PROJECT NAME AS IDENTIFIED IN JIRA

Copywriter: Cayetano Gea-Carrasco, David Little
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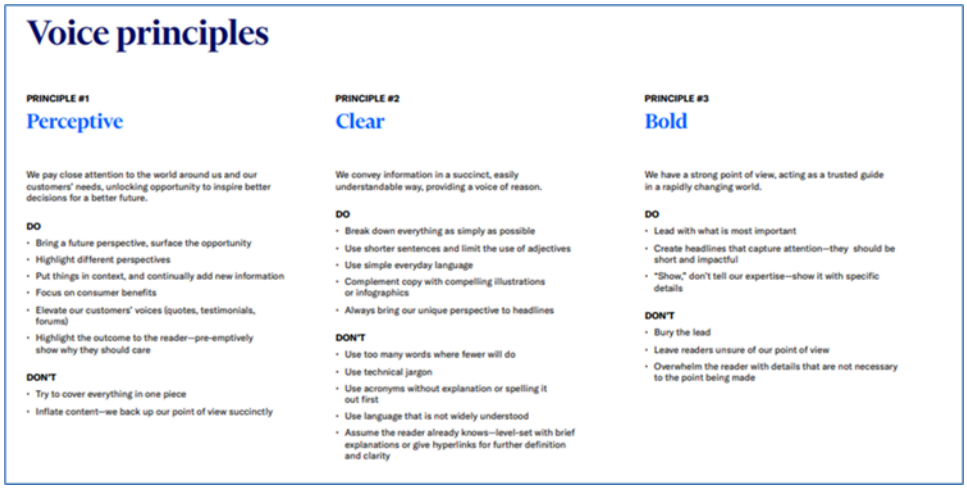
Messaging Priority:

Audience:

Key Considerations

- Action-oriented headlines
- Focus on customer value
- Follow tone of voice



Voice principles

PRINCIPLE #1
Perceptive

We pay close attention to the world around us and our customers' needs, unlocking opportunity to inspire better decisions for a better future.

DO
- Bring a future perspective, surface the opportunity
- Highlight different perspectives
- Put things in context, and continually add new information
- Focus on consumer benefits
- Elevate our customers' voices (quotes, testimonials, forums)
- Highlight the outcome to the reader—pre-emptively show why they should care

DON'T
- Try to cover everything in one piece
- Inflate content—we back up our point of view succinctly

PRINCIPLE #2
Clear

We convey information in a succinct, easily understandable way, providing a voice of reason.

DO
- Break down everything as simply as possible
- Use shorter sentences and limit the use of adjectives
- Use simple everyday language
- Complement copy with compelling illustrations or infographics
- Always bring our unique perspective to headlines

DON'T
- Use too many words where fewer will do
- Use technical jargon
- Use acronyms without explanation or spelling it out first
- Use language that is not widely understood
- Assume the reader already knows—level-set with brief explanations or give hyperlinks for further definition and clarity

PRINCIPLE #3
Bold

We have a strong point of view, acting as a trusted guide in a rapidly changing world.

DO
- Lead with what is most important
- Create headlines that capture attention—they should be short and impactful
- "Show," don't tell our expertise—show it with specific details

DON'T
- Bury the lead
- Leave readers unsure of our point of view
- Overwhelm the reader with details that are not necessary to the point being made

Project Notes:
Overall the content looks fine. Please focus on the following:
-update some of the sub headers for consistency
-review top keywords to make sure they are incorporated in the article
-review and update the tense of the article
-please spell out the first mention of an abbreviation. I've made changes to the ones I came across
-please add CTA. Here is the link:
https://www.moodys.com/web/en/us/solutions/balance-sheet-management.html#tabs-b5a9f79107-item-ff274a3406-tab
You can go to the US solution for more product information

Reviewer	Rvw #1	Rvw Date	Rvw #2	Rvw Date	Rvw #3	Rvw Date	Notes
Marketing							
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[Tracking ID] : campaign

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seo

[Metadescription]
This article discusses the importance of managing and measuring liquidity risk, regulatory guidelines and implications, and how an effective enterprise-wide stress testing program requires and integrates liquidity risk.

This article discusses the importance of managing and measuring liquidity risk, regulatory guidelines and implications.

