

Draft Pending Adoption

Draft: 8/16/23

Financial Stability (E) Task Force
and the Macroprudential (E) Working Group
Seattle, Washington
August 13, 2023

The Financial Stability (E) Task Force met Aug. 13, 2023, in joint session with the Macroprudential (E) Working Group. The following Task Force members participated: Nathan Houdek, Chair (WI); Judith L. French, Vice Chair (OH); Alan McClain represented by Chris Erwin (AR); Andrew N. Mais represented by William Arfanis (CT); Karima M. Woods represented by Philip Barlow (DC); Michael Yaworsky represented by Virginia Christy (FL); Doug Ommen represented by Carrie Mears (IA); Amy L. Beard represented by Roy Eft (IN); Vicki Schmidt represented by Tish Becker (KS); Gary D. Anderson represented by John Turchi (MA); Kathleen A. Birrane represented by Lynn Beckner (MD); Timothy N. Schott represented by Vanessa Sullivan (ME); Grace Arnold represented by Fred Andersen (MN); Chlora Lindley-Myers represented by John Rehagen (MO); Mike Causey represented by Angela Hatchell (NC); Jon Godfread represented by Matt Fischer (ND); Eric Dunning represented by Lindsay Crawford (NE); Justin Zimmerman represented by David Wolf (NJ); Adrienne A. Harris represented by John Finston (NY); Andrew R. Stolfi represented by Kristen Anderson (OR); Michael Humphreys represented by Diana Sherman (PA); Elizabeth Kelleher Dwyer (RI); Michael Wise represented by Will Davis (SC); Cassie Brown represented by Jamie Walker (TX); and Scott A. White (VA). The following Working Group members participated: Bob Kasinow, Chair (NY); Carrie Mears, Vice Chair (IA); William Arfanis (CT); Philip Barlow (DC); Charles Santana (DE); Virginia Christy (FL); Roy Eft (IN); John Turchi (MA); Lynn Beckner (MD); Vanessa Sullivan (ME); Steve Mayhew (MI); Fred Andersen (MN); John Rehagen (MO); Lindsay Crawford (NE); Jennifer Li (NH); David Wolf (NJ); Kristen Anderson (OR); Diana Sherman (PA); Elizabeth Kelleher Dwyer (RI); Jamie Walker (TX); Dan Bumpus (VA); and Amy Malm (WI).

1. Heard Opening Remarks

Commissioner Houdek said materials for consideration and discussion for this meeting were sent via email Aug. 7, and they are available on the NAIC website in the “Committees” section under the Financial Condition (E) Committee.

2. Adopted the Task Force’s June 20 and Spring National Meeting Minutes

Mears made a motion, seconded by Superintendent Dwyer, to adopt the Task Force’s June 20 (Attachment One) and March 22, 2023 minutes (*see NAIC Proceedings— Spring 2023, Financial Stability (E) Task Force*). The motion passed unanimously.

3. Heard an Update on FSOC Developments

Superintendent Dwyer reported on a few Financial Stability Oversight Council (FSOC) discussions identified publicly that are most directly related to the NAIC’s work:

- On April 21, the FSOC released its new proposed guidance and analytic framework for designating nonbanks that potentially pose financial stability risks, which are the policies and documents that would guide the FSOC should it decide to “designate” a non-bank entity. This could potentially include insurers. After a brief extension, the comment period closed July 27.

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- A designation means the FSOC has determined that the particular entity poses a systemic risk to the entire financial system and, therefore, should be subject to enhanced supervision by the Federal Reserve, in addition to any existing functional oversight by another state insurance regulator, which is the authority that led to the designations of American International Group Inc. (AIG), MetLife, and Prudential Financial after the 2008 financial crisis.
- The designations were eventually removed from all three companies, with MetLife winning a lawsuit that challenged the FSOC's ability to designate a company without specific findings.
- In the intervening years, the FSOC was encouraged to focus more on an "activities-based" approach to dealing with systemic risk; i.e., focusing on the type of activities that lead to contagion and catastrophe regardless of which entities may be engaged in them.
- While the NAIC prefers the "activities-based" approach to designating individual firms, the designations authority is a function of law, and it remains a potent tool in the FSOC's toolbox.
- The FSOC has not indicated whether there are particular firms or insurers on its radar. However, recent public work of the FSOC has focused on broad areas of the financial sector, including non-bank lenders, hedge funds, crypto firms, and asset managers.
- In keeping with past precedent, the NAIC did not comment publicly on the FSOC's internal guidance, given its role as a sitting member of the FSOC. However, the NAIC has long argued that the business of insurance is not inherently systemic, and while insurers can be affiliated with other parts of the financial system that could create risk, state insurance regulation has evolved significantly since the 2008 financial crisis, and the NAIC has spent the last decade further refining and improving what was already an effective system. The NAIC now has far deeper and broader insights into non-insurance entities within a group, better risk management, reporting and liquidity tools, and enhanced disclosure to further limit the potential for systemic risk in the insurance sector.
- While the non-bank designation guidance has gotten most of the attention, the FSOC has continued to make progress on other important projects, like enhancing data sharing among FSOC agencies related to climate risk, banking sector supervision due to recent regional bank failures, hedge fund vulnerabilities, and non-bank mortgage servicing concerns.

4. Received a Working Group Update

Kasinow provided a brief update on the liquidity stress test (LST) project:

- The 2022 LST filings were due June 30, and NAIC staff are continuing to review the filings and will provide summarized results and insights soon.
- Work on the 2023 Liquidity Stress Testing Framework (LST Framework) will begin soon. State insurance regulators will once again consider whether to modify the scope criteria used to identify life insurers and their groups for potential participation in the LST project, as well as consider any modifications to the stress scenarios and other requirements to be included in the 2023 LST Framework.
- Separate account liquidity concerns, other than the guaranteed portion included in the general account, are excluded from the current LST Framework. The LST Study Group is in the process of considering how to address potential separate account asset sales in a stress scenario. The Study Group is working on a data call for lead states to require their participant life insurance groups to provide some context around the dollar amount of specific asset types included in separate accounts, which are not already subject to U.S. Securities and Exchange Commission (SEC) liquidity stress requirements.

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- Once the Study Group has access to the results of this data call, state insurance regulators will be in a better position to consider the potential impact of this universe of assets. If deemed significant, state insurance regulators will move on to constructing a methodology for assessing the potential asset sales, which could occur in likely stress scenarios.

Kasinow reported that NAIC staff recently posted a new status update document on the referrals of the Working Group's list of 13 private equity (PE) and related considerations (Attachment Two), which includes a brief title for each of the 13 considerations, the initial status when referrals were sent to other groups, the March 22 status update, and the recently added Aug. 13 status update.

Kasinow summarized some key developments of the 13 PE and related considerations:

- For items 1 and 2, addressing concerns around holding company structures, ownership, and control, the Group Solvency Issues (E) Working Group formed a drafting group to develop best practices for regulatory review in this area.
- For items 4 and 10, Andersen's update on *Actuarial Guideline LIII—Application of the Valuation Manual for Testing the Adequacy of Life Insurer Reserves* (AG 53) (Attachment Two-A) will provide insights into efforts, which involve ensuring that long-term liabilities are appropriately supported and the complex and/or privately structured securities' risks are appropriately modeled.
- For item 5, which raises questions about operational, governance, and market conduct practices, the Working Group will soon begin considering this item now that the Task Force has completed the Reinsurance Worksheet to address the offshore/complex reinsurance topic in item 13.
- Item 7, which concerns identifying related party-originated investments, has been addressed by the 2022 adoption of additional related party codes for investment reporting and the more recent adoption of revisions in the Statutory Accounting Principles (E) Working Group's Ref #2022-15. These revisions clarify that any invested asset held by a reporting entity that is issued by an affiliated entity, or which includes the obligations of an affiliated entity, is an affiliated investment.
- The revisions for item 7 also address many of the considerations for item 8, which concerns identifying underlying affiliated/related party investments and/or collateral in structured securities, and item 9, which concerns asset manager affiliates and disclaimers of affiliation. There may be additional work as state insurance regulators gain more insights from reviewing statutory financial statements, including these new disclosures and accounting clarifications.
- For item 11, reliance on rating agencies, the Valuation of Securities (E) Task Force has had a lot of discussion and activity around this consideration, which is expected to continue and possibly expand in scope.
- For item 12 and its considerations around pension risk transfers (PRTs), it is the NAIC's understanding that the U.S. Department of Labor (DOL) has had many meetings with trade associations and insurers, along with many other groups to work to update the fiduciary requirements under 95-1.

Kasinow also reported that the Working Group will be working on the following items before the Fall National Meeting:

- Updating the Macroprudential Risk Assessment (MRA) dashboard, including incorporating additional climate risk metrics.
- The MRA work will also include comparing the NAIC's framework to the FSOC's framework to identify any gaps and propose a way forward.

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- Continue counterparty identification and an enhancement project.

Andersen reported that in 2022, the NAIC adopted AG 53, with its main purpose being to help ensure claims-paying ability even if complex assets do not perform as expected. He added that it requires disclosure for most life insurers over a size threshold of asset-related information with first submissions due April 2023. He added that the disclosures provide an opportunity for companies to tell their stories regarding their complex assets and associated risks, as well as how their cash-flow testing models address those risks. He said the NAIC has received AG 53 filings from 246 life insurers. He added that the Valuation Analysis (E) Working Group formed an AG 53 Review Group consisting of a team of actuaries, investment experts, and other financial staff to perform reviews. He said the review process has started with company prioritization based on prior knowledge and template information. He explained that the Review Group meets frequently to identify companies with outlier net yield assumptions and engage with state insurance regulators for companies with outlier assumptions.

Andersen explained that the Valuation Analysis (E) Working Group considered a review of net yield assumptions to be its top priority due to the implications if a company is assuming high investment returns:

- More favorable asset adequacy analysis results.
- With more favorable asset adequacy results, a lower amount of assets could be held for reserves to be considered adequate.
- The concern is if risk is understated and assets underperform, reserves will turn out to be inadequate, and previously released money may have been needed.

Andersen explained the table in his presentation:

- Listed are examples of cash-flow testing results showing adequate reserving amounts, with the only difference being a change in the net yield assumptions. As the net yield assumption increases, the cash-flow testing indicates that a lower reserve amount is adequate.
- From a state insurance regulator's perspective, companies with high net yield assumptions would be vulnerable to not having sufficient reserves if their assets do not perform as expected. Companies assuming aggressively high net yields may be perceived as being dependent on that level of return to be able to pay all future claims.
- This illustrates why the Review Group first focused on net yield assumptions.

Andersen reported some findings related to AG 53 net yield assumptions:

- AG 53 filings for companies that are active and have outlier net yield assumptions have been reviewed, and the Review Group has the following concerns:
 - Reserve adequacy using moderately adverse conditions criteria is not met for companies that rely on high investment returns over a long period of time to be able to pay future claims.
 - Other companies may feel a need to assume unreasonably high yields to compete.
- Separated companies with above 7% and below 7% net returns for a variety of asset classes, but 7% is not meant as a safe harbor, rather just a demonstration of companies with outlying assumptions.
- A vast majority of life insurers assume reasonable returns on their assumptions; i.e., 85% to 95% of companies are in the below 7% category.
- There is a sizable number of companies that assumed net yields above 7% with more widespread assumptions of yields for Schedule BA assets and equities.

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Andersen reported some of the upcoming activities of the Review Group:

- Reviewing reinsurance counterparty risk by sending requests for additional information from a targeted set of ceding companies, as relevant:
 - Description and reason for significant reinsurance-related ceded transactions.
 - Process and metrics used to evaluate the counterparty's asset risk and financial health.
- Continuing efforts to help ensure claims-paying ability even if complex assets do not perform as expected.

5. Heard an International Update

Tim Nauheimer (NAIC) reported that the International Association of Insurance Supervisors (IAIS) has completed numerous data calls and analyses as part of the Global Monitoring Exercise (GME), which includes individual insurer monitoring (IIM) and sector-wide monitoring (SWM). He added that the GME is part of the IAIS's holistic framework for systemic risk identification, which takes a broader approach to financial stability and macroprudential surveillance.

Nauheimer summarized with respect to the GME that the IAIS has done the following:

- Completed the IIM quantitative data analysis of about 60 insurers.
- Completed the quantitative and qualitative SWM data collection, which includes additional data on reinsurance and climate risk.
- Continues to analyze SWM reinsurance data.
- Continues to analyze SWM data to compare to IIM data.
- Published the Global Insurance Market Report (GIMAR) mid-year update in July that provides a summary of the initial outcomes of this year's data collections and highlights key themes identified for the 2023 GME as being:
 - Risks faced by insurers in light of the challenging macroeconomic backdrop, notably interest rate, liquidity, and credit risk.
 - Structural shifts in the life insurance sector, specifically the use of cross-border asset-intensive reinsurance.
 - The increased allocation of capital to alternative assets.
- Will complete the annual GIMAR publication in November, for which the NAIC will continue to monitor and contribute to the development of the report.

Nauheimer stressed that the IIM and SWM data collections help determine the scope for an annual collective discussion by the IAIS on potential systemic risk issues. He added that the IAIS held a global seminar in Seattle in June, where this year's collective discussion of insurers and SWM themes was approved. He said for the IIM collective discussion, the focus will be on firms identified by quantitative scoring, as well as some overarching themes related to financial stability that were identified through expert judgment. He added that the process resulted in the identification of six insurers for this year's collective discussion: two firms were included due to quantitative scoring; three firms were included due to expert judgment; and one firm as a top-up for regional balance. He said identification of the insurers is confidential, and the group-wide supervisors were sent questionnaires, which were due Aug. 11. He said the collective discussion will take place at the Macroprudential (E) Working Group and Executive (EX) Committee meetings at the end of September, in which the group-wide supervisors will provide an overview of the supervision of their insurers.

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Nauheimer reported that the IAIS has approved the updated IIM Assessment Methodology after the resolution of comments, but work on the following ancillary indicators to refine systemic monitoring will continue this year: 1) level 3 assets; 2) credit risk; 3) derivatives; and 4) reinsurance. He added that the IAIS Liquidity Workstream will meet at the end of August to analyze data received as part of the GME to continue to develop liquidity metrics, especially regarding an LST.

Nauheimer said the SWM overarching themes this year are:

- Managing increased interest rate, credit, and liquidity risks against a challenging macroeconomic backdrop.
- Cross-border reinsurance.
- Alternative assets.

Nauheimer reported that NAIC staff completed extensive questionnaires on each of the above risk themes that were due Aug. 11 and describe how the NAIC takes these risk themes into account in the U.S. regulatory system, including identification and monitoring tools in place. He added that NAIC staff shared the questionnaires with the Working Group for its input as well.

