White Paper

Perspectives on Liquidity Risk Management

A SAS report written in collaboration with Longitude Research

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Introduction

Until the financial crisis, ready access to liquidity was something most banks took for granted. The management of liquidity risk was rarely at the top of the agenda. The Basel II regulations made little reference to it, focusing instead on capital adequacy. Banks took limited steps to put appropriate protection in place. As the Basel Committee on Banking Supervision outlined[1], many banks did not have a framework in place to account for liquidity risks. Few had considered the size of the liquidity cushion they would need to satisfy contingent obligations because they viewed prolonged disruptions to liquidity as highly implausible.

The sudden evaporation of liquidity that led to the collapse of Northern Rock, Lehman Brothers and Bear Stearns changed all that. It showed that even well-capitalized and profitable institutions could rapidly fall victim to a disruption in liquidity. Moreover, it demonstrated that liquidity risk is frequently hidden from view – a bank can show every sign of functioning normally when, in fact, it may be highly exposed to a major liquidity crisis that could quickly lead to its collapse.

Now, regulators around the world are paying close attention to liquidity. For example, in 2008, the Basel Committee on Banking Supervision published its Principles for Sound Liquidity Risk Management and Supervision. This provided guidance for banks in key areas such as:

- The importance of establishing a liquidity risk tolerance.
- The need to maintain an adequate liquidity cushion.
- The design and use of stress-test scenarios.
- The importance of a robust and operational contingency funding plan.

In addition, liquidity ratios now form part of the Basel III framework. Under the Liquidity Coverage Ratio, banks must maintain a level of cash and other liquid assets that would be equivalent to the amount required to survive 30 days without being able to access funding markets.

The precise details of these proposals remain under discussion, however. In January 2013, the Basel Committee gave banks more time to comply by extending the effective date from 2015 to 2019, and broadened the definition of assets that would be counted as highly liquid. Basel III will also require banks to meet a Net Stable Funding Ratio, which sets a minimum funding threshold that supports long-term, stable funding.

Financial institutions recognize the importance of liquidity risk management. Many are taking steps to get ahead of the regulatory agenda and ensure that they have sufficient liquidity buffers. They are conducting more frequent, and more stringent, stress tests covering a wide range of risk factors. And they are investing heavily in systems and processes to ensure that they have a timely, accurate picture of their liquidity position intraday, and over a longer period, across the entire institution.

The finance, risk and IT functions have a critical role to play in managing these changes. In this report, we explore the issue of liquidity risk management from those three perspectives and examine how these different functional areas are responding to the challenges they face.

In addition to the executives from financial services institutions who kindly gave their time and insights in the development of this report, we would also like to express our thanks to the following experts who also gave invaluable input:

- David Buckham, CEO of Monocle Solutions
- Valérie Villafranca, Partner at Accenture
- Sumit Mathur, SAS Global Product Manager, Risk Management for Banking

In the summer of 2013, SAS and Longitude Research interviewed a number of experts and finance executives to determine the challenges they face managing liquidity risk and their priorities in mitigating it. What follows is a synthesis of these interviews, written in first person and representing the viewpoint of chief officers of a major European retail bank.

The CFO Perspective

In our institution, liquidity risk is something that is managed primarily by the treasury function. As chief financial officer, I oversee the treasury function and look at liquidity and asset liability risks in the context of the institution's broader financial needs and balance sheet management.

In essence, the treasury function serves as a responsible steward of the balance sheet. We ensure that the bank can meet its financial obligations, provide transparency regarding our funding position, and ensure that there are contingency plans if we encounter a temporary loss in access to funding. In our institution, the treasury function is centralized. This gives us better control over liquidity because all the major transactions have to go through this function, and this means that we have a clear overview at the head office when major transactions and trades are taking place.

For us, liquidity risk is about looking at the short term and the long term. Of course, we need to make sure that we can cover our payment obligations on an intraday basis, but we also need to be absolutely confident that we have adequate funds to support our loan portfolio growth over several years.

