



Liquidity risk – an integrated approach is the only realistic solution

For many years, financial institutions have been using the Murex enterprise risk platform for market, credit and liquidity risk management. Today, and in view of the recent market volatility, those users are appreciating the advantages of a multi-asset trading platform with a fully integrated risk function that is flexible and open enough to integrate and analyse information from all areas of the institution

It seems that 'liquidity risk' is the prevalent term on everyone's lips these days. The recent market instabilities have highlighted the shortage of consistent guidance and supervision concerning the management of this risk classification, and now the industry is readying itself for a wave of increased regulation. All of the main bodies, including the UK Financial Services Authority, US Federal Reserve, the Council of Europe Development Bank and the Basel Committee, are putting forward their recommendations for addressing these shortfalls in liquidity governance. They have already identified major business areas that can greatly impact on the funding profile of a financial institution and that require close integration into any liquidity solution.

For example, under proposed regulatory guidance, the banks will need to address such questions as:

- What effective maturities should be applied to different classes of assets and liabilities in my flow profiles?
- How might country/sector economic factors impact on projected funding?
- If our major counterparties default concurrently, do we still have a sufficient liquidity buffer?
- What if securities pledged as collateral lose value and lead to margin calls against us?
- What if collateral liquidation periods are extended due to high concentrations in our portfolio or lower appetite for the securities in the market?
- What if our projected deposit base run-off rates are increased due to a reputation hit or possible ratings downgrade to our organisation?
- What if committed loan facility draw-down rates suddenly increase?
- What is the potential impact of other contingent contracts such as guarantees in tandem with all of the above?

Banks are currently busy reassessing the adequacy of their processes, human resources and systems, and 'backtesting' against recent historical events to analyse the gaps in each area, while tracking closely the market comments and suggestions in response to the consultative documents issued by the regulators.

The current situation has also drawn attention to the scarcity of vendors on the market providing functional, practicable and integrated solutions to what can be a complex issue – or, more accurately, an interrelated set of issues.

The value of a single risk platform

In order to centralise the information required to assess and address their liquidity risks, banks will need to take practical decisions to avoid the overhead of building many time-consuming and costly system interfaces to support the process. Pragmatism will be vital, especially given the time-frame constraints being advocated by some of the regulators.

The establishment of an infrastructure that allows for the timely consolidation of data (static, transactional, valuation, flow, balance, simulation, etc.) from all areas of the business is paramount to any solution for risk assessment. Of course, the prior deployment of a cross-asset, front-to-back office trading and risk solution such as Murex is a major advantage in attaining such a goal. Having the majority of the trading book priced, valued, processed, risk-assessed and limit-controlled in a single system streamlines operations, greatly reduces operational errors and decreases the number, complexity and cost of systems interfacing, in addition to the reconciliation processes that such interfaces demand.

As institutions revisit their liquidity risk management solutions, they often recognise that establishing a robust infrastructure comes as the first and most important step in the process – and the Murex customer base already had such a platform in place. The synergies that many of them found with previously delivered solutions, such as those addressing collateral management and Basel II compliance, let them deploy a highly cost-effective funding and asset liquidity risk framework for their capital markets feeds in record implementation times. Such installations are very naturally extended to allow for the intraday consolidation of balance and flow information across the entire organisation as the relevant measures of current, future and potential liquidity exposures are built on coherent assumptions and analytics across product types with consistent controls, forecasting and hedging tools.

Which measures to use?

Traditional measures of liquidity such as 'snapshot' maturity ladders – with the ability to break down by trade types, user groups or countries – although providing valuable information, do not support a prudent and forward-looking decision-making culture. The models must be capable of incorporating assumptions of how assets and liabilities will likely behave in the future under different scenarios, including 'business as usual', a variety of stressed situations and horizon shift simulation. Models must also handle optionality according to desired moneyiness (and exclude low delta cashflows cross assets, for instance).