Nauheimer also reported that some of the additional climate data was proposed by the IAIS Climate Risk Steering Group (CRSG). He added that the IAIS released its first public consultation that covers the addition of new material into the IAIS Insurance Core Principles (ICPs) Introduction, work related to climate risk and governance, and the IAIS's plans to address climate more broadly. He said the CRSG met June 28 to discuss initial observations on the feedback received from the public consultation and initial feedback on the latest draft Application Paper materials on both climate-related market conduct considerations and climate scenario analysis. He added that the Application Paper, which is scheduled to be published for consultation by the end of 2023, contains guidance on scenario analysis in ICP 16 on enterprise risk management and ICP 24 on macroprudential supervision.

Nauheimer said the IAIS Macroprudential Supervision Working Group (MSWG) is conducting a holistic framework review of supervisory standards with a number of subcommittees of the MSWG reviewing SWM themes and future data collection points. He added that the MSWG has been engaged in providing educational sessions on asset-intensive reinsurance/cross-border reinsurance, including hearing many presentations from insurers and supervisors from across the globe that are similar to the ones heard by the Working Group and Task Force over the past year, but if new information is provided at the IAIS, NAIC staff will inform the Working Group and the Task Force.

Having no further business, the Financial Stability (E) Task Force and Macroprudential (E) Working Group adjourned.

SharePoint/NAIC Support Staff Hub/Committees/E Committee/FSTF/2023_2 Summer/Minutes

FSOC Analytic Framework and Non-Bank Designation guidance

High level overview
NAIC Financial Stability Task Force

Superintendent Beth Dwyer (RI)

Background

- The Dodd Frank Act gives FSOC authority to designate non-banks (including asset managers, insurers, etc.) as a threat to the financial stability of the U.S.
- A designation subjects a non-bank to enhanced supervision by the Federal Reserve (in addition to any existing supervision by primary regulators)
- FSOC previously designated insurers: AIG, Prudential, and Metlife in 2013-2014. Those designations rescinded or overturned 2016-2018.
- FSOC designation guidance was last modified in 2019.
- The general perception of the changes in 2019 is that they made it administratively harder for FSOC to designate firms.

New Guidance

- On 4/21/2023, FSOC released for public comment a new analytic framework for financial stability risk, and revised guidance for non-banks designations.
- FSOC characterized the changes as a restoration of pre-2019 guidance and additional clarity and transparency on the process.
- On 11/3/2023 voting members of FSOC adopted both documents.
- Significant changes include removing a cost/benefit analysis, equal weighting for designations with ABA, and not evaluating “likelihood” of systemic threats.

Analytic Framework

- A nonbinding approach to how FSOC will observe and analyze financial markets looking to spot systemic threats
 - Vulnerabilities: leverage, liquidity risk and maturity mismatch, interconnections, operational risk (i.e. cyber), complexity and opacity, inadequate risk management, concentration, “destabilizing activities”
 - Transmission channels: exposure, asset liquidation, critical function (substitutability), contagion
 - FSOC works with primary regulators to address risks that could lead to designation
 - FSOC may make recommendations to regulators or Congress

Non-bank Designations

- FSOC will monitor broad range of activities, markets, and entities using analytical framework guidance.
- Stage 1 - preliminary analysis based on public and regulatory data
 - Quantitative and qualitative considerations
 - No notice to non-bank before initiating stage 1, but 60-day notice before stage 2
 - Non-bank can submit information, meet with Council, and see data sources being used
- Stage 2 - in depth analysis and engagement with company and regulators
 - Extensive engagement with company, primary regulators, and FSOC
 - FSOC will provide specific aspects/concerns for company to respond to
- Designation
 - FSOC may designate a firm at the conclusion of stage 2 by a vote of 2/3 of members then serving and the FSOC Chair and reevaluate at least annually
 - Designated firms are subject to enhanced supervision by the Fed, in addition to existing oversight

Questions?

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Attachment Three
Financial Stability (E) Task Force
12/1/23



NATIONAL ASSOCIATION OF
INSURANCE COMMISSIONERS

**NAIC 2023 LIQUIDITY STRESS TEST FRAMEWORK
For Life Insurers Meeting the Scope Criteria**

December 1, 2023

DRAFT

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INTRODUCTION

Macroprudential Implications of a Liquidity Stress

Beginning mid-year 2017, the NAIC embarked on a project to develop a liquidity stress testing framework. While the NAIC has existing tools and processes for assessing liquidity risk at a legal entity level (i.e., 'inward' impacts to the insurer), there was recognition that the NAIC toolbox could be further enhanced with the addition of more granular data in the annual statement and a tool that would enable an assessment of macroprudential impacts on the broader financial markets (i.e., 'outward' impacts) of a liquidity stress impacting a large number of insurers simultaneously.

Post-financial crisis, there were several attempts to assess potential market impacts emanating from a liquidity stress in the insurance sector. Many of these analyses relied heavily on anecdotal assumptions and observations from behaviors of other financial sectors. To provide more evidence-based analyses, the NAIC decided to develop a Liquidity Stress Test (LST) Framework for large life insurers that would aim to capture the outward impacts on the broader financial markets of aggregate asset sales under a liquidity stress.

The stress test will be run annually and the findings, on an aggregate basis, reported annually as part of the NAIC's continuous macroprudential monitoring efforts. The NAIC's pursuit of the liquidity stress test should not suggest any pre-judgement of the outcomes. The NAIC believes there is value to the exercise whether it points to vulnerabilities of certain asset classes or markets or, alternatively, suggests that even a severe liquidity stress impacting the insurance sector is unlikely to have material impacts on financial markets. The NAIC liquidity stress testing framework is intended to supplement, not replace, a firm-specific liquidity risk management framework. The NAIC has not yet discussed steps that might be taken to address any identified vulnerabilities but acknowledges that any recommendations may require collaboration with other financial regulators.

The NAIC's revised proposed liquidity stress testing framework is contained in the pages that follow. The NAIC recognizes that, at least in the early years, the stress testing process and analyses will be iterative. We expect refinements as the framework is developed, especially after the first year's implementation.

BACKGROUND

NAIC Macroprudential Initiative

The NAIC's Macroprudential Initiative (MPI) commenced in 2017. It recognized the post-financial crisis reforms that became part of our Solvency Modernization Initiative (SMI) that continue to serve us well today. However, in the ensuing years since those reforms, insurers have had to contend with sustained low interest rates, changing demographics and rapid advancements in communication and technology. They have responded by offering new products, adjusting investment strategies, making structural changes, and expanding into new global markets. There are new market players, new distribution channels, and a complex web of interconnections between financial market players.

What has not changed since the financial crisis is the scrutiny on the insurance sector in terms of understanding how insurers react to financial stress, and how that reaction can impact, via various transmission channels, policyholders, other insurers, financial market participants, and the broader public.

The proposed work on macroprudential measures is reflective of the state insurance regulators' commitment to ensure that the companies they regulate remain financially strong for the protection of policyholders, while serving as a stabilizing force to contribute to financial stability, including in stressed financial markets. To that end, the NAIC's three-year strategic plan (2018-2020), "State Ahead", reflects the objective of "Evaluating Gaps and regulatory opportunities arising from macroprudential surveillance, and develop appropriate regulatory responses."

The NAIC's work on macroprudential surveillance is overseen by the Financial Stability Task Force of the NAIC Executive Committee. In April 2017, the Task Force was asked to consider new and

improved tools to better monitor and respond to both the impact of external financial and economic risks on supervised firms, as well as the risks emanating from or amplified by these firms that might be transmitted externally. The Task Force, in turn, focused its efforts on potential enhancements to identify and monitor liquidity risk, among other areas. More specifically, the Task Force was requested to further develop the U.S. regulatory framework on liquidity risk with a focus on life insurers due to the long-term cash-buildup involved in many life insurance contracts and the potential for large scale liquidation of assets.

Liquidity Assessment Subgroup

To carry out its work on assessing liquidity considerations, the Task Force established the Liquidity Assessment Subgroup (“Subgroup”) mid-year 2017.

Mandate

The charges and workplan of the Subgroup reflect the following assignments:

- Review existing public and regulator-only data related to liquidity risk, identify any gaps based on regulatory needs and determine the scope of application, and propose recommendations to enhance disclosures.
- Develop a liquidity stress testing framework proposal for consideration by the Financial Condition (E) Committee, including the proposed universe of companies to which the framework will apply (e.g., large life insurers).
- Once the stress testing framework is completed, consider potential further enhancements or additional disclosures.

In addition, a small informal study group comprised of regulators, industry participants and NAIC staff was formed to consider the specific data needs and technical aspects of the project. The study group is NOT an official NAIC working group. All recommendations from the study group must be vetted and considered by the Liquidity Assessment Subgroup and/or the Financial Stability (EX) Task Force according to NAIC procedures.

Data Gaps

Prior to undertaking work on the Liquidity Stress Test, the Subgroup constructed an inventory list of existing life insurer disclosures as of 2018 that contribute to an understanding of liquidity risk. When assessing the current state, the Subgroup recognized the availability of significant detailed investment-related disclosures but contrasted it to the relatively sparse liability-related disclosures. To remedy this imbalance, a blanks proposal was constructed to significantly increase the disclosures for life insurance products.

Specifically, the Analysis of Operations by Line of Business schedule was expanded from a single exhibit to five exhibits, one each for Individual Life, Group Life, Individual Annuity, Group Annuity, and Accident and Health. The Analysis of Increase in Reserves schedule was similarly expanded. Within each of the five new exhibits, columns were added for more detailed product reporting. For example, columns were added to the Individual and Group Life exhibits to capture universal life insurance and universal life insurance with secondary guarantees, and columns were added to the Individual and Group Annuity exhibits to capture variable annuities and variable annuities with guaranteed benefits. In addition, two new lines were added to the now five exhibits of the Analysis of Increase in Reserves schedule: one capturing the cash surrender value of the products outstanding and another capturing the amount of policy loans available (less amounts already loaned). A new addition was also proposed to the Life Notes to Financial Statement. The new Note 33 considered the type of liquidity concerns disclosed in Note 32 for annuities and deposit-type contracts and added disclosures for life insurance products not covered in Note 32.

These proposals were exposed and commented upon several times at the Liquidity Assessment Subgroup, the Financial Stability (EX) Task Force, and at the Blanks (E) Working Group. Ultimately, they were adopted by NAIC Plenary for inclusion in the 2019 Life Annual Statement Blank. As an interim step, The Financial Stability Task Force performed a data call requesting a few key lines of information from the newly adopted 2019 format of the Analysis of Operations by Line of Business schedule and the Analysis of Increase in Reserves schedule, as well as the new Note 33, but populated with 2018 year-end data. This data call was completed in July 2019.

Discussions with Insurers

During the latter part of 2017 and first quarter of 2018, the Subgroup conducted calls with several large life insurers who agreed to share their internal liquidity risk assessment processes. The dialogue provided extremely helpful input and informed the establishment of the initial direction of the Liquidity Stress Testing Framework. Feedback from these discussions include:

- Scope criteria should be risk-focused, not solely based on size.
- Stress test framework should align with internal management reporting and leverage the ORSA.
- Stress test should be principle-based and complement a company's internal stress testing methodology.
- Regulatory guidance should be provided to help define liquidity sources and uses, products/activities with liquidity risk, time horizons, level of aggregation, reporting frequency, and establishing stress scenarios.
- Public disclosure of results should be carefully considered to avoid exacerbating a liquidity crisis.

Regarding the specifics of liquidity assessments/stress test approaches, significant diversity in practices exist. Key observations in this regard included:

- Liquidity tests are performed at the material entity level and at the holding company level. Definitions of material entities differ.
- Most firms determine some sort of coverage ratio (Liquidity Sources) / (Liquidity Uses), for Base and Stress scenarios and monitor results to ensure they align with the firm's (internal) risk appetite. Categories of liquidity sources and uses differ across firms and assumptions vary depending on time horizon. Some insurers determine coverage ratios utilizing balance sheet values, applying different haircuts by asset class, time horizon and type of stress. Other insurers determine liquidity coverage gaps (Liquidity Inflows – Liquidity Outflows) utilizing a cash flow approach.
- Stress scenarios vary by company, reflecting a combination of market-driven, as well as idiosyncratic and insurer-specific scenarios.

- Time horizons tested also vary, typically ranging from 7 days to 1 year.

Regulatory Goals of the Liquidity Stress Test

- The primary goal of this liquidity stress testing, and the specific stress scenarios utilized, is for macroprudential uses – to allow the FSTF regulators to identify amounts of asset sales by insurers that could impact the markets under stressed environments. Thus, the selected stress scenarios are consciously focused on industry-wide stresses – those that can impact many insurers within a similar timeframe. These may not be the most stressful scenarios for specific legal entity insurers, or even their groups. Regulators have indicated the liquidity stress testing is also meant to assist regulators in their micro prudential supervision, in the context of being helpful for domiciliary and lead state regulators to better understand liquidity stress testing programs at those legal entities and groups. There is no intent to require these stress scenarios to be used by individual insurers for some sort of assessment or regulatory intervention mechanism. Similarly, there has not been any consideration given to requiring them in the management of any entities in receivership.
- Regulatory concerns regarding liquidity risk for legal entity insurers and/or groups is more about the stress scenarios of most concern to those entities (not those identified for macro prudential purposes). Similarly, when considering liquidity risk at a legal entity and/or group, regulators need to understand the insurer's entire risk management framework. Much of this understanding may come from the ORSA filings. Thus, the LST is not meant to be a legal entity insurer requirement, or used as a ranking tool, etc. However, it is recognized that simply reviewing these LST results may help regulators better understand the role of liquidity stress testing within the entities – which may result in more questions and information requests regarding the entities' own liquidity risk management framework and dynamics of their internal liquidity stress tests.

[Beginning of] 2023 Liquidity Stress Testing Framework – to be included/referenced in the NAIC Financial Analysis Handbook

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Section 1. Scope Criteria for Determining Groups Subject to 2023 LST

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HISTORY – Scope Criteria for the Initial 2020 LST:

In determining the companies subject to the liquidity stress test (LST), consideration was given to activities assumed to be correlated with liquidity risk. Another consideration was the desirability of tying data used in the criteria back to the statutory financial statements. Ultimately six activities were identified. Those activities are Fixed and Indexed Annuities, Funding Agreements, Derivatives, Securities Lending, Repurchase Agreements and Borrowed Money. Minimum thresholds were established for each of these six activities. A life insurance legal entity or life insurance group exceeding the threshold for any of the six activities is subject to the stress test (see Annex 1 for more details).