[Title Tag]
Liquidity Risk Management is a Game Changer | Moody's Analytics

[Meta image]: seo

[Author name]
Cayetano Gea-Carrasco, David Little

[Keywords and Keyphrases] as of 11/8/2023
liquidity stress testing, 260 clicks, 7,786 impressions, 6.9 position mentioned 28 times throughout the article
contingent liquidity, 68 clicks, 784 impressions, 2.2 position, mentioned 9 times throughout the article
liquidity stress test, 59 clicks, 1,122 impressions, 6.7 position, mentioned 29 times throughout the article
internal liquidity stress testing, 48 clicks, 551 impressions, 4.2 position, mentioned 0 times throughout the article
liquidity risk stress testing, 46 clicks, 621 impressions, 3.3 position, mentioned 0 times throughout the article

[Standard Tags]
Region: Americas, APAC, EMEA, Middle East
Capability: N/A
Sector: Banking
Audience: Customer, Prospect
Theme: Bank dislocation
Solution: Regulatory Calc & Reporting
Asset Type: Article
Funnel: Awareness, Consideration

[Variable Tags]

Seo, content

[Header image link]:
content

[Alt text]: content

[Video or other asset links]
content

[Article Headline]
Liquidity Risk Management is a Game Changer

AS PUBLISHED IN: MOODY'S ANALYTICS RISK PERSPECTIVES | STRESS TESTING NORTH AMERICAN EDITION | VOLUME II | OCTOBER 2013

[Subheadline]
This article discusses the importance of managing and measuring liquidity risk, regulatory guidelines and implications, and how an effective enterprise-wide stress testing program requires and integrates liquidity risk.

[Body Text]
The 2007 global financial crisis highlighted the need to proactively manage and monitor bank solvency at an enterprise level by demonstrating the interconnectedness of liquidity risk with both financial and non-financial risks. That interconnectedness was clearly shown through the linkage of the credit quality of US subprime mortgages to the credit quality of many types of structured credit assets to the funding problems of structured investment vehicles – which led to liquidity and solvency difficulties at banks.

Although some academic papers have underscored its importance prior to the crisis, liquidity risk suffered from a lack of attention, relative to capital, by financial regulators in Basel I and Basel II frameworks. Practitioners were aware of the importance of managing and measuring liquidity risk. However, this was performed in isolation and without considering other risks; thus underestimating its impact on their institutions' solvency profiles. Liquidity risk, to a bank's earnings and capital, arises from a bank's inability to meet obligations, expected or unexpected, when they come due.

There are two primary types of liquidity risk:

Funding liquidity risk: Inability to obtain the necessary funding at a reasonable cost
Asset liquidity risk: Inability to liquidate assets (as necessary) at an acceptable price

Although liquidity risk is inherent in the banking business, given the maturity transformation between assets and liabilities, it has not been explicitly addressed in a regulatory framework until recently under Basel III (measured with the Liquidity Coverage Ratio and Net Stable Funding Ratio) or the Comprehensive Liquidity Assessment Review (CLAR), as a part of the Dodd-Frank Act Stress Tests (DFAST) in the US.[1] In addition, the Basel Committee has released a paper with a survey of industry and supervisory best practices on liquidity stress testing.[2] This paper highlights the need to improve the liquidity stress testing frameworks at institutions and major challenges from an enterprise-wide risk management perspective.

[Alt Text/ Subheader]
Figure 1. The Proposed Federal Reserve Regulation On Liquidity Risk Is Closely Aligned With Basel III
Source: Moody's Analytics

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[Body Text]
In general, there are four central topics that must be managed to effectively address enterprise-wide exposure to liquidity risk:

1. **Market liquidity risk**: Focuses on price changes and profit and loss (P&L) impacts
2. **Funding liquidity risk**: Addresses the cash flow estimation of assets and liabilities
3. **Liquidity stress testing**: Considers a financial institution's ability, in the absence of market or funding liquidity, to meet obligations during periods of stress by accurately measuring the liquidity profile of the balance sheet at an enterprise-wide level
4. **Contingency planning**: Uses the liquidity stress test findings to provide guidance about how to create a strategic plan, governance framework, and risk appetite

[Subheader]
An effective enterprise-wide stress testing program requires liquidity stress testing

[Body Text]
Enterprise-wide stress testing frameworks are vital for projecting the performance of a bank's strategy. By performing a sensitivity analysis of financial metrics for a given risk appetite statement and by identifying vulnerabilities under different scenarios, regulatory requirements, and business strategies, a bank can project financial results under dramatically different business environments. However, the interdependencies between capital, liquidity, and funding must also be tested for an effective and holistic view of the risks that a bank may face.

