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LIQUIDITY MANAGEMENT UNDER BASEL III & KEY CHALLENGES FACED IN THE IMPLEMENTATION OF BASEL III

INTRODUCTION

The financial meltdown of 2008-2009 forced the Basel Committee on Banking Supervision to review the then existing capital adequacy guidelines and replaced them with a new framework called “Basel III”. The basic idea behind this adoption was to effectively implement a capital adequacy framework infinancial institutions. With Basel III being adopted as a core framework by the National Authorities, it’s only a matter of time (the deadline is 2019)before banks will inevitably need to implement Basel III for compliance. So the focus now has shifted towards the effective implementation procedure of Basel III.

SUMMARY

Basel III is a comprehensive set of reform measures developed by the Basel Committee on Banking Supervision (BCBS) to strengthen the regulation, supervision, and risk management of the banking sector. The measure includes both liquidity and capital reforms.

BASEL I focused on credit risk and risk –weighted assets.

BASEL II, which was modified in the year 2006, focuses on the following:

- Make capital allocation more risk sensitive
- Quantify credit and market risk; introduce operational risk quantified by formal techniques
- Alignment of economic and regulatory capital to reduce regulatory arbitrage

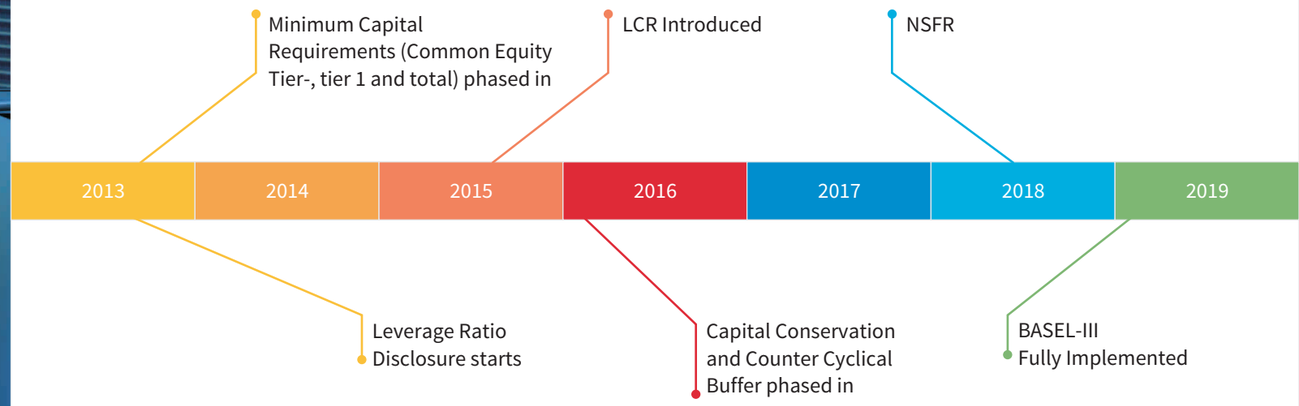
BASEL III, which was introduced in January 2013, focuses on the following:

- Higher quality capital
- Establish capital conservation buffer
- Establish a counterparty capital buffer
- Leverage ratio
- Introduce liquidity risk requirement – both long and short run

This whitepaper aims to put across our point of view on the Liquidity management changes that are required. We will be discussing the following two topics in this white paper:

- Key challenges faced in implementing the Liquidity Elements of BASEL III
- A proposed framework for delivering compliances with BASEL III

Timeline of BASEL III



Source:http://annualreport2012.standardbank.com/financial-information/risk-and-capital-management-summary

According to BASEL III, under BCBS 238 defines the two standards:

- LCR (Liquidity Coverage Ratio) and
- NSFR (Net Stable Funding Ratio)

And few monitoring tools such as:

- Concentration of funding
- Contractual maturity mismatch
- Available unencumbered assets
- LCR by significant currency
- Marketrelated monitoring tools

KEY CHALLENGES FACED IN IMPLEMENTING THE LIQUIDITY ELEMENTS UNDER BASEL III

Business Issues

Changing business operating model

BASEL III guidelines focus more on stress test on a regular basis, senior management involvement and the need for an alternate scenario, monthly testing and daily calculation for government securities for important banks. The current infrastructure requires credit and market data feeding and reporting as a part of the LCR and NSFR calculation. Daily computations of regulatory credit risk and RWA's required need data platforms, ALM systems, credit risk systems, liquidity risk systems integration. This will require business policy changes, data model changes, governance model changes and business operating model changes.

Changing scenarios and behavior model

BASEL III guidelines prescribe the following scenarios:

- Downgrade of the institution's public credit rating
- Partial loss of deposits
- Loss of unsecured wholesale funding
- Significant increase in secured funding haircuts
- And collateral haircuts

The scenarios also take into account how your assets and liabilities get impacted by the changes in your cash inflows and outflows. How your liquid assets should be eligible and what are the haircuts that you will be applying to those assets. Hence financial institutions will have to come up with the behavioral model assumptions that are relevant to the institutions and how they will be getting impacted by different assets and liabilities depending on the scenarios. Similarly, the impact on the haircuts that will be applied on liquid assets are up to the financial institutions and how they will model those haircuts. A lot of modeling exercises will take place in complying with these regulations. Depending on the scenarios you have to quantify what are your impacts on assets and liabilities. For example, you have to calculate your maturing assets such as loans and deposits and their impact on interest rate changes, and how it will push your customers to repay loans.

