

Managing Liquidity in Times of Stress

Proper evaluation and provision of liquidity risk is not a quick fix; it requires diligent contemplation of needs, and a reliable partnership with the right technology and data provider.

Historically, liquidity risk has been the poor cousin of market risk and credit risk. While the global financial crisis of 2008/2009 first pushed the issue of liquidity risk to the forefront of attention, the most recent market dislocation due to the Covid-19 pandemic has once again highlighted the salient significance of the topic.

This is particularly so for institutional investment managers who have to meet margin calls, perform regular fund rebalancing, and execute redemptions, among other potentially liquidity-threatening activities. Failure to afford liquidity risk management the focus and priority jeopardizes the health of an institution, perhaps fatally so.

Liquidity risk occurs when a fi-

nancial institution is unable to meet its short-term debt obligations. It is a particular worry during periods of market stress when appetite for certain assets evaporates, bid/offer spreads widen significantly, and an institution is either unable to liquidate those assets or can only do so at a crippling loss (see Figure 1).

Pension funds and other institutional asset managers tend to look at their liquidity risk in two different ways: through the prism of market liquidity and through the prism of funding liquidity. From a perspective of market liquidity, asset managers need to monitor their available liquidity in the future, particularly in the near-term. This also involves keeping track of the minimum liquidity requirement, the risk appetite, and also,

for example, how to model possible haircuts when monetizing an asset.

Funding liquidity, in contrast, involves the capacity to project all possible cash flows and cash balances, as well as identifying potential funding gaps. Both of these functions are highly germane to the effective functioning of any financial institutions, but basic financial exigencies are supplemented by regulatory and supervisory mandates to provide proper liquidity risk management.

Rules and regulations

In the wake of the great financial crisis, and as part of the 2010 Basel III banking reforms (see Figure 2), the Basel Committee on Banking Supervision (BCBS) introduced both the liquidity coverage ratio (LCR) and the net stable 

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Figure 1: What impacts liquidity risk?



funding ratio (NSFR). These were designed to improve the resilience of banks to short-term liquidity crunches of the kind which had been so damaging in 2008 and 2009 (see Figure 3).

The LCR was structured to ensure that banks possess enough high-quality liquid assets (HQLA) to survive a period of market dislocation and illiquidity lasting 30 calendar days. A 30-day period is deemed to be the minimum necessary to allow the bank's management enough time to take remedial action.

The NSFR, however, is designed to fortify a bank's liquidity over a longer time period and seeks to do so by incentivizing banks to rely on more stable sources of funding rather than often illiquid assets. In May 2016, the Federal Deposit Insurance Committee (FDIC) also introduced a proposal to create a net stable funding ratio that would "implement a liquidity requirement consistent with the NSFR..." [1].

From September 30, 2020, under new rules introduced by the Euro-

Figure 3: Requirements for LCR and NSFR simulation [3]