The identification of stress tests that are most beneficial to the organisation is a difficult task and there is likely to be much variance across the industry in terms of what each organisation (and even entities within the same group) view as prudent liquidity stresses. Some will favour analytical methods where the underlying assumptions are clearly defined and realistic; others will place more emphasis on probabilistic or simulation-based approaches that might require deeper analysis of how the calculated results relate to the underlying scenarios. Perhaps the majority (once the regulatory environment is fully established) will use a combination of such methods. Therefore, any prospective liquidity risk framework should be capable of starting with some simple measurements of liquidity risk, but within an infrastructure that allows for growth in terms of both volumes (entities, systems, products, flows) and complexity (numbers of stress tests, complexity of analytical assumptions and addition of simulation tools).

The requirements highlighted by the regulators re-emphasise the importance of a fully integrated solution: one in which the scenarios applied to factors such as market data, counterparty default and collateral haircut adjustments are automatically available to the liquidity risk engine without recourse to data duplication.

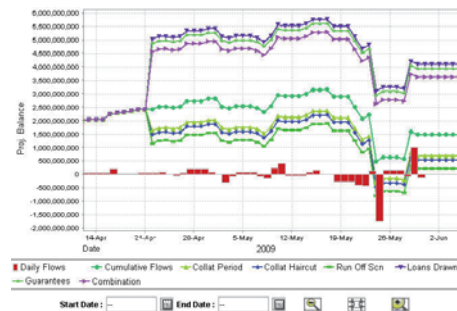
For example, scenarios should be consistent across both the collateral and liquidity solutions and there should be no reason to duplicate margin calculations in both, or to relay the scenarios to be used from one to another, possibly leading to excessive and/or complex interfacing.

A liquidity risk solution should be comprehensive and flexible

Stress scenarios (including the business-as-usual situation) need to feature many assumptions including deposit-base variations, the liquidity value of assets, periodicity factors and contractual obligations. Perhaps most importantly, any assumptions built into these scenarios must be clearly understood within the organisation and must be open to amendments when internal and/or external factors dictate. The technological implementation of the liquidity management processes must be rule-based and easily modified as these processes are amended. This includes the data model, which should be both comprehensive for a first-phase implementation but also flexible and extensible to support future requirements. There can be no black-box solution where the underlying assumptions are unknown, inflexible, slow to change with the current requirements of the bank or simply not applicable (see figure 1).

The openness of the system should give rise to the possibility of data consolidation across all assets, liabilities and off-balance-sheet items, and from both the banking and trading books. System flexibility must support the aggregation of liquidity profiles by currency (including conversion of results into a reporting currency), business unit/entity, counterparty, product, time bucket, date profile and any other criteria required by the organisation.

1 Maturity ladders – 'business as usual' and stress scenarios



Reserves and limits management

One often overlooked area of functionality that can be hugely beneficial to the organisation is the ability to override data captured automatically from external systems and to manually add, amend, remove or filter individual or groups of data from a flow profile. Examples include the adjustment of a central bank cash reserve intraday or the exclusion of an individual counterparty's expected flow data. Similarly, what-if simulation for new trades against funding limits should be made available from the interfaced front-office systems.

The regulatory requirements also emphasise the overlap between market liquidity risk and funding profiles. Measures of concentration, diversification and key ratios can act as early warning indicators to possible future funding problems and should be seamlessly integrated with the funding profiles to provide triggers and limit alerts.

A solution where the interdependencies between market risks, credit risks, margin requirements, market liquidity and funding liquidity are managed within a comprehensive and flexible limit, compliance, alerts and reporting framework is compelling. Such are the advantages that many Murex customers are today realising.

About Murex

Every day, thousands of users in banks, asset managers, corporations and utilities rely on Murex people and Murex solutions to support their capital markets activities across asset classes. For years now, Murex has consistently been recognised as a solid leader in software development for trading, risk management and processing.

Our motto "*Pioneering Again*" sums it all up: for nearly two decades, Murex has reinvented itself time and again to escort capital markets revolutions – each time offering innovative software solutions to the industry.

MXpress, Murex's implementation methodology, leverages the wealth of business content accumulated, through a combination of pre-packaging of best practices and client-tailored approach, enabling an accelerated process of delivery.

At the heart of the MX.3 platform, Murex's latest solution, a set of cutting-edge components provides an enterprise-wide risk management framework for market risk, credit risk, liquidity risk, trading risk, limits, compliance and collateral management.

"Constant innovation in trading, risk management and processing solutions"

For additional information on all Murex trading and enterprise risk management services, please contact: info@murex.com



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