While the scope criteria only utilize statutory annual statement data, the stress test is not similarly limited. Thus, the stress test will consider many more liquidity risk elements than the scope criteria, and internal company data will be the source for many of those elements.

Just as the liquidity stress test structure and methodology may change over time, the scope criteria may also be modified, for example, in response to new data points in the NAIC Annual Statement Blank. The scope criteria will be reviewed annually.

Using the agreed criteria, NAIC staff obtained the amounts for all life insurance legal entities from the 2018 annual statutory financial statements (filed by March 1, 2019). If two or more life insurers were part of an insurance group with an NAIC group code, then the numbers for each of those legal entity life insurers was summed together to represent an insurance group result. Thus, a legal entity life insurer not in an insurance group can meet the threshold on its own, or the sum of legal entity life insurers in a group could meet the threshold. Twenty-three insurance groups met the initial scope criteria.

In establishing whether an insurer or group met or exceeded the threshold criteria, the Subgroup members supported using the most current single year activity rather than a multi-year average. This resulted in coverage amounts ranging from 60% to 80% of the industry total for each activity based on 2018 data. It was recognized that using single year activity could result in more instances of an insurance group being in scope one year and out of scope the next, but regulators viewed it more important to have the most recent financial data utilized for determining scope. To address concerns about insurers moving in and out of scope, regulatory judgment will be used to address an insurer’s exit from or entry to the scope of insurers subject to the liquidity stress test. Per revisions to the model Holding Company Act, the lead state regulator will consult with the Task Force in determining when it is appropriate to remove an insurer from the LST requirement if it no longer meets the scope criteria. Similarly, lead state regulators should have the ability to consult with the Task Force and require the LST from an insurer not meeting the scope criteria (e.g., an insurer close to triggering the scope criteria for more than one year).

CURRENT – Scope Criteria for the 2023 LST:

Regulators agreed to retain the same 6 criteria and thresholds from the 2020, 2021, and 2022 LST Scope Criteria for use as the 2023 LST Scope Criteria. The 2023 LST Scope Criteria have been applied to the 2022 annual statement data (data as of Dec. 31, 2022, filed by March 1, 2023).

Section 2. Liquidity Stress Test

2.1 Summary

The stress testing framework employs a company cash flow projection approach incorporating liquidity sources and uses over various time horizons under a baseline assumption and some number of stress scenarios (for 2023 there are 2 stress scenarios and also an insurer-specific request for information). The available assets are then recorded by asset category. The framework then calls for identification of expected asset sales by category, or other funding as allowed in the stress test, to cure any cash flow deficits (liquidity uses exceed liquidity sources) under the stress scenarios. The stress tests are to be performed at the legal entity level; the aggregated group does not perform the LST.

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2.2 Time Horizons

The time horizons chosen by regulators are 30 days, 90 days, and 1 year, because, overall, insurance products are designed to be for the benefit of customers as risk protection over the long term and not designed to provide short term liquidity like other financial products. Historical experience in times of stress demonstrate slow policyholder reaction in short periods of time, as opposed to an event that occurs over months or years. Features designed to protect the long-term nature of the product for the policyholders ultimately reduce the likelihood of policyholder reaction to short-term volatility in markets. Therefore, evaluating shorter than 30-day time horizons has been deemed not warranted for the overarching macroprudential purpose of gauging liquidity risk in the Life insurance industry.

Policyholders do not “run” from an insurer in times of economic stress to the extent depositors do from a bank, because insurance is purchased to obtain the protection insurance provides, not as a source of liquidity or discretionary funds. In the United States, life insurance and annuities are purchased primarily for long-term financial protections upon death or retirement. Surrendering a life insurance contract to harvest its cash surrender value would leave the policyholder without death benefit protection that would be expensive or impossible to replace at a future date. Surrendering a variable annuity contract would lock in potentially temporary decreases in account value and could result in the loss of living benefit protection that becomes more valuable when market conditions depress account values below trigger points. Further, mitigating contract features such as surrender charges and the insurer’s right to delay the processing of withdrawals and surrenders for up to 30 days are common.

There are also non-contractual mitigating factors at play, such as potential negative tax consequences, that further reduce the short-term nature of liquidity risk for life insurers.

Simply put, policyholders are highly disincentivized to give up the likely irreplaceable protection for which they have already paid. The run-like mass surrender of insurance policies would require large numbers of policyholders to act against their self-interest.

From a holistic risk perspective, liquidity stress is traditionally experienced on the asset side. One short-term consequence of market turmoil could be a requirement to post collateral in connection with existing derivative contracts. However, even in this scenario, collateral is typically posted in the form of securities, so a demand for cash is not generated.

We do acknowledge liquidity risk does exist with respect to shorter time horizons and that many insurers do consider shorter time horizons (7-days for example) as part of their internal liquidity stress testing framework. This is viewed as a cash management/Treasury function impacting the daily operations of individual insurers, however, that would not affect the industry as a whole. Hence, these considerations are typically reviewed as part of individual/microprudential surveillance efforts in the U.S.

2.3 Insurer's Internal Liquidity Stress Testing System

Insurers are to use their own internal liquidity stress testing system to perform the regulatory LST, adjusting for regulatory assumptions, metrics, etc., as specified in this document. For example, assessing materiality of stressed cash flows for inclusion in the liquidity uses and sources templates is per the insurer's own internal methodology, but determining which legal entities are to perform the LST and report on those templates is specified in this document. Insurers should provide a narrative description of their internal liquidity stress testing system and processes, including for example their materiality thresholds for stressed cash flows and methodology for converting foreign currencies to U.S. dollars (see Section 7. Reporting). The stress scenarios may vary from year-to-year and contain variations referred to as "What-if" scenarios. The following sections provide a further description of each of the key components of the framework.

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Section 3. Legal Entities Required to Perform the LST for Insurers Meeting the Scope Criteria

The scope of entities included within an insurance group for the purposes of liquidity stress testing to assess the potential for large scale liquidation of assets (i.e., the legal entities within the group which should perform the LST), should include:

- U.S. Life insurance legal entities, including reinsurers, regardless of corporate structure, so including captive (regulators specifically want all U.S. life insurance/reinsurance legal entities to perform the 2023 LST for informational purposes – future LST iterations may see a materiality consideration added);

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Non-guaranteed/market value separate accounts are not included in the 2023 LST. However, regulators may want to perform a separate account study in the future. The current thinking is that even though non-guaranteed/market value separate accounts may experience asset sales during stressed environments, those sales are at the policyholder’s discretion and do not generate liquidity stress for the insurer/group. As such they are deemed other market activity rather than insurance entity activity. Thus, for annuities that provide both non-guaranteed and guaranteed benefits, insurers should only include the cash flow impact of the guaranteed benefits. Though not required for the 2023 LST, filers should consider including all cash flows related to assets and liabilities that may be grouped with general account assets in a liquidation regardless of Separate Account classification as insulated or non-insulated, explicit or implicit guarantee, unitized or non-unitized.

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~~as separate accounts remain under review for further LST enhancements, insurers should consider including Separate Account products backing general account products (e.g., PRT, RILA) that have a separate account guarantee.~~

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- Non-U.S. life insurance/reinsurance legal entities should perform the 2023 LST if they pose material liquidity risks to the U.S. group (see below on non-U.S. legal entities).
- Where applicable, holding companies that could be a source or draw of liquidity to the life insurance legal entities; and
- Non-life insurance entities and non-insurance entities with material sources of liquidity, or that carry out material liquidity risk-bearing activities and could, directly or indirectly, pose material liquidity risk to the U.S. group. This materiality consideration should occur within the context of the specific stress scenario (and “what if” modification if applicable). The materiality criteria and initial list of legal entities in scope should be reviewed by the lead state regulator and modified by the insurer as needed based on regulator direction.
 - Non-U.S. legal entities (including non-U.S. holding companies) are subject to this materiality consideration and should be subject to performing the LST if they pose material liquidity risk to the U.S. group.

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- U.S. non-life insurers and reinsurers are not automatically exempted. If the U.S. non-life insurer poses material liquidity risk, per the stress scenario, to the U.S. group, then that legal entity insurer should perform the LST.
- Legal entity asset managers and mutual funds (both U.S. and non-U.S.) are **excluded** from performing the 2023 LST.
 - However, those legal entities performing the LST (e.g., holding companies that could be a source or use of liquidity for the life insurers) must reflect any material stressed cash flows from/to the legal entity asset manager/mutual fund in their 2023 LST results (e.g., the liquidity sources and liquidity uses templates, as they do with any other type of legal entity that has material stressed cash flows from/to the legal entities performing the LST).
 - If such material stressed cash flows from/to the legal entity asset manager/mutual fund exist, the regulators want specific disclosures on those in the results (either by adjusting the templates to include a line for these and/or in the narrative/explanatory disclosures submitted along with the templates).
 - Examples of when such legal entity asset manager/mutual fund considerations and disclosures would need to be made for a specific stress scenario include:
 - If the holding company or another legal entity(ies) in the group is expected to fund a material liquidity shortfall of a mutual fund/asset manager (i.e., redemptions exceed the ability to sell assets), then the expected cash flows must be reflected (especially where there are established inter-affiliate support agreements);
 - If the holding company or another legal entity(ies) in the group is expected to provide capital to the mutual fund/asset manager or is expecting dividends from them, the material expected cash flows must be reflected; and
 - If the asset manager manages financial instruments under which it retains some risk, such as new European CLOs, or has contractual risk retention agreements for U.S. CLOs, the required risk retention limit (5% for Europe)

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must be reflected if sourced from the holding company or another legal entity(ies) in the group and considered material.

- Legal entity banks (both U.S. and non-U.S.) are **excluded** from performing the 2023 LST.
 - However, those legal entities performing the LST (e.g., holding companies that could be a source or use of liquidity for the life insurers) must reflect any material stressed cash flows from/to the legal entity bank in their 2023 LST results (e.g., the liquidity sources and liquidity uses templates, as they do with any other type of legal entity that has material stressed cash flows from/to the legal entities performing the LST).
 - If such material stressed cash flows from/to the legal entity bank exist, the regulators want specific disclosures on those in the results (either by adjusting the templates to include a line for these and/or in the explanatory disclosures submitted along with the templates).
 - Examples of when such legal entity bank considerations and disclosures would need to be made for a specific stress scenario include:
 - If the holding company or another legal entity(ies) in the group is expected to fund a material liquidity shortfall of a bank, then the expected cash flows must be reflected (especially where there are established inter-affiliate support agreements); and
 - If the holding company or another legal entity(ies) in the group is expected to provide capital to the bank or is expecting dividends from them, the material expected cash flows must be reflected.

For 2023, the legal entities identified in the bullets above, per a Company's ORSA and/or other materiality criteria applied to the specific stress scenario, must be considered as material or identified as carrying out material liquidity risk bearing activities and hence subject to internal liquidity stress testing requirements. Although a legal entity in the group may not be required to perform the stress test due to materiality considerations or exemptions, those entities' material cash impacts on entities performing the stress test must be captured in the sources and uses

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templates of the entities performing the LST. The insurer will need to disclose the materiality criteria (agreed upon by the Lead State regulator) used in determining the legal entities subject to the 2023 LST in the submission of its results. Based on the results of the 2020 initial LST exercise and those of the 2021, 2022, and 2023 LST filings, the Subgroup will determine if additional materiality criteria should be developed to ensure better comparability amongst insurers.

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Section 4. Cash Flow Approach – Liquidity Sources and Uses

The Liquidity Stress Testing Framework is anchored by a cash flow approach, utilizing companies' actual cash flow projections of sources and uses of liquidity over various time horizons based upon experience and expectations. This contrasts with a Balance Sheet Approach, which employs static balance sheet amounts and generic assumptions about asset liquidity. While a Balance Sheet Approach is easier to apply and provides calculation consistency (and thus the perception of increased comparability), its 'one-size fits all' approach could result in a misleading assessment of liquidity risk and fail to capture certain asset activities or product features under different stress scenarios and time horizons. The cash flow approach is deemed more dynamic and hence to capture liquidity risk impacts more precisely.

The insurer should produce cash flow projections for sources of liquidity and uses of liquidity that cover: operating items, investments and derivatives, capital items, and funding arrangements. (See Liquidity Sources and Uses templates in Section 7). To clarify an issue regarding funding arrangements, the projected cash flows for liquidity sources and uses should include already existing funding arrangements such as FHLB draws outstanding in the current time period. Also, specific to the holding company, these projected cash flows for liquidity sources and uses should include material non-U.S. impacts as well.

The insurer will produce these liquidity sources and uses cash flow projections in a baseline, normal course of business scenario, for each time horizon. The insurer will also produce these cash flows for each time horizon for a specific number of required stress scenarios (for 2023 there are 2 stress scenarios and also an insurer-specific worst-case scenario).

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4.1 Baseline Assumptions for Cash flows

Baseline (pre-stress) cash flows are the insurer-specific cash flows from normal expected operations. Insurers should prepare cash flow projections under normal operating conditions and report the net cash flows (projected liquidity sources less uses) for each time horizon. These cash flow projections should be consistent with those used for internal baseline liquidity forecasts, such as those used for financial planning and analysis (FP&A), risk management, etc. A positive net cash flow is presumed in the baseline cash flows since companies are usually not expected to be operating in a net cash flow deficiency state.

Section 5. Stress Scenarios and their Assumptions

For year-end ~~2023~~ there are two regulatory liquidity stress scenarios: an adverse liquidity stress scenario for insurers, and an interest rate spike scenario. There is also an insurer-specific information request for each group's own most adverse liquidity stress scenario(s). The adverse liquidity stress scenario contains a regulator provided narrative, regulator-prescribed assumptions, and company-specific assumptions. The interest rate spike scenario allows all other narrative description components and key metrics (including how much interest rates spike) to be provided by each company. The insurer-specific information request contains a company provided narrative and a description of key company metrics. The regulator provided narrative will be a qualitative description of the specified stress scenario to highlight the particular risks and sensitivities associated with that stress scenario. The regulator prescribed assumptions are specific parameters insurers should incorporate into their process for a particular stress scenario. Company-specific assumptions should be consistent with the information provided in the regulator provided narrative and regulator prescribed assumptions, and represent the detailed assumptions needed for a specific company's liquidity stress testing process. Examples of where companies should provide their assumptions include: debt issuance, lapse sensitivity, new business sensitivity and mortality sensitivity. Regulators expect insurers to utilize policyholder behavior assumptions (e.g., surrenders and policy loan withdrawals, existence of new sales activity) as well as the insurer's response (e.g., assuming delays in payment of policyholder benefits), consistent with the severity of the stress, and to provide very thorough explanatory

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information. All key business activities and product- type impacts to liquidity should be considered by the companies.

