LIQUIDITY OPTIMIZATION

BUILDING A LIQUIDITY RISK FRAMEWORK FOR COMPETITIVE ADVANTAGE

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Background

Basel III, the Third Basel Accord, was introduced as a framework of governance for banks globally; initially the process was mandated regulatory coverage of Bank Capital Adequacy Stress Testing and Market Liquidity Risk. The framework was the result and an attempted response to the financial crisis of 2007-09, which highlighted the need to address deficiencies in the regulation of financial institutions. The aim was to strengthen a bank's capital requirements by increasing Bank Liquidity and decreasing the leverage within a Bank's balance sheet.

The policy introduction also set about changing the approach undertaken by banks in the "manage and monitor" aspect with regards to the liquidity within the balance sheet. But banks have come to realize that monitoring and managing liquidity through various metrics would only lead them into attaining regulatory objectives.

Basel III committee and the authorities who have adopted the regulations around the world, no longer want siloes within the organization. The bank should be aware of the all facets of the cash flow cycles through the bank, and the management of the limits and buffets for the coverage of the Net Stable Funding and Liquidity Coverage Ratios must be visible on a real time basis with planning forecasting and continuous stress testing to achieve the comfort internally within the Bank that policies are being adhered to and the capability to confirm adherence via a reporting framework delivered to the Central Bank or Authority policing the financial institution.

Liquidity Risk Management Framework

Therefore a Bank needs to initiate and enforce a Quantitative Risk Management Framework (QRMF), this is the key requirement within the adopter Bank for the coverage of the Basel III. QRMF forces a Financial Institution to inculcate discipline in the management while focusing on monitoring & stress testing methodology and processes; the framework overviews the Banks regulatory and controls aspects, allowing for best practice coverage to be applied. The C Level management within a bank should also apply a criteria and a control process for the Contingency Funding Planning (CFP), constructing the right set of indicators for the bank to allow pre-warning of potential risk sensitivity within their balance sheet, the bank should be constantly;

- Defining the Risks
- Calculating Risk Tolerances
- Defining the Market Shock Scenarios
- Rebalancing the Investment Portfolio

QRMF is key to ensure Basel III compliance:

- It radically enhances stress testing capabilities
- It improves control over Contingency Fund Planning Activities
- It facilitates the creation of a Risk Data Universe
- It provides users with a complete real-time overview of the balance sheet by integrating bank-wide cash flows

A Key Tool for managing Liquidity Risk is the allocation of Early Warning Indicators, also known as Key Risk Indicators, which provide a holistic view of liquidity.

The ability to apply a reporting framework facility across the balance sheet does not supply the user with the complete control and reporting framework answer, if data quality is suspect. Therefore the prime course of action for a Bank adopting Basel III is to provide a complete on-boarding of the banks underlying data and information from the standing legacy systems, creating a data universe with complete mapping at the Product level across the itinerant system points. The key ethos in the build of the data universe is that there should not be a "Rubbish in Rubbish out" approach to the relationship cover across the solution build. Gone are the days of the Data Warehouse.

The key to Basel III in the midterm is getting to a position where Intra-day liquidity management is available; this means linkage to the real time source data of the bank so that clear decision making can be achieved. Building and mapping a behavior management framework across the Banks underlying product systems, applying a methodology and calculation processes to cleanse and enrich the source data so a bank can analyze and interrogate the data paths. This construction ultimately links all the cash flows across the bank, from funding, trading and payment/receipt mechanisms in effect giving the bank a complete overview of the balance sheet, on a real time basis.

If performed correctly this task does involve significant effort and comes at a cost but only banks which are looking at the bigger picture by applying this framework across their operating systems and balance sheet criteria are reaping the rewards of the knowledge that real time information gives them.The catch phrase in the market is "connecting the dots", this stresses the fundamental power that this data awareness gives to a bank, which is a case of knowledge equaling power, but if a financial institution has the correct tools they can manage the business more stringently and with better decision making processes.