The goal of liquidity stress testing is to analyze if an institution has enough funding sources to withstand unexpected market disruptions given its balance sheet composition, funding profile, and business strategy. Although seemingly straightforward, the design and implementation of a system that effectively performs this goal in a repeatable and automated fashion is complex, with many component factors to consider.

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Meeting Basel III's liquidity risk management requirements and streamlining a liquidity stress testing process requires, ideally, an institution to have a set of qualitative and quantitative tools. They should create a robust liquidity policy and governance framework, as well as a contingency funding plan (CFP), to address their liquidity needs under stress and incorporate quantitative information generated during the liquidity stress testing process.

Institutions should develop the infrastructure and behavioral analytics to perform cash flow projections under different scenarios and generate not only the mandated regulatory required buffers, but also the liquidity stress testing metrics. They should also develop customized, forward-looking scenarios to accurately reflect their business model, and incorporate custom financial, behavioral, and economic variables according to their balance sheet composition and funding profile.

Institutions should analyze the uncertainty of asset roll-over and its ability to maintain a competitive position while generating new business under periods of liquidity stress. A limits framework that identifies potential sources of liquidity risk and concentrations of funding should be designed, implemented, and updated regularly.

Finally, to meet the regulatory and internal stakeholder requirements, institutions should build a customized set of liquidity stress testing reports. To achieve this, an enterprise-wide stress testing program should centralize the relevant liquidity management and stress testing information and methodologies. This program would ensure consistency across stressed credit and liquidity metrics, as well as a consistent analysis across the scenarios of a bank's credit, funding, liquidity, and solvency risk profiles.

[Subheader]
Regulatory guidelines: liquidity risk management and stress testing

[Body Text]
Basel III introduces two minimum standard ratios to proactively manage and monitor liquidity risk: the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR).3 The LCR and NSFR calculations assign a rule-based set of weights to an institution's assets and liabilities that reflect future stressed market conditions. Based on a set of standard behavioral assumptions, these weights may make some assets more attractive than others when calculating the ratios. The two ratios are effectively liquidity stress testing metrics:

- LCR: Reflects a bank's ability to convert high-quality, unencumbered liquid assets to cash to offset projected cash flows during a one-month period. It is related to an institution's amount of available liquid assets to offset the projected amount of outflows over a thirty-day period.
- NSFR: Requires banks to maintain enough stable funding to cover the potential use of funds over a one-year period. It relates to the amount of stable funding an institution needs to offset the liquidity of the assets being funded over a one-year period.

The two ratios mean a stronger integration between credit and liquidity risk management, reflecting the interdependency between credit and liquidity metrics. Additionally, their

calculation requires credit and liquidity risk information. As a consequence, institutions must analyze their cash flow, credit, and other supplementary data under stressed scenarios to facilitate the calculation and ratios parameters. At this stage, banks must also perform an optimization analysis of the high quality liquid assets (HQLA) that can be included in the liquidity ratios calculations and the cost of the carry/transferability of those assets. This is known as the HQLA optimization process.

From a LCR methodological perspective, some areas represent a challenge and the final approach that is implemented varies from one institution to another, thus affecting the LCR value:

- What should and should not be accounted for in the calculation of net outflows. For example, if a bank's collateral requirements increase due to the falling market value of collateral that they already posted (instead of due to the changed valuation of the derivatives themselves), the additional collateral requirements should not be include in the netting.
- Collaterization effects for the HQLA optimization purposes, where payments from the bank (i.e., outflows) are collateralized by HQLA posted by the counterparty with the bank, the cash outflows should be netted by any inflows from the HQLA under some conditions
- How the inflows should be netted. For example, if cash inflows should or should not be decreased by the cash or HQLA outflows that the bank is required to post with the counterparty
- Apart from those, the effect on the HQLA LCR pool of assets of the proposed higher leverage ratio is also an area of concern for financial institutions, especially in the US

The regulatory standard requires that institutions should continuously meet a minimum ratio of 100%. The LCR is being deployed under a 2015-2019 transition observation period to ensure that institutions have the necessary time to adjust their funding structure, increase the amount of high quality liquid assets that qualify for the ratios, and implement the necessary analytics and enterprise-wide risk architecture to support their calculation and reporting during the process. The NSFR is being revised by the Basel Committee Liquidity Working Group due to complaints from the industry about its calibration and negative effects on the maturity transformation business.