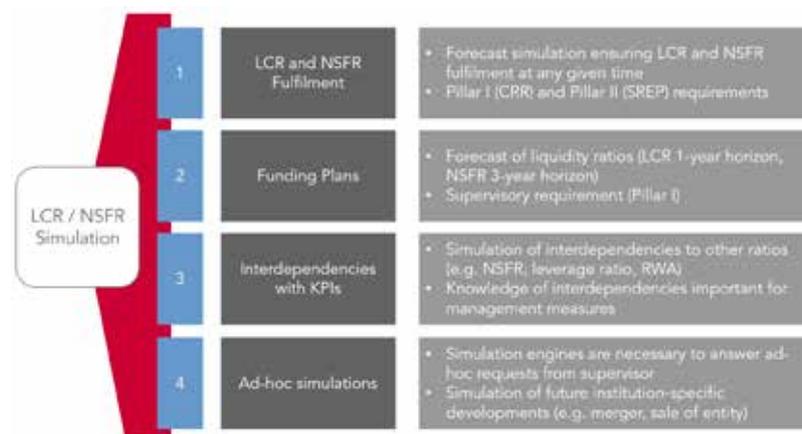
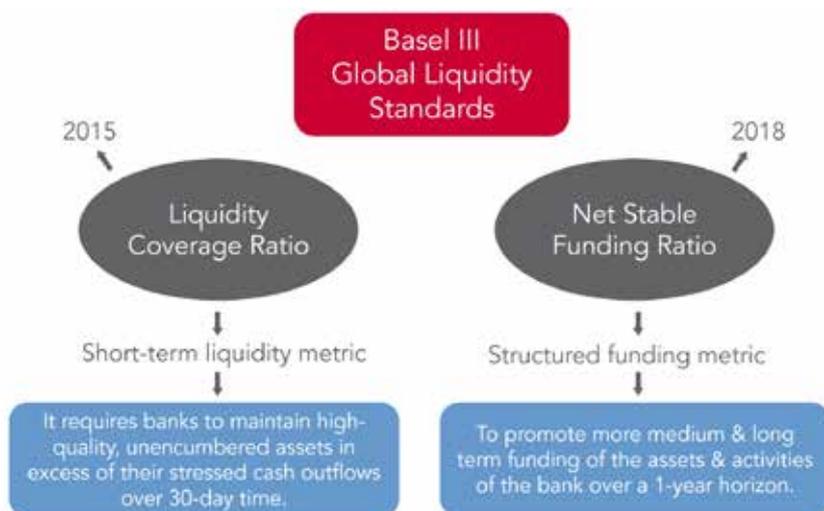


Figure 2: Basel III and its implications [2]



pean Securities and Markets Authority (ESMA), EU fund managers must employ liquidity stress-testing tools to better insulate themselves in times of market dislocation. The regulator puts particular emphasis on the ability of investment funds to meet redemptions.

The dangers of the latter were spelled out in June 2019, when hitherto star fund manager Neil Woodford was forced to close his UK Equity Income Fund after a series of redemptions. The most serious of those redemptions was that of Kent County Council, which pulled its entire £250m investment in Woodford's fund. By May 2019, total assets under management had slumped to £3.7bn from a peak of £10.2bn.

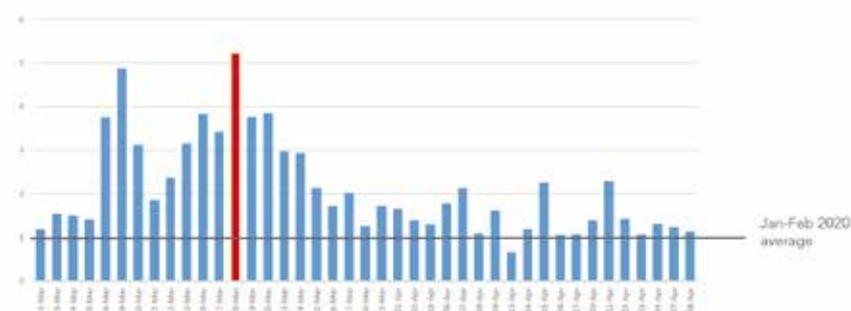
The margin call minefield

But serious investment managers don't need to be cajoled into looking more intently at liquidity risk by regulators; they have known it is a minefield for a long time. The dangers of liquidity risk are particularly acute when they are asked to execute margin calls on derivative positions in times of market stress.

In these periods, margin calls are increasing as asset values depreciate, but market liquidity is also drying up. Assets which might have taken a day or two to liquidate can now take 10 or 15 days, and then only with a much increased haircut. Asset managers are caught in the rip tide.