Initiating a P&L Culture

Driving operating balances has become priority one for item for treasuries across banks. Managing HQLA portfolio that a bank holds to cover the liquidity requirements effectively while also monitoring its value to make sure the Mark to Market value (MTM) is still on par with the original value of the coverage is critical along with ability to obtain more HQLA to maintain the buffer thresholds.

The ability to get to the granular details within the balance sheet allows banks to gleam the operational performance of clients' funds. Visibility of such operational details permits banks to scale up & offer better services to their clients' needs in turn maximizing returns for the clients; building a focus on 'sticky' business. This stickiness enables HNI clients in achieving optimum returns within a fixed balance sheet ceiling.

Granularity on the balance sheet also allows bank achieve central treasury funding objectives, as the CFO and Treasurer have awareness of the funding cash flows on a timely basis and can also forecast and trend sensitivity in the book to allow for more detailed planning within the balance sheet coverage.

Tools that allow a bank to see the sensitivity in the cash management, the gaps across non-receipt and non-funding are paramount for moving towards a P&L culture where revenues increase and the cost of funding tumbles. Banks are now moving towards a culture where seeking market funds is seen as last resort; and if they have to then the cost of funding should be kept to the most economical process for performing the task

Once a bank has obtained complete picture of the balance sheet, the Bank team (CFO, CRO and the Treasurer), now has access to the treasury market where other sources of investment or hedging cover can be found; the use of derivatives to act as insurance or boosters on the back of the position management, where for a fee (which is potentially a fraction of the face value), the bank can create a stop loss or payout structure without having to physically bring the cash onto the banks books or tie the bank into a long term transaction.

Systems play a crucial role in giving access to information. The capability to obtain real time sensitivity analysis, cash & liquidity positions , highlight the issues within the cash flow and pin point the exact item (transaction, tool or portfolio) causing the issues is really a major “competitive advantage”. This allows the C level management within a bank to enforce pro-active process where there are no surprises and the team has time for decision coverage. Meanwhile access to granular data allows banks to manage portfolios constantly, monitor trends and forecast future impacts. Banks become pro-active and the application of stress scenarios and what-if tests becomes more real time and visually apparent to the user.

All of these advances, in the management process and more importantly in the access to data, have been driving an evolution in the banking world. The introduction of Basel III, though initially viewed as a policing mechanism, has now been extended by farsighted CFO’s and treasurers into a tool for enhancing P&L.

P&L is becoming a culture and not just a measure, with more and more Risk Management tools becoming profit management tools. Instances of these are seen within banks, where the tools for management of LCR and NSFR and the stress management within the LCR function has physically become a Front Office Tool; with the trading team utilizing the Heat mapping capabilities to highlight areas of performance within the balance sheet. The capabilities of these systems allow a banks access to the Interest rate allocations, the spreads the margins, the cost of funding at the detailed level, cash pooling becomes visible and with historical analysis capabilities the trending impact on the flows in and out of the bank can be assessed with more reliability. Future shocks can also be applied to the portfolios on a proactive basis, for example in expectation of the Fed rate moving in the future, multiple basis point shifts can be applied to a banks US Dollar book and the final P&L heat map witnessed. Teams at the bank can then assess where money will be gained and lost depending on the severances of the shift. This allows the bank to come up with a strategy plan for management of the movements; recommended strategy packages of trades can be formulated for the eventuality happening either to hedge, square the position to mitigate risk or run the position or profit take to recognize the profit.

Advantages of having granularity on the balance sheet:

- Provides the ability to monitor the performance of clients’ funds
- Improves awareness of the funding cash flows across the enterprise
- Decision makers can make superior hedging decisions
- Enhances the effectiveness of Stress Testing and What-If scenario frameworks
- Better assess the impact of Future Shocks on portfolios and develop superior risk mitigation strategies

Optimization

Bank should constantly monitor limits utilized verses the limits allocated to the clients. Gone are those days when traders or business units could request limits and then sit on them without utilizing it. With the introduction of Basel III, 20% liquidity buffer that the bank needs to hold as HQLA (High Quality Liquid Assets) implies that the bank has only 80% of the balance sheet to utilize for trading and investment purposes. Thus decisions on use of remaining capital have to be extremely wise.