An important process for us is the monthly reconciliation. This reconciliation is especially valuable because there is a quality and depth to the monthly report that simply isn't possible with intraday reporting. We also provide weekly reports to the board on our funding and liquidity position.

A new phase of liquidity risk management

We have entered a new phase of liquidity risk management. We're no longer in a crisis situation, with the management team meeting on a daily basis to determine whether there is enough cash at the end of the day.

Our focus has shifted to putting the infrastructure and processes in place that will enable us to implement a long-term, strategic approach. This is based on our liquidity risk tolerance – the number of days we need to remain solvent in a stress scenario.

Regulation is clearly a factor driving our management of liquidity risk, but our view is that merely complying is not enough. We have to think beyond regulation and consider our specific circumstances, as well as those of the financial system as a whole. We have situations and challenges that require us to do more than what regulators prescribe.

For internal purposes, we optimize the liquidity buffer based on the stress scenarios that we run so that we can meet our liquidity deficit for that particular stress scenario. The first priority is to meet the regulatory demands, but having done that we can move to optimization.

A business issue as well as a regulatory one

Liquidity risk management is primarily a business issue for us, which involves thinking through how we adapt strategically and over the long term. One positive aspect of increased focus on liquidity is that we are more client-focused. Regulations mean the costs of the balance sheet on the asset side have increased, so we need to think about how to recoup those costs by selling clients more and better products.

It also pushes us into paying more attention to building deposits from our customers. It's clear that we need to rely less on capital markets and unsecured wholesale funding, and that we need to do more to attract retail deposits. But that takes time because we need a stronger approach to serve that market.

We have also taken steps to diversify our lending sources and to ensure that we have as much flexibility as possible for maturity transformation. We also try to make sure that our customer deposit base is well diversified across countries, types and maturities.

In short, we need to adapt our business models to a more stringent regulatory environment in terms of liquidity. We also need to recognize that liquidity has a cost – and that is something that we, and other banks like us, did not pay enough attention to in the past.

The importance of visibility and control

Effective liquidity risk management requires us to have full visibility over the cash flows and positions across the entire bank. That is very challenging. Like many banks, we operate across multiple jurisdictions, and have multiple platforms and applications.

Our goal has been to develop greater standardization and centralization of liquidity management. We needed to move away from using spreadsheets and a manual approach to one that is based on a more consistent, centralized approach. We wanted to gain greater visibility and control over our liquidity usage. That has meant more frequent reporting cycles and adopting a more precise approach to liquidity management.

One of the benefits of this greater centralization is that it has broken down silos between different functions and risk categories. We now have better communication between risk and treasury when, in the past, the relationship between the two could, at times, be antagonistic.

Regulation has caused us to rethink our investment policy. Ultimately we need to keep more securities that are highly liquid and would be eligible to meet the standard set by Basel III as liquidity buffers. But at the same time, the safer we go on the investment portfolio side, the greater the pressure on the spread.

There's a fine balance between how much we would need at a minimum to hold for liquidity purposes and what type of securities we keep in the rest of the portfolio to get better yields than the liquidity buffer.

We are at a stage where, in addition to meeting compliance obligations, we need to get more value from liquidity management. With the emphasis on transparency and control via more robust, frequent reporting, we need to use this information to improve management decision making.

The CIO perspective

Data collection and management is one of the important challenges associated with asset liability and liquidity risk management. We need to have data for the full balance sheet, and that runs into hundreds of millions of dollars in assets. As chief information officer, it is my responsibility to make sure that all the systems and tools are in place to allow the CFO and chief risk officer to undertake asset liability planning and liquidity risk management across the bank's entire asset base and positions.

An investment of daunting scale

One of the challenges we have is the sheer scale of the investment required to manage liquidity risk appropriately. Until recently, we simply did not have the systems in place to manage liquidity risk because there had been no regulations requiring us to manage this risk category with the same level of detail as market risk or credit risk.