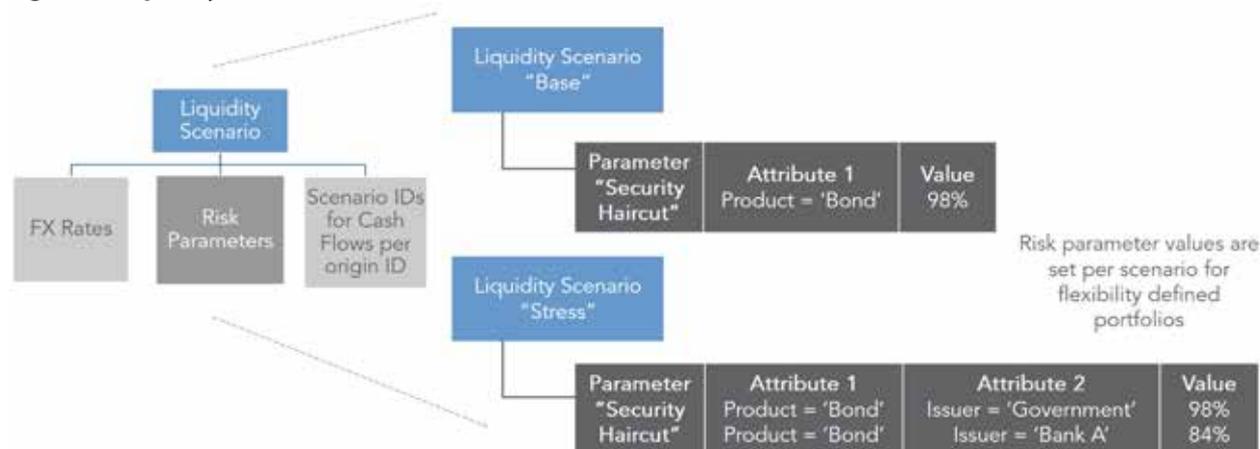
There are two types of margin call: variation margin and initial

Figure 4: Gross variation margin calls on centrally cleared derivatives



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Figure 5: Liquidity scenarios



margin. The former increases or decreases to reflect day-to-day changes in derivative instruments, while initial margin is posted to protect counterparties against possible future changes in market value of instruments in the event of a counterparty default. Both forms of margin increase, and sometimes dramatically, during periods of market dislocation and volatility.

For example, in the worst days of the recent Covid-19 sell-off, some

instruments witnessed their biggest price movements in three decades, and initial and variation margin spiraled higher. Recent data released by the Bank of England shows that in March the daily variation margin calls by UK central counterparties were up to five times higher than seen in January and February (see Figure 4).

The amount of initial margin required by central counterparties also increased dramatically, hitting

a peak which was 31 percent higher than the average margin seen earlier in the year [5].

Margin calls appear to have done their job; central counterparties were protected and derivatives markets continued to function during the recent crisis. But funding those margin calls created considerable stress as banks and asset managers scrambled to find sources of liquidity. Rather worryingly, the Bank of England noted, "This contributed to a 'dash for cash' in March 2020, as some market participants appeared to have insufficient buffers of cash-like assets to meet actual or anticipated margin calls" [4].

It goes on to say that this so-called dash for cash was both "abrupt and disorderly" and went on to warn, in its best head-masterly vein, that "Participants in derivatives markets should ensure their liquidity management strategies take account of the possibility that margin calls and requirements may rise significantly during periods of market turbulence".

Static vs. dynamic

It is not that market participants are indifferent to the urgency of liquidity

risk management and its relevance during market stress; it is that effective risk management is acutely difficult to perform comprehensively. The asset management industry has realized that static stressed-scenario liquidity testing is not sufficient to meet demands in a period of market dislocation. Consequently, it has, with the larger players leading the pack, moved to a dynamic, multi-period stress-testing methodology.

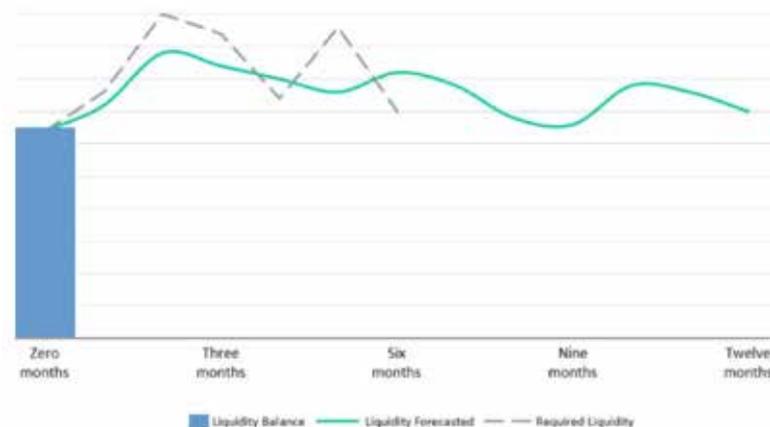
For example, in the real world, asset managers are bound by their mandate and documentation to rebalance portfolios according to predetermined models or risk parameters. This means they will sometimes, during periods of market stress, be forced to chase asset prices lower, buying them at a loss. This in itself can cause a second wave of liquidity pressures, as one crisis feeds off the next (see Figure 5).