The Federal Reserve’s (the Fed) proposed regulation on liquidity risk under sections 165 and 166 of the Dodd-Frank Wall Street Reform and Consumer Protection Act closely follows Basel III guidelines on liquidity risk management. However, the Fed has not yet released the final liquidity rules. The Basel Committee released the final liquidity guidelines for both ratios in January 2013 and the Fed released the final rules on capital in June 2013.

Practically speaking, the Fed’s proposal on liquidity risk has two major components: a set of qualitative liquidity requirements – mainly the creation of a CFP monitoring and governance framework – and a set of quantitative liquidity requirements focused on the LCR and NSFR metrics.

[Subheader]
Basel III liquidity implications for US institutions

[Body Text]
As of now, the Fed intends to adopt Basel Committee liquidity ratios as the liquidity standard. In terms of coverage, large bank holding companies and non-bank covered companies, as well as some US bank holding company subsidiaries of foreign banking

organizations (that rely on supervision and regulation letter SR 01-01), would be subject to these metrics.

On October 24th, the Fed released the proposed rules on liquidity risk management to create a minimum liquidity requirement (LCR).4 The proposal is based on the standard agreed on by the Basel Committee. However, the Fed's proposal introduces two versions of the LCR: a full version for large banking organizations and a light version for bank, savings, and depository holding companies.

The core aspects are:

1. **Model-based vs. rule-based**: Haircuts and behavioral assumptions are provided, but covered companies may have to develop their own liquidity stress testing and behavioral assumptions to supplement the calculation (e.g., amount of stable deposits).
2. **Buffer composition**: There are three levels of highly liquid assets (1, 2a, and 2b), consistent with the Basel standard under the Basel III guidelines.
3. **HQLA definition**: The Fed's proposed definition of liquid assets that qualify for the buffers is different from Basel III. For example, under the Fed guidelines, only cash, securities issued, or guaranteed by the US government, a US government agency, or a US government-sponsored entity qualify as liquid assets. The exclusion of hypothecated and operational assets is also included in the proposal.
4. **LCR transition period**: Consistent with Basel III, companies must achieve a level of 100% under a transitional schedule. On January 2015, covered companies will be required to meet an LCR of 80%, which increases by 10% annually until January 2017. This is two years ahead of the timeline suggested by Basel and one year ahead of the European CRDIV timeline. In addition, if an organization does not meet the LCR 100% level for three or more consecutive business days, a plan for compliance purposes must be submitted to the Fed.
5. **Liquidity Compliance Plan**: The liquidity compliance plan should include a detailed analysis of the institution's liquidity and funding structure to meet the 100% LCR requirement, effects/actions on the risk profile, and including but not limited to remediating plans and a roadmap with estimated timelines. Weekly updates should be submitted until full compliance is achieved. If a 100% LCR level is not met, the Fed may apply enforcement actions.

The Fed has also provided guidelines on implementing effective liquidity stress testing frameworks and on expectations for supervised institutions from scenario, modeling, and governance perspectives. Liquidity stress testing must:

- Include multiple scenarios
- Be forward looking
- Be performed under different time horizons (e.g., overnight, 30-day, 90-day, and one-year time horizons)
- Use results to determine the liquidity buffer
- Incorporate the conclusions in the contingency funding plan

In addition, the Fed proposed two new liquidity risk reports templates in September 2013.5 The new reports need cash flow information under different risk horizons, which requires a cash flow analysis that traditional ALM systems may not be able to produce without further customization. In terms of coverage, global systematically important banks (G-SIBs), foreign banking organizations, and bank holding companies will be subject to the new reporting.

[Subheader]
Understanding the CLAR

[Body Text]
In addition to the forthcoming Basel III LCR and NSFR stress testing metrics in the US, the Fed has introduced a liquidity test, the CLAR. The goal is to measure liquidity risk at both an institution and system level in a similar fashion to the CCAR, but only for some large institutions at this stage.