Building the infrastructure and systems to manage liquidity risk has been a huge undertaking, primarily because managing liquidity is more complex than managing capital. Specifically, for asset and liability management, we have implemented an integrated risk and finance data mart, which means the data required for computations needs to come from two sources: risk applications and finance applications.

The investments have not just been made with an eye on compliance. We've also tried to create efficiencies for our data management and risk analytics processes. As we focus more and more on business needs, rather than just compliance needs, we hope to secure a broader return on investment.

Our investments in IT infrastructure have also made it easier for us to take into account different types of risk-adjusted spreads, such as credit-risk adjusted or liquidity-risk adjusted spreads. This helps us price a position more accurately and know what kind of returns we can expect.

The need for accuracy

What's most critical from a liquidity risk perspective is to have an accurate picture of the amount of cash or cash-like securities that we are holding at any point. By building an accurate picture of the quantities of cash we're holding, its location and how quickly it can be deployed to meet delivery demands, we can optimize our liquidity management and ensure that we don't need to buy costly securities unnecessarily.

One challenge we have faced is that, like many banks, our approach to risk management has been somewhat silo-based, with credit risk undertaken separately from market risk. But with the regulatory focus on enterprisewide stress testing, we needed to have greater commonality in infrastructure, data marts, models and risk engines. A more integrated approach is essential because without it, it takes too long to consolidate the results of our stress tests.

Demand for processing power

Regulation also imposes stringent requirements for data processing. For example, if we are holding a certain position, then we need to run several processing steps in order to make sure it would qualify as a particular type of asset. Not every asset can count toward our liquidity buffer, and we need to process millions of positions to determine whether they are eligible. Our IT systems and software need to be highly scalable to process these positions.

Another challenge we have faced is that the consumers of our data – the finance and risk departments – do not always know what they need. We can develop models, but the finance teams might request an entirely different data set, resulting in a long lead-time to get this new data into our systems.

Although our data is much better than it was a few years ago, it is still far from perfect. In that respect, we're no different from any other bank – because no institution has perfect data. Sometimes you have to make assumptions. You need a flexible approach to be able to deliver robust, useful reports to the finance and risk functions and the board.

The CRO perspective

Until recently, liquidity risk was not really a major priority for the risk office. This was something that was mainly left to the treasury department. Since the financial crisis, however, the risk function has become more involved.

In the past few years, we have made significant changes to our liquidity framework. We've implemented a new risk appetite with liquidity core ratios that show our funding concentration, balance sheet profile and financing capacity. Our approach is based on setting **targets**, rather than **limits**, because we believe that offers a better risk-based approach.

Liquidity risk is an enterprisewide issue, not just another risk category. It can be triggered by other risk categories, such as credit risk, and can emerge from a wide range of sources. For example, it might stem from issues with the bank's loan book, large trading losses or country risk issues, such as a sovereign debt crisis. That means that we need to look closely at the interdependencies between liquidity risk and other risk categories – particularly credit default and interest rate risk.

At a high level, there are two types of liquidity risk for which we need to be prepared: marketwide risk that affects every bank in the same way; and idiosyncratic risks, which are bank-specific. We need to run stress tests that examine the impact of different liquidity risk drivers across both categories. By running different scenarios, we can forecast how our balance sheet is going to react in response to that scenario and what kind of buffers we are going to need.

One of the challenges with managing liquidity risk is that you need the right people. Risk managers who focus on liquidity need a very deep knowledge of the bank and its balance sheet. They need to understand our entity profiles. Because we are in various countries, they need to understand the regulations in these countries. It is not always easy to move funding from one country to another because of regulatory restrictions.

Stress tests take center stage

Stress tests are now a key part of our risk governance. When conducting stress tests, we need to ensure that we don't just rely on the quantitative aspects. We need to use our intuition and ensure that the management of liquidity forms part of a broader risk culture. It's risky to think only in terms of regulatory compliance when managing liquidity risk. A compliance mindset leads to hard-wired, rigid processes when what we really need is adaptability.

Reverse stress testing means that we are aware of the worst possible scenario. We run our balance sheet through about 10 different scenarios, determine the worst that we can expect and then prepare for that. Everything we do subsequently is to enhance our preparedness for that worst-case scenario.