Consequently, a multi-event stress scenario is required to more adequately reflect the reality of husbanding liquidity during periods of dislocation. The institution must possess sufficient liquidity to be able to withstand several cycles of the same crisis but in different form. For example, a fund's liquidity risk-appetite statement might state that the fund will at all times maintain sufficient liquidity to withstand five stress scenarios, each of which would be similar in severity to the collapse of Lehman Brothers in September 2008.

Alternatively, funds modeling their capacity to withstand multiple redemptions might incorporate a series of shocks, such as the collapse of a major market-maker. Historically, this has caused extreme redemption levels of 15 or 20 percent of total assets and adverse external market shocks, such as an unexpected hike in interest rates.

Figure 6: Liquidity forecasting [6]

ENSURING ACCURACY OF LIQUIDITY FORECASTING



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Figure 7: Liquidity risk management: additional monitoring tools [7].
Source: Accenture. Used with permission.



A multiple scenario and rebalancing strategy, according to designated rules, can also incorporate opportunities for tilting – that is to say, evaluation of possible market openings for trading gain. Comprehensive and efficient liquidity stress testing is a win/win (see Figure 6).

Hands on

But while the theory might be acknowledged, the practice at the majority of investment funds is still intermittent, idiosyncratic, and largely manual. Liquidity risk management is generally not part of a long-term and continuous strategy, but all too often viewed as a short-term operational problem. Those in the industry speak of a couple of staffers getting together in an office every two or three months with only an Excel spreadsheet for company – and this is even at large funds.

The process is wasteful and costly, and often prone to human error. It is, moreover, complicated by issues of governance. Risk management is frequently siloed according to asset class rather than centrally handled. The problem is compounded by the fact that most leading asset managers deal with a certain percentage of their market exposure internally through in-house portfolio managers, while the remainder is handled by external managers. The resulting risk-management effort is thus duly duplicated, with multiple and confusing sources of information.

What is required is an automated, integrated, and single view of liquidity risk across multiple asset classes in all markets. This single platform, operated in a central location, would have the capacity to run forward-looking liquidity analysis, calculate and report liquidity risk exposure,

which takes into account all potential future obligations.

Such a platform would produce much more effective, continuous, and consistent liquidity risk data. It would also free up the staff currently employed in such work to more value-added deployment (see Figure 7).

Data, data, and more data

As is nearly always the case in the development of state-of-the-art solutions, the development of robust analytics presents a big headache, but the accumulation of data of sufficient granularity and depth presents an even bigger one. This is particularly true in the case of, say, a sovereign wealth fund which possesses a plurality of different asset types but might not face any liabilities or dispersals for the next 20 or 30 years.

This fund is likely to possess fairly straightforward assets such as bonds and stocks, but it might also possess heterogeneous assets such as timber and land. This is even more likely to be the case if the fund is subject to environmental, social, and governance investment criteria, and this is increasingly the case.

Only the most sophisticated and powerful engines can handle the requirement to accumulate and assess enough data and the right type of data to underpin a single-view, automated, dynamic liquidity risk platform. Such an engine needs to be able to gather data from a variety of different sources. It is this that makes automation possible, and can produce a solution that can then be calibrated and indexed according to the internal priorities of the institution in question.

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the right technology and data provider. But, by doing so, liquidity risk management is placed on a par with credit and market risk management – where it deserves to be. It shouldn't be left to rudimentary methodologies and chance anymore. Covid-19 has reshaped many of our previously firmly held beliefs about life and the workplace; it might also be the case that it has justly refocused attention upon the pressing need to tackle liquidity risk management.