There are relatively few LRM tools which give access to the details empowering the Fund Manager and Treasurer, where spread dispersement across the balance sheet is visible. Such tools enable users to see P&L against limits, performance of business units, traders, trading books, divisions, branches and products. These details can help banks unlock the data value within the balance sheet & "Connect the Dots". Quite simply the Bank can view where the returns are, the money from the P&L that is being made, the inherent cost of generating that return and where the funding source was attained from, but more importantly it gives the C Level Management of the bank the required ammunition in the decision making process.

A couple of examples of how this can be physically applied; a bank may have a highly ranked top 100 corporate, who has multiple lines with the bank, on the books with multiple limits across divisions but minimal profit. On other side there is a small corporate with insufficient lines, but perennially fully utilized and the profit too is substantial. Visibility of these scenarios to the treasurer and the fund manager are fundamental in the decision of where to allocate the limit i.e. is it better used with the "big Fish" or the Minnow. CFO would need to see the source and cost of funding, the treasurer and CRO need to be aware of the credit worthiness of the smaller corporate; high risk is usually associated with high return, however few liquidity systems can provide the details to be able to assist in the decision making mechanism and the associated universe of information can be utilized to make more measured judgment.

The second example is one of taking products to market. If a bank can open up the detail in the balance sheet at a granular level, then they can interrogate that data; a LRM solution not only shows performance at the P&L and spread level it can show volumes, numbers and fees. The information can be used to monitor and manage performance of the bank staff attributes within the balance sheet i.e. a new product is introduced to the market, what is its performance, which branches, divisions and business units are selling the product to customers.Customer feedback is the most critical part of the learning curve in order to educate other teams or simply use the information to motivate branches where sales aren't great.

A simple example, but at the high level, banks can run simulations across the balance sheet to see the inherent risk within the book; running assessments of the sensitivity of Fixed rate instruments against the forecast floating rates is always imperative to maintain the health of the bank. Also greater details allows for better servicing of the customer base, better servicing of the client needs fights against attribution of clients from the bank which on average runs at 3 percent per year.

The bank is also looking for an increased wallet share through becoming principal bank and through new client acquisition. New Systems drive costs down as the higher percentage of process is automated. A modern system also allows a bank to adhere to regulatory changes more adeptly and cost effectively as framework allows for more timely adaptation of the requirements and application of the policies on an automated basis, and of course with stringent controls and audit management decrease any fraudulent activity both internally and externally.

The examples described above are only the "tip of a data iceberg", and basic examples, once a bank has access to the information granularity, the team within the bank can begin "to connect the dots" driving management of the Bank's operating balances, achieving visibility on the Funding objectives and unlocking the P&L opportunities across the bank books.

Robust LRM tools should:

- Monitor limits accurately enabling improved capital allocation decisions
- Enable firms to 'connect the dots' and unlock value within the balance sheet
- Enable firms to adhere and adapt to regulatory changes in a cost-effective manner
- Reduce fraudulent activity and assist in unlocking P&L opportunities across the banking book

Connecting the Dots

Lastly the tools within a Liquidity Risk Management Framework allow for extensive volumes of data to be managed. This allows for the cash flows within a bank to be amalgamated within one overseeing facility for comprehensive Balance Sheet Liquidity management; all cash flow and the associated information can be shown in one instance. Nostros Vostros, Internal Accounts, SWIFT Messages, Trades Transactions, Forecasting items can be amalgamated within one control mechanism allowing overview of the non-receipts, non-funding, the gaps, mis-matches, interest rate sensitivity all in one place.

Intellect OneLRM provides the tools to analyses and pro-actively manage these cash flows, users are visibly aware of the issue or sensitivity within the balance sheet on a real time pro-active basis and are able to manage the decision making process to fix the issue.This can either be performed through age old evaluation process by the treasury or Intellect Funding Desk module to automate the management process.

