearly)

Foundational Elements	Governance	Mitigation
• Link to risk appetite • Stress scenarios consider market and reputational impacts • Typically covers short and long term • Specific definition of "liquid" assets and saleabliity haircuts	• Limit setting and associated monitoring reviewed and approved by Asset Liability Committee (ALCO) • Risk appetite considerations evaluated by risk committee (RC) and board	• Mitigation, approved by ALCO and/or RC, when limits (or early warnings) breached • Contingent funding available for extreme scenarios

Liquidity Needs

- Asset needs:
  - Collateral calls
- Liability needs:
  - Contract claims
  - Nonguaranteed elements
  - Surrenders
- Other needs:
  - Expenses
  - Commissions
  - Litigation costs
  - Debt service

Liquidity Sources

- Primary sources of liquidity:
  - Ready cash balances (cash and cash equivalents)
  - Short-term funds (short-term financing, such as trade credit and bank loans)
  - Cash flow management (for example, getting customers' payments deposited quickly)
  - Sales
- Secondary sources of liquidity:
  - Renegotiating debt contracts
  - Selling assets
  - Filing for bankruptcy protection and reorganizing federal funds lines
  - Repurchase agreements (repos)
  - Federal Home Loan Bank (FHLB) advances
  - Securitization

Liquidity Ratios

Some simple ratios can give a high level picture of a company's liquidity positions:

LIQUIDITY RATIOS

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

Ability to satisfy current liabilities using current assets

$$\text{Quick ratio} = \frac{\text{Cash} + \text{Short-term investments} + \text{Receivables}}{\text{Current liabilities}}$$

Ability to satisfy current liabilities using the most liquid of current assets

However these are not always indicative of potential future needs or needs under stress

Stress Testing

Below is a representative maturity model for an insurer's stress testing processes

Maturity	Frequency of Testing	Scenario Definitions	Communication/Use
Ad-Hoc	Some testing performed, but is ad-hoc and in silos	Ad-hoc and siloed	Limited
Initial	Some regular testing of some risk exposures	Centralized definition of some scenarios, typically single risk sensitivities	No clarity on how results should be communicated or used
Repeatable	Regular testing performed of most material exposures	Specific scenarios defined largely based on regulatory or industry benchmarks	Results shared with executive team but not necessarily used
Managed	Testing of all exposures performed and reviewed at least annually	Tests defined based on all key risk exposures, and have leadership review	Results shared with executive team and Board, considered in decisions
Leading	Testing of all exposures performed and reviewed at least quarterly, including reverse stresses	Tests defined based on all risk exposures, link to risk appetite, and have leadership approval	Executive team and Board engaged in approach and results, and used in decision making with feedback loop

Contingent Funding

Good liquidity risk management will include a contingent funding plan to address potential unexpected needs

Operational Considerations

- Formal plan in place, reviewed & approved by BoD
- Specifies ownership of liquidity analysis and trigger points for use of contingent funds
- Considers baseline and stress scenarios

Contingent Funding Sources

- Debt issuance
- Lines of credit
- Commercial paper
- Federal Home Loan Bank
- Surplus notes

Approval Process

- Clear process for evaluating need and escalating
- Typically involves Treasury and ERM as first layer
- Additional oversight from Risk Committee/ALCO or BoD