If the insurer’s internal model does not utilize a specific economic and/or company-specific assumption included in this document, the internal model does not need to be modified to incorporate it. However, if the insurer’s internal model does utilize a specific economic and/or company-specific assumption included in this document, the insurer should use the approach outlined below to calculate the value for that assumption. (This emphasizes the macro surveillance benefit of the 2023 LST, allowing for a level of consistency of assumptions across the industry. As discussed previously, this is not meant to specify assumptions used by the insurers in their own internal liquidity stress testing work.) If there is no specific value included in the 2023 LST Framework and instead there is an illustrative value or suggested guidance, the company should use a value consistent with the illustrative value or suggested guidance. For example, guidance is given below on using Moody’s values for migration, default, and recoveries. However, insurers may use S&P data or other appropriate data sources.

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5.1 Adverse Liquidity Stress Scenario for Insurers

5.1.1 Narrative

Insurers are required to apply an adverse liquidity stress scenario as one of the two stress scenarios. The following is a summary of market conditions in the adverse scenario extracted from the Federal Reserve Board’s 2017 Supervisory Scenarios for Annual Stress Tests Required under the Dodd-Frank Act Stress Testing Rules and the Capital Plan Rule.

The adverse scenario is characterized by weakening economic activity across all economies included in the scenario. This economic downturn is accompanied by a global aversion to long-term fixed-income assets that, despite lower short-term rates, brings about a near-term rise in long-term rates and steepening yield curves in the United States and the four countries/country blocks in the scenario.

The economic indicator levels described below provide the backdrop for the economic climate insurers should assume in the adverse scenario. The actual levels insurers should use in the adverse scenario are provided in Annex 2.

- Macroeconomic
 - Real GDP falls slightly more than 2 percent from the pre-recession peak in the fourth quarter of 2016 to the recession trough in the first quarter of 2018.
 - *Unemployment rate increases.*
 - *Headline CPI falls and then rises over the scenario period.*
- Interest Rates and Credit Spreads
 - *Short-term Treasury rates fall and remain near zero throughout the stress.*
 - *10-year Treasury yields rise.*
 - *Investment Grade (IG) corporate credit spreads widen.*
- Asset Valuations
 - *Equity prices decline by roughly 40%.*
 - *The Volatility Index (VIX) peaks at approximately 35.*
 - *Housing prices and commercial real estate prices decline through 8 quarters.*
- Description of International Market Conditions
 - *Recessions and slowdowns in growth are experienced in the Euro area, United Kingdom, Japan, and developing Asia economies.*
 - *All foreign economies experience a decline in consumer prices.*
 - *U.S. Dollar appreciates against the Euro, British Pound, and developing Asia currencies.*
 - *U.S. Dollar depreciates modestly against the Japanese Yen, driven by flight-to-safety capital flow.*

5.1.2 Regulator-Prescribed Assumptions

Insurers should utilize the values for the economic indicators from the Federal Reserve Board's annual Supervisory Scenarios for Annual Stress Tests Required under the Dodd-Frank Act Stress

Testing Rules and the Capital Plan Rule as the basis for scenario assumptions, Table A.1 Historical data and Table A.5 (Annex 2i, A) Supervisory adverse scenario. Insurers should use the version published in February 2017 (refer to the tables in Annex 2i). Specifically, insurers should run the adverse liquidity stress scenario using the deltas for the Treasury curve, Corporate spreads, GDP, Unemployment, U.S. Inflation (CPI), Housing Price Index (HPI), S&P 500 index (SPX SPOT), Commercial Real Estate Index (CREI) and VIX index. These economic variables should be used to the extent these variables are included in an insurer's internal liquidity stress test process or models.

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Insurers should apply the same change in economic variables experienced between Q4 2016 Table A.1 and the stress scenarios in Table A.5 to current economic variable levels (Annex 2i, D). Insurers should use the tables in Annex 2i for an illustrative example of how the deltas from the 2017 Fed's CCAR are applied to the current reference quarter (Q4 2020) for the 2020 LST (Annex 2i, B). For example, insurers should use 2023 (or most recent year-end) 10 Yr. Treasury rates and apply the same percentage or absolute b.p. change shown from Q4 2016 to the 2017 Table A.5 amounts in their 2023 LST stress scenarios. Table C (Annex 2i, C) shows the 2017 deltas applied to 2021 year-end levels on an absolute and percentage basis for 3 month and 1-year horizons for ease of use. The deltas to apply are provided for the 30-day, 90-day and 1-year horizons. Note, the tables also include structured spread assumptions described below in section 5.1.4. The tables are included in Annex 2i of this document.

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In addition, other market indicators are necessary for insurers to apply to stressed cash flows and to assess the impact on expected asset sales. These are as follows (with details to be found in Annex 2):

- Market Capacity Assumption
- Economic Variables for Adverse Scenario
- SWAP Spreads
- Swaption Volatility
- Credit Assumptions: Moody's Transition Matrix/Migration Rates

- Credit Assumptions: Moody's Default Table
- Credit Assumptions: Moody's Recovery Rate Table

Necessary edits for 2023 year-end values will be posted as Lead State Guidance to the Annexes in early 2024.

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5.1.3 Market Capacity Assumption

The following is suggested guidance to determine market constraints on asset categories to be sold in times of stress. It represents standards followed by many insurers to estimate assets sales by stress scenario, asset category and time horizon that can be sold without meaningfully impacting the entire market by widening bid-offer spreads. We recognize each company has its own individual methodology for determining potential asset sales under stress, and we request a written narrative be provided as to how they make their determination.

Once an asset class has been identified as available to be sold to satisfy a cash deficiency from cash flow stress testing, the insurer should calculate its percentage of the total amount issued and outstanding. Next the insurer should obtain average daily trading volumes (ADTV) and make an assumption for the haircut amount to apply to that volume to reflect stressed conditions (the "haircut ADTV"). Next, the insurer would apply its calculated percentage of total outstanding owned to the haircut ADTV, and the result would be divided by the number of days in the stress testing time horizon to arrive at a daily amount that can be sold. This daily amount able to be sold would be multiplied by the number of days in the prescribed time horizon: 30 days for the 30-day horizon, 60 days for the 90-day horizon (31-90 days) and 274 days for the 1-year horizon (91-365 days). An illustrative example best explains the above-described process.

Illustrative example (also included in Appendix 2ii):

Step 1: Estimate Unconstrained Sales Per Day

Insurer A has a \$100 billion portfolio of investment-grade corporate bonds, priced at par. Insurer A estimates that it holds approximately 5% of outstanding corporate bonds. In the

adverse liquidity stress scenario, Insurer A's unconstrained liquidity stress testing model assumes that it can sell:

Time Horizon	% Able to Be Sold	Sale Price	Total Sale	Sales / Day
First 30 Days	10%	97	\$9.7 B	\$440 M
31-90 Days	20%	94	\$18.8 B	\$430 M
91-365 Days	50%	90	\$45.0 B	\$230 M

Step 2: Add Market Capacity Constraint

Assume the average daily trading volume in the secondary market for investment grade corporate bonds has been \$13.0 Billion over the past year. Insurer A estimates that trading volumes would decline by 40% in the adverse liquidity stress scenario to \$8.0 B per day. Since Insurer A is 5% of the market, Insurer A can only trade \$400 M per day (\$8B x 5%) without paying a significant illiquidity premium and impacting the overall market.

Insurer A then repeats this process for every asset class in its investment portfolio.

Time Horizon	Unconstrained Sales / Day	Market Capacity Assumption	Impact
First 30 Days	\$440 M	\$400 M	(\$40 M)
31-90 Days	\$430 M	\$400 M	(\$30 M)
91-365 Days	\$230 M	\$400 M	\$0

5.1.4 Economic Variables for Adverse Scenario

Insurers should use Annex 2i and 2iii to assist in determining cash flows, asset values and the quantity of assets to be sold in stressed markets. For baseline values, the industry shall submit year-end spreads to the regulators shortly after year-end. The regulators will review and approve the values for use in the table for liquidity stress testing purposes. Structured spread data was derived from the JPMorgan ABS Weekly Asset Spread Datasheet. The spreads were scaled to a stressed economic environment consistent with an adverse scenario as described by the Fed, described above and adopted for this stress testing. For the 2020 LST, economic conditions experienced in March of 2020 were deemed consistent with an adverse scenario. Therefore, structured spreads from March 2020 were used as the basis for the stressed spreads assumptions for insurers to use in their stress testing scenario for the 30-day, 90-day and 1-year horizons. Note, to calculate structured spreads for CLO/CDO 5.5-7 year and ABS Auto3 year, it was necessary to construct a Treasury yield curve with 3-year and 7-year points. These points were calculated using a straight-line linear interpolation method. For the 2023 LST, the same March 2020 structured spreads were deemed appropriate for use.

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Regulators ask industry members to agree on one set of structured spread values amongst themselves to submit for approval, not each insurer submitting values that each need to be approved. Regulators and/or the NAIC need to do a reasonableness check of current baseline/market levels of spreads insurers use before applying the stressed amounts in the JPMorgan spreadsheet. For example, if current spreads are already greater than the JPMorgan stressed spread amounts, regulators may have to consider alternatives or additional stressed levels. One agreed upon set of values will help provide uniformity, consistency, and comparability of stress testing results across insurers.

When utilizing these spreads, insurers should assume the percentage increase in spreads experienced in March 2020 from the JPMorgan ABS Weekly Asset Spread Datasheet; and apply the absolute increase to the agreed upon December 31 baseline spreads. These tables are provided in Annex 2i, B.

Since the reasonableness check is merely a check of current market rates, it is not anticipated that it will be burdensome for insurers to provide an agreed upon set of December 31 baseline values to regulators by January 31 of each year or for the regulators to be able to respond by February 28 of every year to allow insurers sufficient time to incorporate into their stress testing framework. Baseline amounts are included in Annex 2i, B.

For the 2023 LST – NAIC values are to be established as Lead State guidance in early 2024 after the 2023 LST Framework has been adopted. These NAIC values will be established using the industry developed process.

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5.1.5 SWAP Spreads

Stressed spread levels may impact assets prices for expected sales calculations necessary for the stress scenarios. Insurers should complete the SWAP Spread table in Annex 2iv to document assumptions used in determining asset values and the quantity of assets to be sold in stressed markets. SWAP spread source data is no longer provided in the Federal Reserve’s H.15 FRED data. Use of Bloomberg Swap Spreads is preferred – if options exist within Bloomberg, identify which option was used. If a different source from Bloomberg is used, then identify the source and option.

5.1.6 Swaption Volatility

Insurers should use the table in Annex 2v to assist in determining asset values and the quantity of assets to be sold in stressed markets. Insurers should obtain the information to populate the table using Bloomberg’s Swaption Volatility for various time horizons and expiry. For consistency, insurers should use the table found on Bloomberg at NSV [Go].

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5.1.7 Moody's Transition Matrix/Migration Rates

Insurers should use the table in Annex 2vi to assist in determining corporate credit migrations, asset values and the quantity of assets to be sold in stressed markets. The table is imported from Moody's Corporate-Global: Annual default study, Exhibit 36 - Average one-year alphanumeric rating migration rates, 1983-2021. If available, insurers should use the equivalent Moody's tables for U.S. Public Finance for municipal bonds and the appropriate Moody's tables for structured /asset-backed securities. Alternative sources may be used but should be disclosed as well as the rationale for their use.

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5.1.8 Moody's Default Table

Insurers should use the table in Annex 2vii to assist in determining asset values and the quantity of assets to be sold in stressed markets. The table is imported from Moody's Corporate-Global: Annual default study, Exhibit 41 - Average cumulative issuer-weighted global default rates by letter rating, 1983-2021. Insurers should use the equivalent Moody's tables for U.S. Public Finance for municipal bonds and the appropriate Moody's tables for structured /asset-backed securities. Alternative sources may be used but should be disclosed as well as the rationale for their use.

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5.1.9 Moody's Recovery Rate Table

Insurers should use the table in Annex 2viii to assist in determining asset values and the quantity of assets to be sold in stressed markets. The table is imported from Moody's Corporate-Global: Annual default study, Exhibit 8 - Average corporate debt recovery rates measured by ultimate recoveries, 1987-2021. Insurers should use the equivalent Moody's tables for U.S. Public Finance for municipal bonds and the appropriate Moody's tables for structured /asset-backed securities. Alternative sources may be used but should be disclosed as well as the rationale for their use.

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If relevant for a given insurer, the adverse liquidity stress scenario for insurers can be run considering sources other than expected asset sales (e.g., FHLB credit line draws, bank lines of credit and holding company contributions). Should that be the case, the insurer must clearly identify the sources other than asset sales utilized to meet expected liquidity deficiencies.

5.1.10 “What If” Modification

The “What if” modification to the adverse liquidity stress scenario removes the ability for insurers to use extraordinary internal and external funding sources to satisfy any liquidity deficiency under stress, i.e., no actions taken in response to the stress (as opposed to ongoing operational funding agreements included in the insurer’s baseline templates) or in response to a liquidity deficiency. Intragroup “keep well” agreements would be considered extraordinary transactions. Thus, expected asset sales will be the primary source of meeting any liquidity deficiency for the “What if” scenario. Any existing funding such as commercial paper will not be assumed to roll, nor will FHLB facilities ability to roll upon maturity.

5.1.11 Company-Specific Assumptions

Insurers must construct the assumptions needed for their internal models to run the above adverse liquidity stress scenario for insurers. Company specific assumptions should be consistent with the above scenario as narrative and regulator prescribed assumptions. Examples include the inability to roll or issue new debt, potential increases in lapse rates, new business sensitivity, mortality experience and policyholder behavior (e.g., surrenders and policy loans).

5.2 Interest Rate Spike Scenario

5.2.1 Narrative

Insurers should run an interest rate spike stress test that resembles the late 70’s/early 80’s inflationary period as it most closely mirrors the regulatory desired interest rate spike scenario. Historical data from the late 70’s/early 80’s show the following economic conditions:

- Inflationary forces caused interest rates to rise quickly.
- Investors rotated out of fixed income and into equities, real estate, and commodities.
- Central bank responded by tightening monetary policy in tandem, eventually causing the yield curve to invert.

Insurers should provide a detailed narrative outlining their scenario and assumptions around general economic conditions bulleted above and specific assumptions for economic variables for each time horizon. The economic variables in the table below and the amount of expected

movement in each variable should be fully described in the narrative to the extent are used in a company's internal model. The table outlines the directional movement of the relevant economic indicators. Insurers should specify the amount of movement for each variable they consider to be part of the scenario for a severe interest rate spike. For example, insurers may indicate a parallel shift in Treasury rates up 100bps in the first 30 days, up 200bps in 90 days and 300bps over 12 months. The table is a guide and not to be interpreted as a strict template and may be supplemented or customized by the insurer. Narrative/Explanatory disclosures should explain these assumptions.