CLAR tests a bank's ability to meet funding obligations under periods of stress. Depending on the results of this test, banks may be forced to change their funding sources or structure. Unlike the CCAR, the results of the CLAR and their methodological framework are not made public. This may render the exercise less useful for investors from a disclosure perspective. Although other countries have similar supervisory frameworks to monitor liquidity stress testing, the CLAR represents a new generation of sophistication and granularity.

The CLAR requires institutions to calculate a series of liquidity and funding stress testing metrics based on behavioral assumptions and projections that accurately reflect their true funding profile and balance sheet composition under different scenarios. This rule, in turn, affects the projected and reported liquidity stress testing and funding level from one institution to another.

[Alt Text/ Subheader]
Figure 2. The Fed Guidelines For Effective Liquidity Stress Testing Frameworks
Source: Moody's Analytics

[Image]
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[Body Text]
This requirement can only be met if the institutions apply their own internal behavioral analytics that reflect their unique characteristics of their funding and business models. Therefore, an accurate assessment of an institution's internal behaviors relies on a comprehensive characterization of both assets and liabilities under different scenarios.

There are key benefits for institutions when using behavioral models, given that they reflect unique competitive funding advantages that can enhance returns. The behavioral models

offer more realistic results, which are produced by better managing assets and liabilities behavior. At this point, customer stickiness can be maximized by analyzing the funding strategy and CLAR results. Overall, this represents an opportunity to enhance returns versus using standard behavioral assumptions that often do not accurately reflect an institution's business model and liquidity profile.

An internal set of behavioral models, similar to those in the CLAR-related framework, enhances the cash flow simulation and forecasting analysis by explicitly reflecting an institution's business and funding model. For example, determining the proper parameters for behavioral assumptions in asset and liability management (ALM) systems is a crucial step toward building those systems. However, institutions typically do not pay adequate attention to the behavioral analysis to accurately reflect their balance sheet structure in the calculation. As a result, institutions may discover significant inaccuracies in their liquidity stress testing analysis, cash flows projections, funds transfer pricing metrics, funding assumptions, and liquidity metrics.

For example, analyzing borrower prepayments can have a material effect on liquidity stress testing measures and funds transfer pricing calculations. At this stage, the behavior of retail and corporate borrowers must be modeled separately. The decision of corporate borrowers to prepay their debt usually follows a function of a state-dependent rational exercise. Retail borrowers' prepayments should be analyzed using a set of explanatory factors, capturing borrower-specific information, seasonal variation, market rates, marketing campaigns, and macroeconomic factors.

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Determining the correct maturity for exposures that have short contractual maturity, but are typically subject to review and renewal at contractual maturity, can also affect an institution's liquidity gap metric, net interest income, or earnings at risk measures for stress testing purposes. The lack of granularity on the utilization measurements for revolving credit facilities also has a material effect on liquidity buffers and funding because higher usage implies higher funding needs, and therefore higher liquidity risk.

[Subheader]
Contingent liquidity quantifies liquidity risks

[Body Text]
Regulators have emphasized the role of contingent liquidity in the new regulations across jurisdictions, and the need to include this metric into an institution's liquidity stress testing framework. Contingent liquidity is the cost of maintaining a sufficient cushion of high quality liquid assets to meet sudden or unexpected funding obligations and absorb potential losses.

A funds transfer pricing process is the central component of asset and liability management, as it facilitates risk transfer, profitability measurement, capital allocation, and business unit incentive alignment. The contingent liquidity comes with a real cost to an institution because it is related to the cost of the liquidity buffers. Therefore, contingent liquidity and funding costs (e.g., via funding valuation adjustments, FVA) should be allocated into an institution's FTP frameworks to manage origination activities and allocate the cost of liquidity.