Running stress tests is just one approach, however. We also need to know how we will identify the early-warning signs, and know how and when we need to respond. An important part of the work is to put in place the governance and processes to ensure that action is taken in a timely manner. Simply monitoring liquidity and reporting on it to internal and external stakeholders is useless without the ability to make decisions based on that information.

A contingency funding plan requires that we identify the early-warning signs of market stress and have a plan in place to set triggers for taking action, allocating responsibility to particular groups or individuals and finding alternative sources of liquidity. We also need to communicate quickly and clearly, to both internal and external stakeholders, so that further contamination can be prevented.

Moving beyond spreadsheets

From a risk perspective, we need to prioritize meeting regulatory demands. But the wider perspective is that we require complete access to all of the information we need so that we know where our assets are at any point in time. We need a central repository for data that will enable us to aggregate and compile our liquidity position in near-real time. It is no longer possible to manage risk using spreadsheets – we simply cannot afford for this process to be manual.

Managing liquidity risk means focusing on several time frames. First, we need to manage liquidity at the intraday level – looking at the payments that need to be made and forecasting our cash flows. We then need to look at our access to secured and unsecured funding sources, which is over a slightly longer time frame. Finally, we need to look at liquidity risk strategically, thinking about how our business strategy will affect our liquidity and vice versa.

The reporting role

A crucial role for the risk function is reporting liquidity risk – both to internal and external stakeholders. Recently, an important area of focus for us has been the timeliness of reporting. We need to be able to collect, analyze and distribute reports very quickly because the time frames for regulatory risk are extremely short. A liquidity risk period is more likely to be months.

A major change is the frequency of reporting on liquidity risk. We produce daily liquidity reports, which show the more important trades of the day and any liquidity mismatch. Then there are weekly presentations to the executive committee. We also give a monthly report to the liquidity committee, where we analyze the ratios, stress testing, early-warning indicators and mitigation plans.

There's a difference between what needs to be reported internally and what needs to be reported to the regulators. For internal purposes, we have a range of key performance indicators with which the regulator is not necessarily concerned.

The board wants assurance that we have a safe and sound balance sheet. The indicators that they are interested in include the amount of long-term stable funding as a ratio of our assets. This must always be greater than 100 percent. Then there are other metrics that would tell them their short-term and long-term liquidity position.

The regulators, on the other hand, are focused on metrics such as the liquidity coverage ratio and net stable funding ratio. They expect us to meet a minimum standard, but they also expect us to respond in ways that are specific to our bank. We need to do what suits our portfolio and growth strategy, and that means doing our own calculations. Regulation is not an end goal, and we need more scenarios than those for which we are required to show results.

Conclusion

In just five years, liquidity risk management has jumped to the top of the agenda. Banks and other financial institutions now recognize that liquidity can never again be taken for granted. They are putting mechanisms in place to protect themselves against a sudden disruption in liquidity and exploring a range of different scenarios to assess how they would affect cash flow and the balance sheet.

Managing liquidity risk is a highly complex – and, for many banks, fairly new – undertaking. It requires complete visibility of all assets and positions at any given time. Gaining this insight is far from easy, particularly for large banks that span multiple jurisdictions and have grown by acquisition. It requires significant investment in people, processes and technology at a time when many banks are still trying to recover from the financial crisis.

For most financial institutions, the priority is dealing with their compliance obligations. Increasingly, however, leading organizations are looking beyond regulation to determine how more effective management of liquidity could have broader business and competitive benefits. The focus for these organizations is on optimizing liquidity – and using the information they have gained by meeting their compliance obligations to make better decisions and enable a more client-centric approach.

Want to learn more about liquidity risk, its challenges and how other organizations have successfully managed liquidity while expanding their loan portfolios? Visit sas.com/en_us/insights/risk-fraud/liquidity-risk.html.

Endnote

[1]Liquidity Risk Management and Supervisory Challenges, February 2008

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