5.2.2 Regulator-Prescribed Assumptions

Regulators did not adopt any regulator-prescribed assumption values for this stress scenario. Instead, they provided the below regulator guidance for insurers to use when establishing their own company specific assumptions for this stress scenario.

Economic Variable	Expected Movement	Comments
Treasury rates	Increase rapidly	Critical factors for modeling impacts to asset prices, collateral flows, and product cash flows
Equity prices	Increase rapidly	
Credit spreads	Increase moderately	
Inflation rates	Increase rapidly	These factors help define the macroeconomic conditions of the scenario
Real GDP growth	Flat	These factors help define the macroeconomic conditions of the scenario
Unemployment rate	Flat	
Real estate prices	Increase	
Swap spreads	Increase	Impact derivative collateral requirements
FX rates	Unclear	
Implied volatility	Increase	
Credit assumptions (transition, default, recovery rates)	Unclear	May not be an important assumption to define for the scenario

5.2.3 Company-Specific Assumptions

Insurers must construct the assumptions needed for their internal models to run the above stress scenario. Companies are encouraged to provide more information beyond these guidelines as they feel is appropriate to help regulators understand their assumptions for the scenario.

Company specific assumptions should be consistent with the stress scenario’s narrative and regulator prescribed assumptions. Based on the 2022 significant increases to inflation and interest rates, insurers should consider appropriately stressed interest rates in the 2023 LST to ensure a “severe interest rate spike.”

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5.3 Insurer Specific Information Request - Worst-Case Scenario

5.3.1 Narrative

This information request requires insurers to provide a detailed narrative of their most severe liquidity stress scenario(s) to obtain greater insight to the drivers of liquidity risk for specific insurers. The most severe scenario should be one that results in the largest liquidity deficiency (liquidity sources less uses) from their existing internal liquidity stress testing process. The scenario should be focused on the insurer’s internal model scenario with the worst-case outcome for the group. Regulators may use this information to inform future prescribed stress scenarios.

Insurers should provide a comprehensive narrative describing the stress scenario(s) and the economic environment(s). This stress scenario(s) could be a combination of multiple stressors. Insurers should review these scenarios to ensure they are worst case for their business model, products, etc., particularly if no liquidity deficiencies are identified.

Section 6. Available and Expected Asset Sales

Once the stressed sources and uses of liquidity have been established, and the net cash flows calculated, insurers then project the assets available at the end of the time horizon by asset category (please refer to the asset categories in the Assets Template in Section 7). The valuation of available assets for the baseline scenario utilizes current and projected asset values for a normal operating environment. The valuation of available assets for a stress scenario will be based upon fair value haircuts per the specific stress scenario narrative, its regulatory prescribed assumptions, and/or the company assumptions based on the narrative and regulatory prescribed assumptions (e.g., fair market value haircuts and capacity indicators). Note: Any securities pledged as part of institutional funding agreements (e.g., FHLB) should be excluded and

considered encumbered. However, any pre-pledged assets that are not securing credit that has been extended and remains outstanding (i.e., excess) should be considered unencumbered.

To the extent that stressed cash inflows are insufficient to meet the anticipated cash outflows, the insurer must provide for cash flows to meet the deficiency. Unless a stress scenario (or “What-if” modification of a stress scenario) indicates otherwise, the insurer can utilize internal and external funding sources (e.g., FHLB new draws) as well as asset sales to satisfy a liquidity deficiency. Any expected asset sales must be reported in the appropriate column(s) of the template. Insurers decide which categories of available assets to sell, as well as the quantity to sell. (Please refer to the Assets Template in Section 7.)

Asset sales will appear in two different places - 1) within the liquidity sources template for expected/planned activity during the time horizon (pre-liquidity deficiency calculation), and 2) in the assets template for any amount of asset sales used to meet a liquidity deficiency (Liquidity Sources less Liquidity Uses). If an insurer has no liquidity deficiency, then there are no asset sales needed in the Assets Template (though available assets still apply). Similarly, if cash on hand was sufficient to meet the liquidity deficiency and the insurer chose to utilize that cash, then no asset sales would be reported in the Assets template.

The expected asset sales amounts calculated based on the insurer’s own models should also be subjected to portfolio manager and/or Chief Investment Officer (CIO) feedback. This feedback may take the form of “topside” adjustments to the expected asset sales. Regulators expect robust disclosures around the chief investment officer’s (or equivalent title or designee) assumptions and decisions on expected asset sales. The intent is for these asset sales to most accurately represent what actions the insurer could reasonably take in the given scenario, market conditions, and the company’s anticipated investment policy and/or strategy.

Section 7. Reporting

Insurers should submit data in the reporting template for liquidity sources, liquidity uses, and assets (available assets and expected asset sales) in U.S. dollars. These templates utilize

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categories for 30-day, 90-day and 1-year time horizons. The assets template further illustrates available assets and final expected asset sales by asset sub-category to cover any liquidity deficiency (negative amounts of net liquidity sources less liquidity uses over the prescribed time horizons). Use of these consistent sub-categories of assets is critical for allowing the Task Force to aggregate the asset sales results.

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Liquidity Sources and Liquidity Uses Templates:

A liquidity sources report and a liquidity uses report should be generated for each legal entity within the group that was subjected to liquidity stress testing, using the NAIC templates. These legal entity amounts should also be aggregated into a group liquidity sources report and a group liquidity uses report for submission (the LST is not performed at the group level; rather it is performed at the legal entity level and those results are aggregated to present a group level report).

- For the Baseline, the Adverse Liquidity stress scenario, and the Interest Rate Spike stress scenario, Liquidity Sources and Liquidity Uses templates at both the individual entity level and the aggregated group level are to be submitted.
- For the “What If” Variation of the Adverse Liquidity stress scenario, a group level Liquidity Sources template and/or a group level Liquidity Uses template is only required if there is a material difference from the Adverse Liquidity stress scenario’s group level Liquidity Sources and Liquidity Uses templates.

Assets Template:

As with the Liquidity Uses and Liquidity Sources templates, the Assets template is to be generated for each legal entity performing the LST. For the 2023 LST, the insurer may submit the assets template at the group level only, without submission of the legal entity asset sales templates.

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- A group level assets template is required for the Baseline and all stress scenarios, including the “What If” variation of the Adverse Liquidity stress scenario.

Modification of Templates:

Insurers are allowed to add lines to the templates to provide more detailed breakdown of existing categories (e.g., for cash flows to/from legal entity asset manager/mutual funds as well as banks), but deletions of existing lines/categories are highly discouraged.

Submission Deadline:

The reporting templates and many other narrative disclosures referenced in this document are to be submitted to the Lead State by June 30 of every year.

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Section 8. Templates

8.1 Liquidity Sources Template

Cash Flow Sources	CF Type	CF Category	Group Summary			Legal Entity 1		
			1 Month	3 Month	12 Month	1 Month	3 Month	12 Month
Sources	Operating	Premiums and Deposits (Renewal / New Business)	-	-	-	-	-	-
		Cash Charges / Fees	-	-	-	-	-	-
		Reinsurance Recoverables	-	-	-	-	-	-
		Expenses - Interscompany Settlements	-	-	-	-	-	-
		Tax Payments (Inflows)	-	-	-	-	-	-
		Other Flows	-	-	-	-	-	-
	Investment and Derivatives	Principal and Interest	-	-	-	-	-	-
		Dividends / Distributions	-	-	-	-	-	-
		Initial and Variation Margin Received	-	-	-	-	-	-
		Other Collateral Received	-	-	-	-	-	-
		Asset Sales (Pending Settlement)	-	-	-	-	-	-
		Other Flows	-	-	-	-	-	-
	Capital	Capital Contributions	-	-	-	-	-	-
		Commitments	-	-	-	-	-	-
		Dividends from Subsidiaries	-	-	-	-	-	-
		Other Flows	-	-	-	-	-	-
	Funding	Debt Issuance / Refinancing	-	-	-	-	-	-
		GLCs	-	-	-	-	-	-
		FFLB	-	-	-	-	-	-
		Repo / Securities Lending	-	-	-	-	-	-
Credit Facilities (incl. Contingency Funding Facilities)		-	-	-	-	-	-	
Intercompany Loans		-	-	-	-	-	-	
Commercial Paper		-	-	-	-	-	-	
Other Flows		-	-	-	-	-	-	
Total Sources (before Asset Sales)			-	-	-	-	-	

Note 1: Certain flows could be settled in securities (e.g., margins on derivatives, capital contributions/dividends, etc.). See the more specific Security Collateral guidance within the Excel templates.

Note 2: Asset Sales (pending settlement) should include trades executed prior to the reporting date with a known settlement date after the reporting date (for example 12/30 trade date and 01/03 settle date).

Note 3: Asset Commitments should include anticipated cash flows related to settlement of a future obligation to a counterparty to the extent, and in the amount, appropriate for the specific stress scenario and economic assumptions. Examples could include capital calls for alternative investments, mortgage loan fundings, etc., and should include each company's best estimate as to what they would expect to fund under each scenario. If these commitments have been explicitly prefunded/collateralized by highly liquid assets, asset commitments should be reported on a net basis, including proceeds from the sale of the highly liquid assets in an amount consistent with the specific stress scenario and economic assumptions. This line item may include some percentage amount of commitments to fund private placement revolvers consistent with the specific stress scenario and economic assumptions, but revolvers and lines of credit themselves should be captured in the credit facilities line in the Sources Funding section.

8.2 Liquidity Uses Template

Cash Flow Uses	CF Type	CF Category	Group Summary			Legal Entity 1			
			1 Month	3 Month	12 Month	1 Month	3 Month	12 Month	
Uses	Operating	Non-Selective Benefits / Claims	-	-	-	-	-	-	
		Elective Benefits / Claims	-	-	-	-	-	-	
		Commissions	-	-	-	-	-	-	
		Reinsurance Payables	-	-	-	-	-	-	
		Expenses - Other	-	-	-	-	-	-	
		Expenses - Intercompany Settlements	-	-	-	-	-	-	
		Insurance Product Commitments	-	-	-	-	-	-	
		Tax Payments (Outflows)	-	-	-	-	-	-	
		Other Flows	-	-	-	-	-	-	
	Investment and Derivatives	Asset Commitments	-	-	-	-	-	-	
		Initial and Variation Margin Paid	-	-	-	-	-	-	
		Other Collateral Pledged	-	-	-	-	-	-	
		Asset Purchases (Pending Settlement)	-	-	-	-	-	-	
		Other Flows	-	-	-	-	-	-	
	Capital	Shareholder/Policyholder Dividends	-	-	-	-	-	-	
		Capital Contributions to Subsidiaries	-	-	-	-	-	-	
		Dividends to Parent	-	-	-	-	-	-	
		Other Flows	-	-	-	-	-	-	
	Funding	Debt Maturities / Debt Servicing	-	-	-	-	-	-	
		GICs Benefits / Maturities	-	-	-	-	-	-	
		FHLB	-	-	-	-	-	-	
		Repo / Securities Lending	-	-	-	-	-	-	
Credit Facilities (incl. Contingency Funding Facilities)		-	-	-	-	-	-		
Intercompany Loans		-	-	-	-	-	-		
Other Flows		-	-	-	-	-	-		
Total Uses			-	-	-	-	-		

Note 1: Certain flows could be settled in securities (e.g., margins on derivatives, capital contributions/dividends, etc.). See the more specific Security Collateral guidance within the Excel templates.

Note 2: Asset Purchases (pending settlement) should include trades executed prior to the reporting date with a known settlement date after the reporting date (for example 12/30 trade date and 01/03 settle date).

Note 3: Asset Commitments should include anticipated cash flows related to settlement of a future obligation to a counterparty to the extent, and in the amount, appropriate for the specific stress scenario and economic assumptions. Examples could include capital calls for alternative investments, mortgage loan fundings, etc., and should include each company’s best estimate as to what they would expect to fund under each scenario. If these commitments have been explicitly prefunded/collateralized by highly liquid assets, asset commitments should be reported on a net basis, including proceeds from the sale of the highly liquid assets in an amount consistent with the specific stress scenario and economic assumptions. This line item may include some percentage amount of commitments to fund private placement revolvers consistent with the specific stress scenario and economic assumptions, but revolvers and lines of credit themselves should be captured in the credit facilities line in the Sources Funding section.

8.3 Assets Template

Cash and Invested Assets Available for Sale		Group Summary		
Asset Category	Asset Sub-Category	1 Month	3 Month	12 Month
Cash	Cash & Cash Equivalents	-	-	-
Government Securities	Treasury Bonds	-	-	-
	Agency Bonds	-	-	-
	Other IG Sovereigns & Regional Government	-	-	-
	Below IG Sovereigns & Regional Government	-	-	-
	Agency CMO	-	-	-
	Agency MBS	-	-	-
	Agency CMBS	-	-	-
Public Bonds	Agency ABS	-	-	-
	IG Public Corporate Bonds	-	-	-
	IG Municipal Bonds	-	-	-
	Below IG Public Corporate Bonds	-	-	-
Private Bonds	Below IG Municipal Bonds	-	-	-
	IG Private Placement Bonds	-	-	-
	IG 144As	-	-	-
	Below IG Private Placement Bonds	-	-	-
Non-Agency Structured Debt	Below IG 144As	-	-	-
	IG CMO	-	-	-
	IG MBS	-	-	-
	IG CMBS	-	-	-
	IG ABS	-	-	-
	IG CLO	-	-	-
	Below IG CMO	-	-	-
	Below IG MBS	-	-	-
	Below IG CMBS	-	-	-
	Below IG ABS	-	-	-
Equity	Below IG CLO	-	-	-
	Common Stock	-	-	-
	Preferred Stock	-	-	-
Other	Other Equity and Alternative Investments	-	-	-
	Commercial, Residential, Agricultural, Bank and Other Loans	-	-	-
	Other	-	-	-
Total Invested Assets Available for Sale		-	-	-

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Scenario As of Date	Summary	Group Summary			Legal Entity 1		
		1 Month	3 Month	12 Month	1 Month	3 Month	12 Month
	Total Sources (before Asset Sales)	-	-	-	-	-	-
	Total Uses	-	-	-	-	-	-
	Net Sources & Uses (Deficit before Asset Sales)	-	-	-	-	-	-
	Total Invested Assets Available for Sale	-	-	-	-	-	-
	Cash applied to deficit	-	-	-	-	-	-
	Deficit Sub-total	-	-	-	-	-	-
	Total Assets Sold	-	-	-	-	-	-
	Deficit satisfied if zero or greater	-	-	-	-	-	-

Final Expected Asset Sales After Adjustments		Group Summary		
Asset Category	Asset Sub-Category	1 Month	3 Month	12 Month
Cash	Cash & Cash Equivalents	-	-	-
Government Securities	Treasury Bonds	-	-	-
	Agency Bonds	-	-	-
	Other IG Sovereigns & Regional Government	-	-	-
	Below IG Sovereigns & Regional Government	-	-	-
	Agency CMO	-	-	-
	Agency MBS	-	-	-
	Agency CMBS	-	-	-
Public Bonds	Agency ABS	-	-	-
	IG Public Corporate Bonds	-	-	-
	IG Municipal Bonds	-	-	-
	Below IG Public Corporate Bonds	-	-	-
	Below IG Municipal Bonds	-	-	-
Private Bonds	IG Private Placement Bonds	-	-	-
	IG 144As	-	-	-
	Below IG Private Placement Bonds	-	-	-
	Below IG 144As	-	-	-
Non-Agency Structured Debt	IG CMO	-	-	-
	IG MBS	-	-	-
	IG CMBS	-	-	-
	IG ABS	-	-	-
	IG CLO	-	-	-
	Below IG CMO	-	-	-
	Below IG MBS	-	-	-
	Below IG CMBS	-	-	-
	Below IG ABS	-	-	-
	Below IG CLO	-	-	-
Equity	Common Stock	-	-	-
	Preferred Stock	-	-	-
	Other Equity and Alternative Investments	-	-	-
Other	Commercial, Residential, Agricultural, Bank and Other Loans	-	-	-
	Other	-	-	-
Total Invested Assets Final Sale		-	-	-

Note 1: Insurers will enter "Illiquid" in a data field for any asset category deemed such within a specific time horizon. (Regulators can then follow up with questions later if there are concerns, etc.)