ORSA Requirements

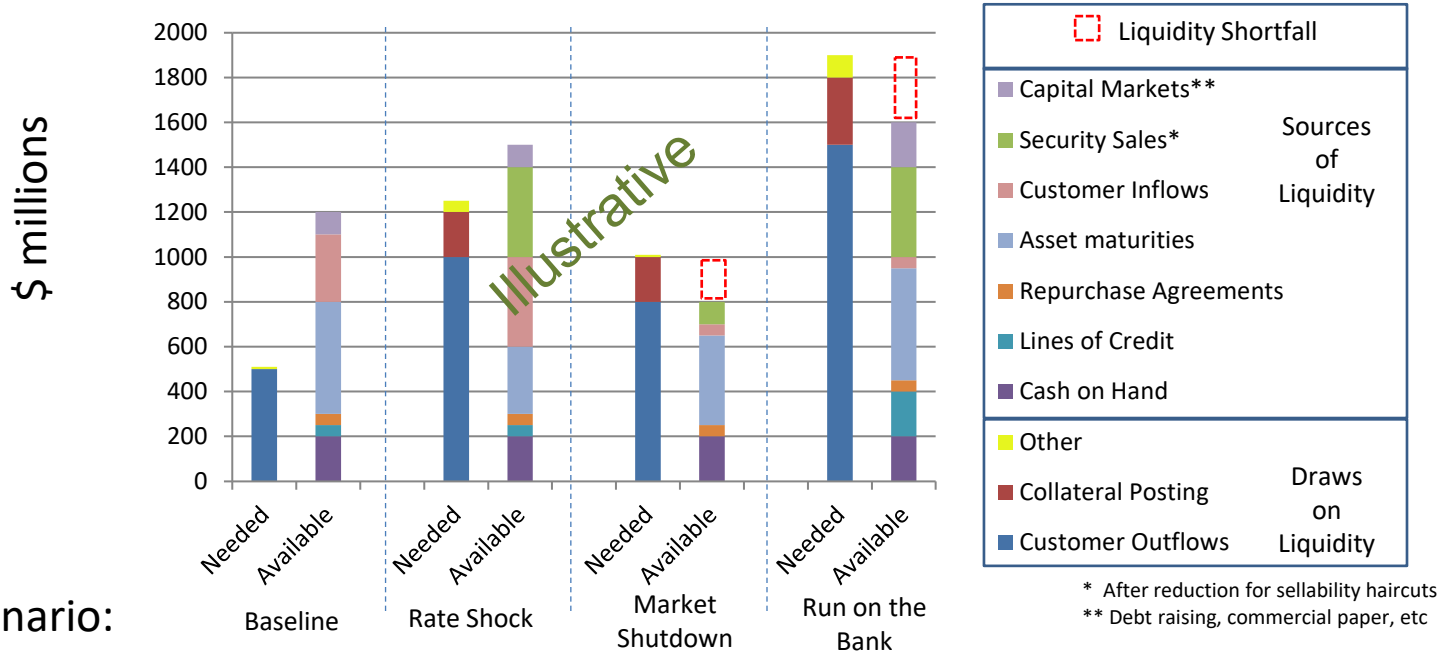
Key excerpts from section 3 of the ORSA Guidance Manual regarding liquidity:

- Definition of Solvency – Describe how the insurer defines solvency for the purpose of determining risk capital and **liquidity requirements**
- Risks modeled – Credit, market, **liquidity**, insurance, operational
- Assessment of group-wide capital adequacy should also consider…..**the effect of liquidity risk**, or calls on the insurer's capital position, due to micro-economic factors, (i.e. internal operational) and/or macro-economic factors (i.e. economic shifts)

In general, the requirements of section 3 of ORSA should include both capital and liquidity considerations

Sample ORSA Content

Firms must have sufficient liquid assets to fund obligations in a time of market stress:



* After reduction for sellability haircuts
** Debt raising, commercial paper, etc

Scenario:

Macroprudential Initiative (MPI)
National Association of Insurance Commissioners (NAIC)
Liquidity

Linus Waelti FSA, MAAA, CFA
Vice President & Actuary
New York Life

MPI – Liquidity

- Liquidity Assessment (EX) Subgroup

- The focus of liquidity work to date has generally fallen into 2 categories:
  - Liquidity Data Project
  - Liquidity Stress Testing

- Liquidity Data Project
  - Review existing public and regulator-only data related to liquidity risk
  - Identify any gaps based on regulatory needs
  - Culminated in the two blanks proposals for the life annual statement (more granular product detail, new note: Analysis of Life Actuarial Reserves and Deposit Type Liabilities by Withdrawal Characteristics)

MPI – Liquidity Stress Testing

- Determine the scope of application
  - Adopted by FSTF on February 2019
- **Construct a liquidity stress testing framework for in scope companies (e.g. large life insurers)**
  - **Target: 2019 Fall National Meeting**
- Field Testing based on YE2019 data in late Spring, early Summer 2020
- Consider potential enhancements or additions to disclosures
  - Target: 2020 Summer National Meeting