Our Funding desk module sits over the cash portfolios of the bank reconciliation & constantly assesses the payments and receipts. It makes the users aware of issues, highlighting at the instrument level the cause of the projected issue.. The solution then goes further to assist the user in the management of the issue and is why the module has acquired the moniker of “Funding Brain”. For the brain takes the issue and sensitivity and comes up with a recommended solution for fixing. Funding Brain initially searches across the internal portfolios of the bank for sources of funding that could be used to cover potential shortfall, once it exhausts all the options as an optional coverage the “Brain” will searches the market for sources of funding and give a list of the most economical instruments to utilize to physically cover the gap. Last but not least Funding Brain gives recommendations of how a position can be hedged utilizing derivative instruments like swaps, options, or futures-giving the most optimal instrument. This allows the CRO or treasurer again to facilitate a recommended hedge/investment strategy to the trading team so pro-actively managing the portfolio issues.

Robotic Trading, that allows banks to utilize automated processes for managing the close out levels, is seeing the rise in the need to not only process cash in real time but also extend the operations within the front office to stress test the banks positions and portfolios on an intra-day basis. This ultimately provides arsenal to the management team in the strategic planning for the bank. Vision is to never allow bank to suffer going to the market for last resort coverage of the gaps in the cash flows and suffer the high cost of funding.

A powerful Liquidity Risk Management Solution should:

- Highlight issues / sensitivities within a balance sheet on a pro-active basis
- Provide the capability to identify the most optimal sources of funding
- Give recommendations on hedging strategies
- Enable banks to stress-test their positions and portfolios on an intra-day basis

Intellect OneLRM Solution

Intellect OneLRM solution allows for the dynamic liquidity Analytics and decision making to be performed, giving modules which allow banks to pro-actively manage the P&L returns and heat map the balance sheet coverage. The solution also allows users to stress test and forecast market volatility factors upon the Balance sheet and come up with a strategy plan for the future thus helping to improve operational efficiency with straight-through trading. MM Trading module offers the ability to interface across front, middle and back office and supports multiple products. Algorithmic Global Cash Pooling (GCP) offers real-time global visibility of cash positions. The solution offers robust facilities for Curve Management, from setting up standard curves to "Multi-Revals" for revaluations using different yield curves management. With Auto-Squaring, one can pre-define rules and automatically execute offsetting trades and close-out positions.

The sizing of liquidity buffers for unexpected "Black Swan" events or aligning the portfolios within the bank with spikes in growth can be a challenge; Historic cash-flow volatility analysis together with future, the Intellect tools can be valuable enablers in this process for cash-flow modeling as well as serve as early-warning tools for forecasting cash surpluses and deficits. The solution helps Banks cover the requirements for Intra-day liquidity monitoring, which calls for transaction by transaction, near real time risk monitoring. Variance in value or price fluctuations of assets can be captured via various metrics and methodologies including MTM, DV01, Accrual and Economic Value.

The key benefits delivered by the Intellect OneLRM solution are:

- Capability to view risk exposures and P&L in real-time,
- Enables just-in-time funding so thereby reducing the cost on avoidable borrowings
- Analyze past catastrophic events and better prepare for any future "Black Swan" events

Buy or Build Dilemma

One of the final junctures where most banks dither in taking a quick decision is whether to purchase such tools with minimal inputs in the design or build one where the efforts in terms of manpower could be substantial. Due to complexities in actually solutioning, designing, building & finally testing the tool, many banks drop the plans to build outright. Some banks with robust IT teams try to build tools too. Very few actually succeed in reaching testing phase. A very high percentage of the banks ultimately decide to go in for the purchase option, where there is higher degree of sophistication. But even here banks face a dilemma; whom to choose as the partner. There are very few reliable providers of such regulatory cum growth tools spanning front, mid and back office functions.

Most banks intend to choose one of the numerous market vendors for accomplishing their regulatory cum growth needs. However, most of these vendors fall short because when it comes to addressing these specific needs from banks they have tools spanning only few of the activities. Additionally some of those do not integrate well with other systems in bank. What banks, which are on the cusp of this regulatory cum growth strategy or are searching for the "competitive advantage", need are effective partners who can provide tools that integrate well without significant costs and are extremely loosely coupled. Such tools providers can prove effective partners in the long run.

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