Note 2: Any securities pledged as part of institutional funding agreements (e.g., FHLB) should be excluded and considered encumbered. However, any pre-pledged assets that are not securing credit that has been extended and remains outstanding (i.e., excess) should be considered unencumbered.

Note 3: Reminder that regulators want robust disclosures regarding the chief investment officer's (or equivalent title or designee) assumptions and decisions on expected asset sales. Might need to supplement the template comments with additional narrative disclosures.

Note 4: Excluding the "What If" variation, insurers are to provide disclosures indicating when affiliated amounts are provided to assist a legal entity in addressing a liquidity deficiency.

Narrative/Explanatory Disclosures noted in the 2023 LST

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Narrative/explanatory disclosures are expected to be in English.

- Insurers should provide a narrative description of their internal liquidity stress testing system and processes, including for example their materiality thresholds for stressed cash flows and methodology for converting foreign currencies to U.S. dollars.
- Specific disclosures on material stressed cash flows to/from legal entity banks/asset managers/mutual funds if needed.
- Company-specific narrative on assumptions and metrics used for the adverse liquidity stress scenario for insurers, for example the inability to roll or issue new debt, potential increases in lapse rates, new business sensitivity, mortality experience and policyholder behavior (e.g., surrenders and policy loans).
- Company-specific narrative on the interest rate shock scenario, assumptions around general economic conditions bulleted in 5.2.1 Narrative, and specific metrics for economic variables for each time horizon. The economic variables in the table in 5.2.2 Regulator-Prescribed Assumptions should be fully described in the narrative, to the extent they are use in the company's internal model.
- Insurers should provide a comprehensive narrative describing their worst-case liquidity stress scenario(s) and the economic environment(s), including assumptions, key metrics and results.
- Written narrative on the insurer's own individual methodology for determining asset sales under stress.
- Robust disclosures regarding the chief investment officer's (or equivalent title or designee) assumptions and decisions on expected asset sales, if needed.
- Excluding the "What If" variation, disclosures to identify when affiliated amounts are contributed to assist a legal entity in addressing a liquidity deficiency.
- Disclose when a regulatory prescribed variable is not used for the LST because it is not used in the internal liquidity stress testing process or models.

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[End of ~~2023~~ Liquidity Stress Testing Framework – to be included as an appendix in the NAIC Financial Analysis Handbook]

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Data Aggregation

Given the NAIC’s primary focus is on macroprudential impacts of a liquidity stress impacting the life insurance sector, the NAIC will aggregate final expected asset sales data across the insurance groups subject to the liquidity stress test. The aggregation will be done by asset category. The NAIC aims to compare the aggregated results against various benchmarks, potentially including normal and/or stressed trading volumes and asset values for various asset classes, to determine the impact such sales may have on the capital markets in times of stress. Findings from this analysis may also inform expected asset sale assumptions utilized in future runs of the liquidity stress test.

As part of its macroprudential surveillance, the insurance regulators and/or NAIC may reach out to other regulatory agencies to discuss aggregate results that may impact other regulated industries such as banks, securities brokers, and asset managers. Insurance regulators may also coordinate with other agencies to identify appropriate and perhaps coordinated action they may take to prevent or minimize the effect large asset sales may have on the financial markets and overall economy.

Regulatory Authority

For the 2020 ~~through 2022~~ liquidity stress tests, lead state regulators utilized their examination authority to collect the reporting results from insurers and to keep the data confidential. A long-term solution was developed at the Financial Stability (EX) Task Force in coordination with addressing similar issues related to the Group Capital Calculation project, resulting in revisions to Model #440. However, it will take several years for states to adopt these revisions. As a result, some regulators will utilize their examination authority for the ~~2023~~ LST as well, while others may rely upon adopted revisions to their Holding Company Act.

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Confidentiality

For the 2020 through 2022 liquidity stress tests, lead state regulators utilized their examination authority to collect the reporting results from insurers identified by the scope criteria. Existing protocols for collecting confidential/sensitive data for each state and insurer were utilized. A long-term solution was developed at the Financial Stability (EX) Task Force in coordination with addressing similar issues related to the Group Capital Calculation project, resulting in revisions to Model #440. However, it will take several years for states to adopt these revisions. As a result, some regulators will utilize their examination authority for the 2023 LST as well, while others may rely upon adopted revisions to their Holding Company Act.

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Timeline

- December 2023 – Adopt the 2023 LST Framework.
- Regulators agreed to make no substantive changes for the 2023 LST Framework, including the Scope Criteria. Minor template revisions and Annex updates to the 2023 LST Framework document need to be finalized early in 2024 as Lead State Guidance to allow insurers adequate time to generate the 2023 LST filings in time for the June 30, 2024, filing deadline; ideally by the end of January 2024.
- June 2024 – Incorporate all appropriate Lead State Guidance into the 2023 LST Framework document as the starting place for the 2024 LST Framework and begin work on changes specific to the 2024 LST.

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Annex 1: Original Scope Criteria with Annual Statement References

The Subgroup proposes to include in the scope of the Liquidity Stress Testing Framework any insurer/group that exceeds the following thresholds for any of the noted activities (or account balance as a proxy for that activity). The thresholds have been established taking into consideration both the account balance of the insurer/group to the total balance for the life insurance sector, as well as the aggregate account balance of insurers/groups within scope to the aggregate account balance for the life insurance sector.

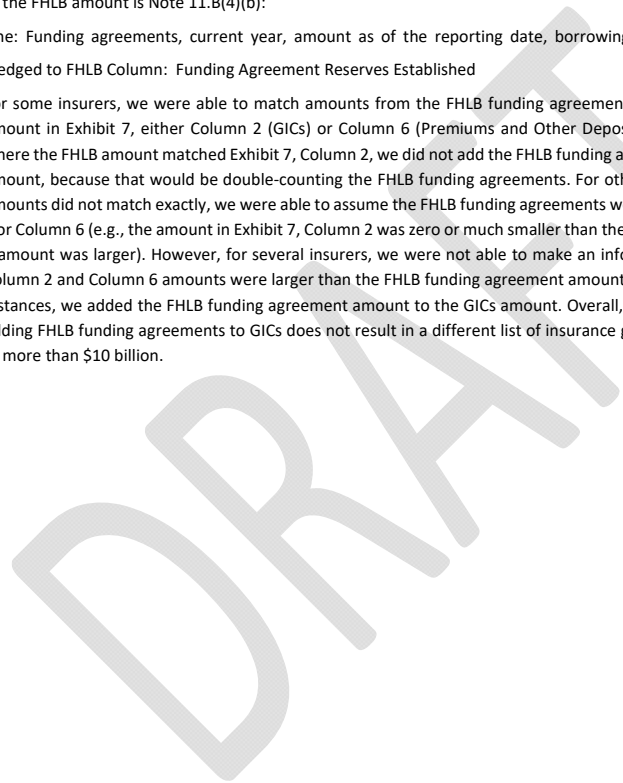
Account Balances	Threshold in \$B "greater than"	Reference to <u>2022 NAIC life/accident and health (A&H) annual financial statement blank</u>	Deleted: 2017
Fixed and Indexed Annuities	25	Analysis of Increase in Annuity Reserves Page: Analysis of Increase in Reserves Line: Reserves December 31, current 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	
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 Line: Total (9999999) Column: Fair Value	
Repurchase Agreements	1	Repurchase Agreements Page: Notes to Financial Statement Investments Restricted Assets Line: 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
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¹In performing the addition of the FHLB funding agreement amount to the GICs amount, NAIC staff discovered that the reporting of FHLB funding agreements is not consistent in Exhibit 7, Deposit-Type Contracts. The source of the FHLB amount is Note 11.B(4)(b):

Line: Funding agreements, current year, amount as of the reporting date, borrowing from FHLB, collateral pledged to FHLB Column: Funding Agreement Reserves Established

For some insurers, we were able to match amounts from the FHLB funding agreement footnote to the exact same amount in Exhibit 7, either Column 2 (GICs) or Column 6 (Premiums and Other Deposit Funds). For those insurers where the FHLB amount matched Exhibit 7, Column 2, we did not add the FHLB funding agreement amount to the GICs amount, because that would be double-counting the FHLB funding agreements. For other insurers, even though the amounts did not match exactly, we were able to assume the FHLB funding agreements were reported in either Column 2 or Column 6 (e.g., the amount in Exhibit 7, Column 2 was zero or much smaller than the FHLB note, while the Column 6 amount was larger). However, for several insurers, we were not able to make an informed assumption (e.g., both Column 2 and Column 6 amounts were larger than the FHLB funding agreement amount). To be conservative in these instances, we added the FHLB funding agreement amount to the GICs amount. Overall, for the \$10 billion threshold, adding FHLB funding agreements to GICs does not result in a different list of insurance groups from the list with GICs of more than \$10 billion.



Annex 2: Regulatory Prescribed Assumptions

Annex 2i. Economic and Market Variables

A. Fed reference Table A.5 Adverse Scenario

2017 CCAR Adverse Scenario

Date	Real GDP growth	Nominal GDP growth	Real disposable income growth	Nominal disposable income growth	Unemployment rate	CPI inflation rate	3-month Treasury rate	5-year Treasury yield	10-year Treasury yield	BBB corporate yield	Mortgage rate	Prime rate	Level			
													Dow Jones Total Stock Market Index	House Price Index	Commercial Real Estate Price Index	Market Volatility Index
Q1 2017	-1.5	0.9	0.7	2.4	5.2	1.8	0.1	1.7	2.3	5.6	4.7	3.3	15,960	181	291	37.1
Q2 2017	-2.8	-0.7	-0.6	1.1	5.8	1.8	0.1	1.8	2.4	5.9	4.9	3.3	15,042	179	283	32.7
Q3 2017	-2.0	0.0	-0.5	1.1	6.3	1.8	0.1	1.8	2.5	6.1	5.1	3.3	14,290	176	275	34.4
Q4 2017	-1.5	0.5	-0.5	1.2	6.8	1.8	0.1	1.9	2.5	6.2	5.2	3.2	13,982	173	267	32.0
Q1 2018	-0.5	1.4	0.2	1.9	7.1	1.8	0.1	1.9	2.6	6.0	5.2	3.2	14,367	170	259	28.5
Q2 2018	1.0	3.0	0.6	2.4	7.3	2.0	0.1	1.9	2.7	5.8	5.2	3.2	15,001	166	254	25.8
Q3 2018	1.4	3.3	1.0	2.7	7.4	2.0	0.1	2.0	2.7	5.6	5.1	3.2	15,893	163	250	23.6
Q4 2018	2.6	4.4	1.5	3.4	7.3	2.1	0.1	2.0	2.7	5.4	5.1	3.2	16,603	161	249	21.6
Q1 2019	2.6	4.3	1.6	3.5	7.2	2.1	0.1	2.0	2.7	5.2	5.0	3.2	17,519	161	249	20.1
Q2 2019	3.0	4.6	2.1	3.8	7.1	2.0	0.1	2.0	2.7	5.0	4.9	3.2	18,514	161	251	18.7
Q3 2019	3.0	4.5	2.2	3.8	7.0	2.0	0.1	2.0	2.7	4.8	4.8	3.2	19,243	162	255	18.2
Q4 2019	3.0	4.5	2.1	3.8	6.9	1.9	0.1	2.0	2.7	4.7	4.8	3.2	20,025	163	259	17.6
Q1 2020	3.0	4.5	2.0	3.5	6.8	1.8	0.1	2.0	2.7	4.5	4.7	3.2	20,867	164	262	17.3

"Adverse Scenario":
 BBB corporate yield spread is 3.7% at its peak in Q4:2017 when financial conditions are generally at their most acute

Narrative: "The U.S. economy experiences a moderate recession. Real GDP falls slightly more than 2 percent from the pre-recession peak, while the unemployment rate rises steadily, peaking at about 7½ percent in the third quarter of 2018. The U.S. recession is accompanied by an initial fall in inflation through the third quarter of 2017, with the rate of increase in consumer prices then rising steadily and reaching 2 percent by the middle of 2018. Reflecting weak economic conditions, short-term interest rates in the United States fall and remain near zero for the rest of the scenario period. With the increase in term premiums, 10-year Treasury yields gradually rise to a little less than 2½ percent by the second half of 2018. Financial conditions tighten for corporations and households during the recession. Spreads between investment-grade corporate bond yields and 10-year Treasury yields widen to about 3½ percentage points by the end of 2017, while spreads between mortgage rates and 10-year Treasury yields widen to about 2½ percentage points over the same period. Asset prices decline in the adverse scenario accompanied by a rise in equity market volatility. Aggregate house prices and commercial real estate prices experience less sizable but more sustained declines compared to equity prices; house prices fall 12 percent through the first quarter of 2019 and commercial real estate prices fall 15 percent through the fourth quarter of 2018. Following the recession in the United States, real activity picks up slowly at first and then gains momentum; growth in real U.S. GDP accelerates from an increase of 1 percent at an annual rate in the second quarter of 2019 to an increase of 3 percent at an annual rate by the middle of 2019. The unemployment rate declines modestly."