Scope Criteria

- Scope in any insurer/group that exceeds the thresholds for any of the 6 activities below:
  - Fixed and Indexed Annuities
  - Funding Agreements and Guaranteed Investment Contracts (GICs)
  - Derivatives
  - Securities Lending
  - Repurchase Agreements
  - Borrowed Money (including commercial papers)

- 23 insurers in scope (based on YE2017 Annual Financial Statement Blank)

Scope Criteria

Account Balances	Threshold in $ billions "greater than"	Reference to 2017 NAIC life/accident and health (A&H) annual financial statement blank
(1)	(2)	(3)
Fixed and Indexed Annuities	25	**Analysis of Increase in Annuity Reserves** Page: Supplement 62 Line: Reserves December 31, current year (15) Column: Sum of Individual Fixed Annuities, Individual Indexed Annuities, Group Fixed Annuities, and Group Indexed Annuities
Funding Agreements and GICs[i]	10	**Deposit-Type Contracts** Page: Exhibit 7 – Deposit-Type Contracts Line: 9 Column: Guaranteed Investment Contracts (Column 2) + Column: Premium and Other Deposit Funds (Column 6) IF the amount of FHLB Funding Reserves from Note 11.B(4)(b) suggests funding agreements are not reported in Column 2 of Exhibit 7 + **Synthetic GICS** Page: Exhibit 5 – Interrogatories Line: 7.1

Account Balances	Threshold in $ billions "greater than"	Reference to 2017 NAIC life/accident and health (A&H) annual financial statement blank
(1)	(2)	(3)
Derivatives – Notional Value (absolute value)	75	**Derivatives – Notional Value (absolute value)** Pages: Schedule DB, Part A; Schedule DB, Part B, Section 1 Column: Notional Value (sum all)
Securities Lending	2	**Securities Lending Collateral Assets** Pages: Schedule DL, Part 1; Schedule DL, Part 2 Lines: Total (9999999) Column: Fair Value
Repurchase Agreements	1	**Repurchase Agreements** Page: Notes to Financial Statement Investments Restricted Assets Lines: Sum of 05L1C, 05L1D, 05L1E, 05L1F Column: Total (General Account Plus Separate Account)
Borrowed Money (includes commercial papers, letters of credit, etc.)	1	**Borrowed Money** Page: Liabilities Line: Borrowed Money (22) Column: Current Year

Liquidity Stress Testing (LST) Framework - Objectives

- A primary objective of the LST Framework is to understand how large life insurers react to a common liquidity stress and assess the potential implications of their collective reactions for the financial sector
- Primary focus: Macro (collective impact to a common stress and risks posed to the broader financial sector)
- Secondary focus: Micro (provide insights as to the vulnerability of specific firms where liquidity risks may be concentrated)
- Intended to supplement, not replace, a firm specific liquidity risk management framework
- Expected to be an annual exercise with the first run based on YE2019 (done some time in 2020)

Liquidity Stress Testing (LST) Framework – General Approach

- Balance Sheet Approach vs. Cash Flow Approach

- Cash flow approach with certain regulator-prescribed elements was ultimately selected

Inputs	Model	Outputs
Prescribed Common Scenario(s)	Internal Liquidity Stress Testing Cash Flow Model	Liquidity Sources
Firm-Specific Assumptions		Liquidity Uses
		Asset Sales

Liquidity Stress Testing (LST) Framework – Study Group

- Informal Study Group comprised of state insurance regulators, eight insurance groups (originally five) and NAIC staff

- Tasked with exploring key design elements of the LST:
  - Cash flow template including defining liquidity sources, liquidity uses and asset classes available for sale
  - Key Outputs: Expected Asset Sales (macro goal), Liquidity Ratios (micro goal)
  - Time horizons (1, 3, 12 months)
  - Stress scenarios
  - Assumptions – prescribed vs. firm-specific

- Any proposals made by the Study Group will need to be exposed formally through the Liquidity Assessment Subgroup prior to adoption