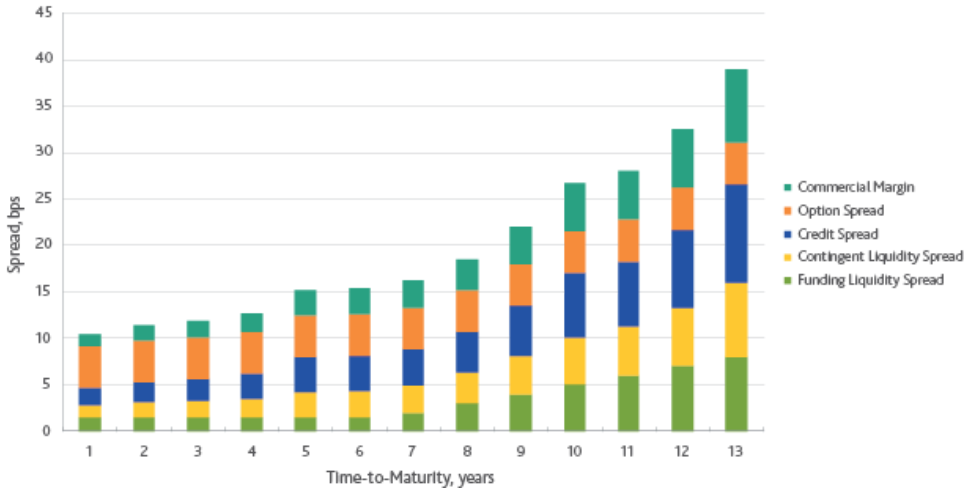
The FTP components depend on the transfers of assets and liabilities, which is driven by the business model, balance sheet composition, and desired future state. With corporate loans,

for example, the FTP components should include a credit spread, which compensates the financial institution for bearing the credit risk associated with the exposure, as well as an option spread, which is a premium that compensates the bank for any embedded options in the contract (e.g., prepayment options).

The FTP framework should also include the funding liquidity spread in its calculation, which is the expected cost of funds required to support the exposure for the remainder of its life, and the contingent liquidity spread, to compensate for the cost of maintaining a sufficient cushion of high quality liquid assets to meet unexpected obligations. Figure 3 illustrates the effect of including contingent liquidity into the FTP components for a wholesale loan portfolio under different effective maturities – the longer a loan's maturity, the higher the contingent liquidity buffer.

[Alt Text/ Subheader]
Figure 3. Funds Transfer Pricing Grid: Spread Decomposition Analysis
Source: Moody's Analytics

[Image]
-/media/web-assets/publications/risk-perspectives/edition-images/ii-stress-testing-na/articles/2_3_liquidity_management_game_changer/adapting_ftp_calculation



[Subheader]
Integrating liquidity risk within enterprise stress testing programs

[Body Text]
Effective enterprise-wide liquidity stress testing that incorporates the methodological approaches of Basel III's LCR and NSFR stress testing metrics with CLAR and Contingent Liquidity concepts will present a unique challenge when integrating across risk.

It is clear that an enterprise-wide architecture would be an advantage for financial institutions, but the complexity and cost of building an ideal system could be substantial. However, it will be best practice for institutions of all sizes and levels of complexity to integrate a liquidity stress testing framework into their enterprise stress testing program. There are some key aspects that must be considered when developing this framework:

- It is best practice to integrate data management infrastructure, behavioral analytics, cash flow calculation systems, and liquidity reporting systems into an enterprise risk management platform to reduce costs, improve efficiency, and automate the calculation and submission of regulatory requirements. This integration facilitates a consistent liquidity stress testing analysis across asset classes, risk types, and other stress testing-related regulatory requirements (e.g., CCAR).
- From a liquidity stress testing compliance perspective, institutions should maintain the liquidity metrics history for trend analysis, auditing, and benchmarking.
- From a workflow and data management perspective, institutions should develop centralized liquidity risk management infrastructures that strive to integrate data, stress testing analytics, and reporting.
- All information critical to calculating, managing, reporting, and monitoring the liquidity stress testing metrics should be easily calculated and cost-effective.

Finally, a liquidity stress testing framework should allow the integration of customized scenarios and internal behavioral assumptions to effectively analyze, calculate, and report liquidity and funding metrics across several dimensions, meet regulatory requirements on liquidity stress testing (e.g., CLAR), help with internal analysis (e.g., strategic funding planning and FTP), and ensure scalability by leveraging the existing systems at institutions.

[Sources]

1 Bank assets and liabilities are often maturity-mismatched, with long-term assets funded through short-term liabilities.

2 BIS Working paper n. 24: Liquidity stress testing, a survey of theory, empirics and current industry and supervisory practices.

3 Bank For International Settlements, Basel III: International Framework for Liquidity Risk Measurement, Standard, and Monitoring, December 2010.

4 www.federalreserve.gov/aboutthefed/boardmeetings/FR-notice-lcr-20131024.pdf

5 www.federalreserve.gov/apps/foia/proposedregs.aspx#icp

[CTA]