Source: Federal Reserve

Source: 2017 Supervisory Scenarios for Annual Stress Tests Required under the Dodd-Frank Act Stress Testing Rules and the Capital Plan Rule

<https://www.federalreserve.gov/publications/2017-june-dodd-frank-act-stress-test-appendix-a-supervisory-scenarios.htm>

B. Economic Variables-data deltas to apply to current levels (Including Structured)

	Inputs to Use		
	Adverse: 1 Mo	Adverse: 3 Mo	Adverse: 12 mo
Real GDP Growth	-1.5	-1.5	-1.5
Nominal GDP Growth	0.9	0.9	0.5
Real Disposable Income Growth	0.7	0.7	-0.5
Nominal Disposable Income Growth	2.4	2.4	1.2

- Use 3 month value for 1 month horizon since CCAR does not prescribe monthly values.

	Deltas to Apply		
	Adverse: 1 Mo	Adverse: 3 Mo	Adverse: 12 mo
Unemployment	0.2	0.5	2.1
CPI Inflation Rate	-0.5	-1.6	-1.6
3M Treasury	-1.0	-3.0	-3.0
3Y Treasury	-0.1	-0.2	0.2
5Y Treasury	0.0	0.0	0.2
7Y Treasury	0.0	0.1	0.5
10Y Treasury	0.1	0.2	0.5
BBB Corporate Yield	0.7	2.2	3.1
Agency MBS 10 Year Yield	0.2	0.6	2.2
Non-Agency MBS 10 Year AA Yield	0.7	2.2	8.4
CMBS 10 Year AA Yield	0.7	2.0	7.8
CLO/CDO 5.5-7 Year AA Yield	0.5	1.4	5.7
ABS -Cards 5 Year AAA Yield	0.3	0.9	4.1
ABS-Auto Near prime 3 year AAA Yield	0.4	1.1	5.1
Mortgage Rate	0.5	1.4	2.2
Prime Rate	-0.1	-0.4	-0.6
Dow Jones	-10.5%	-31.4%	-39.9%
House Price Index	-0.4%	-1.1%	-5.5%
Commercial Real Estate Price Index	-0.3%	-1.0%	-9.2%
VIX	4.9	14.6	9.5

- 1 month delta is 1/3 of 3 month value

C. 2017 CCAR Economic variable delta calculations

2017 CCAR						
		12/31/2016	Adverse: Q1	Adverse: Q4		
1	Real GDP Growth	3.1	-1.5	-1.5		
2	Nominal GDP Growth	6.1	0.9	0.5		
3	Real Disposable Income Growth	1.6	0.7	-0.5		
4	Nominal Disposable Income Growth	4.5	2.4	1.2		
5	Unemployment	4.7	5.2	6.8		
6	CPI Inflation Rate	3.4	1.8	1.8		
7	3M Treasury	0.4	0.1	0.1		
8	3Y Treasury	1.3	1.2	1.3		
9	5Y Treasury	1.7	1.7	1.9		
10	7Y Treasury	2.0	2.0	2.2		
11	10Y Treasury	2.2	2.3	2.5		
12	BBB Corporate Yield	4.1	5.6	6.2	3-Month	12-Month
					Spreads over horizon (in %)*	
13	Agency MBS 10 Year Yield	2.9	3.2	4.1	0.92	1.56
14	Non-Agency MBS 10 Year AA Yield	3.5	4.5	7.6	2.23	5.10
15	CMBS 10 Year AA Yield	3.6	4.7	7.8	2.35	5.29
16	CLO/CDO AA 5.5-7 Year AA Yield	3.8	4.7	7.2	2.65	5.00
16	ABS -Cards 5 Year AAA Yield	2.1	2.5	3.9	0.85	2.04
18	ABS-Auto Near prime 3 year AAA Yield	1.7	2.0	3.4	0.85	2.07
19	Mortgage Rates	3.9	4.7	5.2		
20	Prime Rate	3.5	3.3	3.2		
21	Dow Jones	\$23,277.0	\$15,960.0	\$13,982.0		
22	House Price Index	183.0	181.0	173.0		
23	Commercial Real Estate Price Index	294.0	291.0	267.0		
24	VIX	22.5	37.1	32.0		

Annex Ziii, A

Spreads (%) 2016:Q4 Averages*
0.71
1.27
1.37
1.87
0.45
0.44

*Quarterly averages;
Spread to treasuries

*Spread to treasuries

Annex 2ii. Market Capacity Assumption**Illustrative Example only**Step 1: Estimate Unconstrained Sales Per Day

Insurer A has a \$100 billion portfolio of investment-grade corporate bonds, priced at par. Insurer A estimates that it holds approximately 5% of outstanding corporate bonds. In the adverse liquidity stress scenario, Insurer A's unconstrained liquidity stress testing model assumes that it can sell:

Time Horizon	% Able to Be Sold	Sale Price	Total Sale	Sales / Day
First 30 Days	10%	97	\$9.7 B	\$440 M
31-90 Days	20%	94	\$18.8 B	\$430 M
91-365 Days	50%	90	\$45.0 B	\$230 M

Step 2: Add Market Capacity Constraint

Assume the average daily trading volume in the secondary market for investment grade corporate bonds has been \$13.0 Billion over the past year. Insurer A estimates that trading volumes would decline by 40% in the adverse liquidity stress scenario to \$8.0 B per day.

Since Insurer A is 5% of the market, Insurer A can only trade \$400 M per day (\$8B x 5%) without paying a significant illiquidity premium and impacting the overall market.

Insurer A then repeats this process for every asset class in its investment portfolio.

Time Horizon	Unconstrained Sales / Day	Market Capacity Assumption	Impact
First 30 Days	\$440 M	\$400 M	(\$40 M)
31-90 Days	\$430 M	\$400 M	(\$30 M)
91-365 Days	\$230 M	\$400 M	\$0

Annex 2iii, A. Year-end Structured Spread Baseline Values

	Q4 2016 Baseline Spreads (%)	Q4 2022 Spreads (%) Averages*
Agency MBS 10 Year Yield	0.71	1.629
Non-Agency MBS 10 Year AA Yield	1.27	3.186
CMBS 10 Year AA Yield	1.37	2.665
CLO/CDO 5.5-7 Year AA Yield	1.87	2.602
ABS -Cards 5 Year AAA Yield	0.45	0.760
ABS-Auto Near prime 3 Year AAA Yield	0.44	0.900

*Quarterly averages;
Spread to treasuries

Commented [ST5]: To be updated as Lead State Guidance in early 2024.

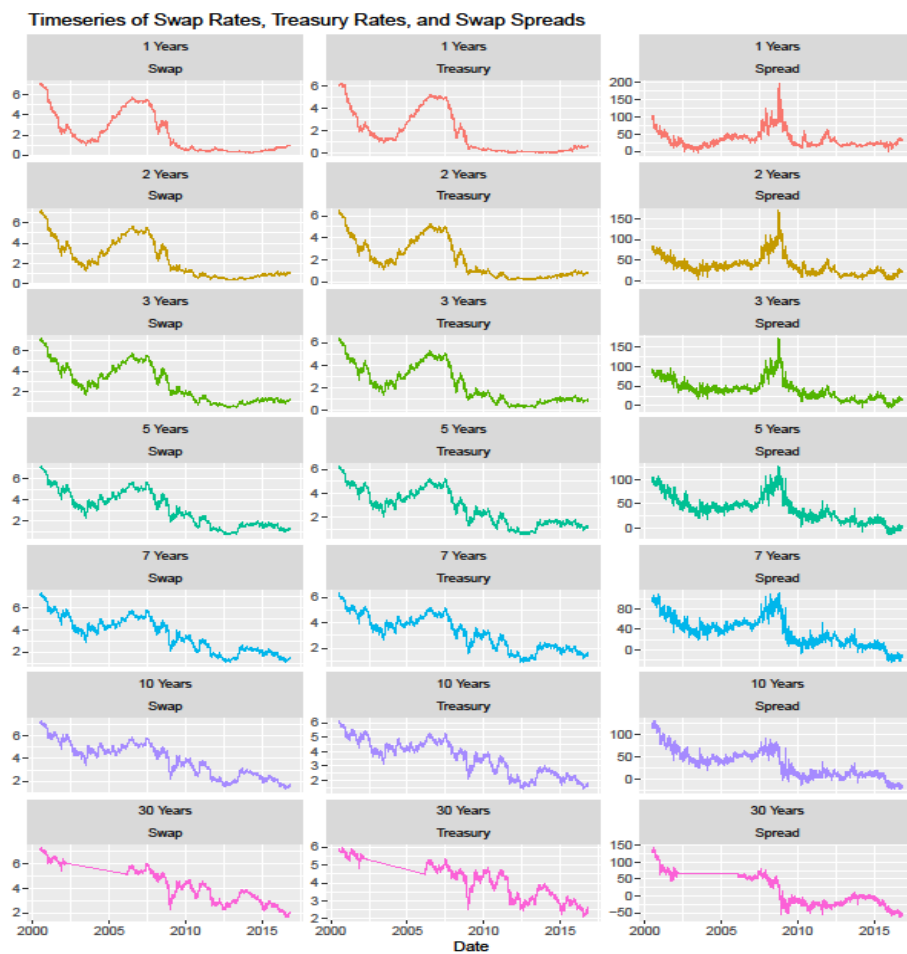
DRAFT

Annex 2iv. SWAP Spread Table

Maturity	Swap Spreads ^{1,2}					
	Baseline	1 Mo.	3 Mo.	6 Mo.	9 Mo.	12 Mo.
3 Mo.	X	X	X	X	X	X
5 Yr	X	X	X	X	X	X
10 Yr	X	X	X	X	X	X
20 Yr	X	X	X	X	X	X
30 Yr	X	X	X	X	X	X

1 - (Nominal) Swap Spreads (in BPS)

2 - IR Par Swap Spreads for USD, EUR, JPY, GBP, AUD and CAD



Swap and Treasury rates from H.15 (via FRED).
 Spread paid by fixed-rate payer on an interest rate swap over constant maturity Treasury at the given maturities.

Source: Federal Reserve

Annex 2v. Implied Volatility of IR Swaptions

Implied Volatility		
Implied Normal Volatility of IR Swaption by Tenor and Expiry		
Time Horizon 0		
Tenor/Expiry	3Y	7Y
3 Mo.	X	X
3Y	X	X
5Y	X	X
7Y	X	X
10Y	X	X

Annex 2vi. Credit Assumptions: Moody's Transition Matrix/Migration Rates

Exhibit 36. Average one-year alphanumeric rating migration rates, 1983-2021

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Source: Moody's Investors Service

From\To	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca-C	WR	Def
Aaa	87.2%	5.3%	2.2%	0.5%	0.3%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.3%	0.0%
Aa1	1.6%	77.0%	7.8%	5.6%	1.4%	1.0%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.1%	0.0%
Aa2	1.0%	4.2%	74.3%	9.9%	3.3%	1.6%	0.4%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.9%	0.0%
Aa3	0.1%	1.0%	4.0%	75.8%	8.8%	3.4%	0.8%	0.2%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.3%	0.0%
A1	0.0%	0.1%	1.0%	5.2%	76.8%	7.5%	2.5%	0.6%	0.4%	0.2%	0.2%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.2%	0.1%
A2	0.0%	0.0%	0.2%	1.0%	5.7%	77.0%	7.2%	2.4%	0.9%	0.3%	0.2%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.5%	0.0%
A3	0.0%	0.0%	0.1%	0.3%	1.4%	6.1%	76.2%	6.7%	2.5%	0.8%	0.3%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.9%	0.1%
Baa1	0.0%	0.0%	0.1%	0.1%	0.2%	1.4%	6.3%	76.8%	6.6%	2.1%	0.5%	0.3%	0.2%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	4.8%	0.1%
Baa2	0.0%	0.0%	0.0%	0.1%	0.2%	0.5%	1.8%	6.5%	76.6%	6.2%	1.2%	0.6%	0.4%	0.3%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	5.1%	0.1%
Baa3	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.4%	1.7%	8.7%	73.6%	4.7%	2.0%	0.9%	0.7%	0.2%	0.2%	0.1%	0.1%	0.1%	0.0%	6.0%	0.2%
Ba1	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.2%	0.6%	2.3%	10.1%	65.4%	5.6%	4.0%	1.5%	0.6%	0.5%	0.1%	0.2%	0.0%	0.1%	7.8%	0.4%
Ba2	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.3%	0.6%	3.6%	8.1%	64.6%	6.4%	3.7%	1.3%	0.9%	0.3%	0.2%	0.1%	0.1%	0.1%	8.7%	0.6%
Ba3	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.2%	0.1%	0.4%	0.8%	2.8%	6.9%	64.6%	7.0%	3.1%	1.9%	0.7%	0.4%	0.1%	0.1%	9.6%	1.2%
B1	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.2%	0.4%	0.6%	2.8%	6.8%	63.6%	6.4%	4.4%	1.4%	0.7%	0.2%	0.2%	0.2%	10.3%	1.8%
B2	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.2%	0.2%	0.6%	2.1%	7.4%	62.3%	8.0%	3.5%	1.9%	0.4%	0.5%	0.5%	0.5%	9.6%	2.7%
B3	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%	0.1%	0.2%	0.8%	2.5%	6.2%	60.6%	7.5%	3.3%	1.0%	0.8%	1.2%	12.3%	4.2%
Caa1	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.2%	0.5%	1.2%	7.4%	59.0%	9.5%	2.8%	1.2%	13.9%	4.0%	
Caa2	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.3%	0.7%	1.9%	6.6%	58.2%	6.4%	2.9%	15.1%	7.6%	
Caa3	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.9%	2.9%	9.4%	45.7%	9.0%	14.4%	17.3%	
Ca-C	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.3%	1.6%	1.7%	3.2%	5.3%	37.1%	20.1%	30.0%	

Commented [ST6]: To be updated as Lead State Guidance in early 2024.

Source: Moody's

Annex 2vii. Credit Assumptions: Moody's Default Table

Exhibit 41. Average cumulative issuer-weighted global default rates by letter rating, 1983-2021
Source: Moody's Investors Service

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Rating\Horizon	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Aaa	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Aa	0.0%	0.1%	0.1%	0.2%	0.3%	0.4%	0.5%	0.6%	0.6%	0.7%	0.8%	0.9%	1.0%	1.1%	1.2%	1.3%	1.4%	1.5%	1.7%	1.8%
A	0.1%	0.2%	0.3%	0.5%	0.7%	1.0%	1.2%	1.5%	1.7%	2.0%	2.2%	2.5%	2.7%	3.0%	3.3%	3.6%	3.9%	4.3%	4.6%	4.9%
Baa	0.1%	0.4%	0.7%	1.0%	1.3%	1.7%	2.1%	2.4%	2.8%	3.2%	3.6%	4.0%	4.5%	5.0%	5.5%	6.0%	6.4%	6.8%	7.2%	7.5%
Ba	0.8%	2.3%	4.0%	5.9%	7.5%	9.1%	10.5%	11.8%	13.1%	14.4%	15.6%	16.8%	17.9%	19.0%	20.1%	21.1%	22.1%	23.0%	23.9%	24.5%
B	3.1%	7.6%	12.2%	16.4%	20.2%	23.5%	26.5%	29.0%	31.4%	33.4%	35.1%	36.7%	38.4%	40.0%	41.5%	42.9%	44.1%	45.4%	46.5%	47.8%
Caa-C	9.3%	16.7%	23.1%	28.6%	33.4%	37.5%	40.8%	43.8%	46.6%	49.0%	50.9%	52.1%	53.2%	53.9%	54.6%	55.4%	56.1%	56.7%	57.5%	58.2%
IG	0.1%	0.2%	0.4%	0.6%	0.8%	1.1%	1.3%	1.6%	1.8%	2.1%	2.3%	2.6%	2.8%	3.1%	3.4%	3.7%	3.9%	4.2%	4.5%	4.8%
SG	4.1%	8.3%	12.3%	15.9%	19.0%	21.7%	24.0%	26.0%	27.9%	29.5%	30.9%	32.2%	33.5%	34.7%	35.8%	36.9%	37.9%	38.8%	39.8%	40.6%
All	1.7%	3.3%	4.8%	6.1%	7.2%	8.1%	8.9%	9.6%	10.2%	10.8%	11.3%	11.7%	12.2%	12.6%	13.1%	13.5%	13.9%	14.3%	14.6%	15.0%

Commented [ST7]: To be updated as Lead State Guidance in early 2024.

Annex 2viii. Credit Assumptions: Moody's Recovery Rate Table

Exhibit 8. Average debt recovery rates measured by ultimate recoveries, 1987-2021
Source: Moody's Investors Service

Priority position	Emergence year			Default year		
	2021	2020	1987-2021	2021	2020	1987-2021
Revolvers	98.4%	79.1%	86.3%	100.0%	83.2%	86.3%
Term Loans	52.3%	50.4%	71.8%	57.7%	49.9%	71.8%
Senior Secured Bonds	65.6%	41.3%	61.5%	81.9%	48.6%	61.5%
Senior Unsecured	40.6%	64.9%	47.4%	26.5%	34.9%	47.4%
Subordinated Bonds	n.a.	0.9%	27.9%	n.a.	0.9%	27.9%

Commented [ST8]: To be updated as Lead State Guidance in early 2024.

* In 2020, the recovery for the PG&E Corporation bankruptcy heavily skewed the average recovery for the senior unsecured bonds. Excluding PG&E resulted in an average recovery of 10.3%.



MEMORANDUM

TO: Members, Interested Regulators, and Interested Parties of the Financial Stability Task Force and Macroprudential Working Group

FROM: NAIC Staff

DATE: December 1, 2023

RE: LST General Report Summary

Overview:

The NAIC alongside regulators and with input from interested parties continue to enhance the U.S. Insurance Solvency Framework since the 2008 financial crisis. The Liquidity Stress Testing (LST) Framework development began in 2017 as part of the Macroprudential Initiative. While regulators have existing tools and processes for assessing liquidity risk at a legal entity level (i.e., ‘inward’ impacts to the insurer), there was recognition that the solvency regulator toolbox could be further enhanced with a tool that would enable an assessment of macroprudential impacts on the broader financial markets (i.e., ‘outward’ impacts) of a liquidity stress impacting a large number of life insurers simultaneously. The primary macroprudential objective of the LST is to assess the amount of potential asset sales the life insurance industry would generate in the various stress scenarios. However, the LST results also provide regulators with additional insights for the microprudential supervision of individual insurers, which is a secondary benefit.

The 2022 Liquidity Stress Test filings were submitted by 25 life insurance groups (insurers), which represents approximately 60% of the Life industry’s cash and invested assets. Subsequent to receiving LST submissions, NAIC staff reviews the narratives, aggregates the quantitative results, and provides detailed analysis to regulators and this summary analysis.

Most insurers prepared the 2023 LST filings due June 30, 2023, utilizing year-end 2022 data and projected cash flows forward based on various stress scenarios for three different time horizons. The three required time horizons are one month, three months, and one year. The five scenarios are as follows: a Baseline scenario, an Adverse scenario, a “What If” modification to the Adverse scenario, an Interest Rate Spike scenario, and the insurer’s own Worst-Case scenario. Insurers were not required to provide Worst-Case scenario data, but they were required to provide a narrative for the scenario. Economic metrics are prescribed by the regulators for the adverse scenario, and for the interest rate scenario insurers establish their own assumptions based on the regulators’ stress scenario description. The insurers report their potential stressed cash flows for sources and uses of cash and the resulting potential asset sales needed to satisfy any cash flow

deficiency. Asset sales are reported by asset type, which are aggregated by NAIC staff and compared to average daily trading volumes and issues outstanding. The potential impact of asset sales to the capital markets is the primary macroprudential objective of this exercise. The largest asset sales emanated from the investment grade corporate and U.S. Treasury and Agency categories. The impact of insurers' assets sales of these two asset classes were compared to market data for these two categories. The 2023 LST results show a nil effect of potential asset sales to the capital markets in the most severe scenarios. Please see Appendix for details.

Another key objective is the assessment of the Life industry's liquidity profile. Overall, insurers demonstrated their ability to manage any actual and projected cash flow deficits. Any cash flow deficits projected in the various scenarios were reported as satisfied with cash on hand and in some cases relatively small asset sales, which are a very small percentage of the industry's overall liquid assets.

2023 LST RESULTS:

1. Baseline Scenario

Baseline scenario cash flows are the insurer-specific cash flows from normal expected operations. For this reason, a positive net cash flow is presumed in the baseline cash flows since companies are typically not projecting to be operating in a net cash flow deficiency.

2. Adverse Scenario

The Adverse Scenario is one of the two regulatory required liquidity stress scenarios. The Adverse liquidity stress scenario contains a regulator provided narrative and regulator-prescribed assumptions, and company-specific liability assumptions.

In the Adverse Scenario for 2022 the aggregate results did not show any cashflow deficit but there were assets that were sold. Although there were improvements regarding asset sales, when there was no cash flow deficit, there were still some insurers that sold assets that were not experiencing a cash deficit. We continue to ask companies to only report asset sales to satisfy cashflow deficits, while acknowledging the need for a liquidity buffer and sales in the normal course of business. Total invested assets available for sale increased as compared to 2021 across the three different time horizons and the total invested assets available for sale increase was greater than the increase from 2020 to 2021.

3. Adverse What-If Scenario

The "What-If" modification to the adverse stress scenarios removes the ability for insurers to use extraordinary internal and external funding sources such as Bank and FHLB lines of credit to satisfy any liquidity deficiency under stress.

Compared to the Adverse Scenario, companies experienced higher cash flow deficits. The total assets sold decreased from 2021. This arises due in part to the instructions we gave to insurers to only sell assets when there is a deficit. Aggregate results show deficit in the one month and

the three-month horizon, however most companies had sufficient cash on hand to apply to the deficit, therefore less asset sales were required.

4. Interest Rate Spike

The Interest Rate Spike is the second of the two regulatory required liquidity stress scenarios. The interest rate spike scenario allows insurers to use the economic variables they use for their own internal liquidity stress testing function, (including the amount of interest rate spike).

The Interest Rate Spike scenario saw less asset sales as compared to 2021 across the board. This may be due to the insurers not selling assets when there is no deficit. Similarly, to the Adverse scenario there were companies that reported assets sold although there were no cash deficits. Most assumptions remained the same, with insurers reporting a range of 200-400 bps increase in rates with 300 bps being the most common over the one-year horizon.

Worst-Case Scenario

A detailed reporting template was not required for this scenario. However, insurers were still required to communicate these results in their written narrative submission.

This scenario requires insurers to provide a detailed narrative of their most severe liquidity stress test scenario. The scenario should be focused on the insurers internal model scenario with the worst-case outcome for the group. Some insurers reported their worst-case scenario is an interest rate spike and therefore their own worst case and interest rate spike scenario was the same.

There were insurers that adopted the 2008-2009 financial crisis as a means of a worst-case scenario assumption. Those who did adopt this assumption did not need to sell assets or sold very little to meet their deficit.

Conclusion:

Overall, most insurers' assumptions for all scenarios remained the same as or similar to the prior year's submissions.

The total potential assets sold increased this year for the Baseline, Adverse, and the Adverse What-if scenarios and decreased for the Interest Rate Spike scenario. However, these observed changes appear reasonable. Most potential asset sales are comprised of Treasury and Agency Bonds and Investment Grade Public Corporate Bonds, which is also consistent with last year's report.

The 2022 LST filings continue to show the amount of potential assets sold would not be significant given historical average daily trading volumes by asset type. Considering the continued increase

in interest rates, states may follow up with their insurers regarding the economic variables assumed in the Interest Rate Spike stress scenario. The primary concern is if interest rate increase assumptions used in the insurers' LST scenarios were large enough compared to actual increases this year.

Appendix:

A. Total Asset Sales for Interest Rate Spike (in millions)

	1 Month	3 Month	12 Month
Interest Spike Rate	17,990	25,240	26,402

B. Asset sales as a Percentage of ADTV and Issues Outstanding for IG Public Corporate Bonds and US Treasury Bonds in the Interest Rate Spike Scenario

	ADTV	Issues Outstanding
IG Public Corporate Bonds	2.8%	0.12%
US Treasury Bonds	0.5%	0.01%

C. Percentage of Industry Assets Sold (in millions) Interest Rate Spike Scenario

	Total Assets Sold and Cash applied to deficit	Life C&IA Assets	% of Life C&IA Assets Sold to Meet Liquidity Needs
1 Month	36,036	5,317,862	0.70%
12 Month	51,842	5,317,862	1.00%

Updates on Actuarial Guideline 53

Fred Andersen, FSA, MAAA

12/1/2023

AG 53 Background

- Actuarial Guideline 53 was adopted in 2022
- Main purpose: help ensure claims paying ability even if complex assets do not perform as expected
- Requires disclosures and asset-related information for most life insurers over a size threshold
 - An opportunity for companies to tell their stories regarding:
 - Their complex assets & associated risks
 - How their cash-flow testing models address those risks
- First submissions were received this year

AG 53 Reviews - activity to date

Done:

- ✓ AG 53 filings received from 246 life insurers
- ✓ AG 53 Review Group (within the Valuation Analysis Working Group) formed
 - Team of actuaries, investment experts, and other financial staff to perform reviews
- ✓ Review process started with company prioritization, based on prior knowledge and template information
- ✓ Identified companies with outlier net yield assumptions
- ✓ AG 53 Review Group met frequently with various state regulators-presenting review findings

AG 53 Reviews - activity to date

In Progress:

- Engaging with domestic regulators with the goal of decreasing highest net yield assumptions to remove companies from outlier list
- Reviewing responses from targeted companies that received inquiries on reinsurance collectability
- Analyzing investment expense assumptions
- Analyzing attribution analysis related to assumed excess net yield assumptions

Net Yield Assumptions Reviews

- Aiming to reduce cases of understated asset risk
- If asset adequacy analysis projections are too optimistic and assets underperform:
 - Reserves will turn out to be inadequate to support future claims payments
 - Previously released money (including dividends) may have been needed to support future claims payments
- VAWG interaction with domestic regulators regarding their life insurers with outlier assumptions is concluding
 - Additional conservatism in their asset adequacy analysis is expected for year-end 2023

Reinsurance Collectability Reviews

- In cases of non-traditional reinsurance (including cross border and with affiliated investments), help ensure:
 - There are enough quality assets at the reinsurer to pay reinsurance claims in moderately adverse conditions
 - Significant risks associated with reinsurance ceded are appropriately addressed in asset adequacy analysis projections, which will help ensure the ceding insurer's balance sheet is accurate.
 - A ceding company does not act like they've wiped their hands and balance sheet of the risk if the assuming company will be some combination of:
 - Weakly capitalized,
 - Under-reserved, or
 - With risky assets supporting reserves

Reinsurance Collectability Reviews

- In target cases, inquiring on:
 - How are ceding companies analyzing this risk?
 - Modeling the risk directly?
 - What metrics are being relied on to provide the ceding company comfort?
- Additional questions:
 - What are differences between US and non-US reserve and capital standards?
 - What are differences in assumptions underlying modeling of US and non-US standards?
 - e.g., mortality, index rider utilization, alternative asset returns

Investment Expenses

- Investment expenses – analyzing two aspects:
 - Are investment expenses sufficiently modeled in asset adequacy analysis?
 - If trending towards more complex assets with more attention and expertise needed, future investment expenses will likely be higher and should be modeled that way
 - Is the amount of investment expenses leaving the insurer reasonable?
 - Is there appropriate value being returned?
 - Arms-length
 - Coordinating with other NAIC groups on this aspect of the review

Attribution Analysis

- Company explanation of why excess net yields are assumed without accompanying potential losses assumed
- Thought exercise
 - Opportunity for the company actuary to demonstrate they understand the asset and the risk
 - If this is not demonstrated and the company actuary models excess net yields, potential cause for concern and inquiry
- Most common explanation of excess net yields are credit risk and illiquidity risk
 - If credit risk is driving excess net yields, why are potential losses not modeled?
 - Company should have an explanation
 - If illiquidity risk is driving excess net yields, what is a reasonable illiquidity premium and can it be expected to persist over time?
 - Are downsides to an illiquid asset strategy considered and modeled?

AG 53 Reviews - upcoming activities

- Continue current interactions with companies and their regulators
 - Add conservatism to outlier net yield assumptions
 - Better understand reinsurance collectability areas of comfort and vulnerability
- Coordinated review of investment expense assumptions and reasonability
- Equity risk issue being handled by Life Actuarial Task Force
 - Difference in common practice between modeling fixed income security risk and equity risk
- AG 53 Guidance Document - more refined information to be attained for year-end 2023
 - e.g., structured asset information by tranche