Managing the cash flows for the LCR calculation

The important question here is: How will the cash flows be calculated?

Should we leverage the existing system cash flows; or import the cash flows; or generate the cash flows internally. For the calculation of LCR we need daily cash flows and we should determine on what day of the month there will be the largest cumulative cash outflow. Granularity of data will be the most challenging for the financial institution to deal with -should banks import the cash flow or generate the cash flow from internal systems depending on the type of granularity of existing data, is worth considering.

The next big business challenge is addressing the multiple challenges likely to arise when the cash flows are generated in multiple source systems. How do we get contractual cash flows for LCR calculation and behavioral cash flows for internal stress testing? Do we have to calculate them, import them or have a mixed approach? Behavioral cash flows refer to an internal scenario of the banks such as downgrade of credit rating, a partial loss of deposits, a loss of unsecured wholesale funding etc.

Managing operational data with actual balances

Running the LCR calculation at each level of the organization is a complex process. The calculation needs to be done for currency, business line and deposits; granularity in the calculation as well as managing the operational data such as loans and deposits calculated at the aggregate monthly level and then comparing with actual balances will be a business challenge.

Frequent reporting and liquidity supervisory reporting

Reporting to different users and reporting to regulators daily and monthly under the stress scenario; and sourcing data from different source systems and monitoring the liquidity reports supervised by the senior management will be a business challenge.

- Applying FDIC insurance to calculate optimal inflow and outflow rates means you have to segregate your individual customers, their joint accounts, their single accounts, and their trust accounts. As FDIC insurance is applied separately for these accounts and as there is a need to know the beneficiaries and insurance amount, granular data is required for calculation. The liquidity risk system currently runs on the aggregated data of the customer pool. Running customer information on different time horizons – both overnight and monthly under a stress scenario will become a major business challenge.

PROPOSED FUNCTIONAL LANDSCAPE

Data Acquirement & Management	Liquidity Risk Management	Stress Testing	Limit Management Settings	Book-Keeping Hedging and RECO	ALM	Capital Management	Funding Matrix / Models	Debit Assurance	Transfer Pricing	Reporting & Analysis
Data Tracking	Local Effective Cash Management	Model & Data Conception	Limit Definition	Risk Checking	ALM Models	Capital requirement definition	Model / Vector definition	Funding plan calculation & review	TP Policy / definite on principles	Internal reporting
Data Research	Global Structure	Regulatory Stress Testing	Broach Identification	Prospect generation	SLR Infra day Management	Market Situation Study	Vector Calculation	Asset & Liability Pricing	Cost Usage analysis	Central reporting from regulatory
Data authentication & Sign off	Liquidity Outline	Once a month stress testing	Excess Approval	Hedging / Equlvalent	SLR Reporting	Capital Model Creation & Monitoring	Vector Compilation	Execution Booking	Charging Model	Regulatory reporting
Data Exhibiting		Everyday Stress Testing		Hedge Effectiveness testing	Asset Management	Achieve Hedging Strategies	Scenario analysis	Market & poor Analysis	Differential proposal	Liquidity analysis
		Scenario Analysis		Hedge Accounting				Daily / Monthly P&L review / Sign off	Daily / Infra Day	
		Price Deviation Trending		RECO Analysis & Control				Limit Calculation		
								LRD Calculation		
								Own bond Inventory		
								Inventory Management		

Data Acquisition and Interfacing

There will be a lot of granular data and frequent data. You have to look at all the assets, all the liabilities, off-balance items, derivatives, and credit and market data coming from multiple source systems. The system should be able to handle large volumes of data on a frequent basis and reporting as a part of the LCR and NSFR calculation. The other challenges include data frequency, data granularity and daily calculation of LCR and NSFR.

Data Quality Management

When sourcing data from multiple source systems, managing the data quality will be a big challenge. How your liquidity system will manage the data quality is an important challenge. The other challenges will be data cleansing, data reconciling, data aggregation and audit trails.

Calculating the LCR and NSFR

When we have data in order, the other big challenge is calculation of LCR and NSFR. You need to calculate your liquidity buffer, the eligibility level of high quality liquid assets with and without unwinding of your positions during the 30 day time period. Banks have to make sure that they calculate haircuts according to the prescribed rate specified by the regulators. You can also calculate it by your own internal models and assumptions and consolidate the information at every level of the organization.

Cash flows management

The main challenge here is to do with whether the cash flows are imported or generated. How to manage cash flows with multiple scenarios and how to handle data lineage; where the data has come from and how it has transformed to fit into regulatory classification.

Compliance Automation

Once we have all the data and data calculation fields, the next big challenge is to automate the compliance reports and send them to the regulators and business users on a regular basis.

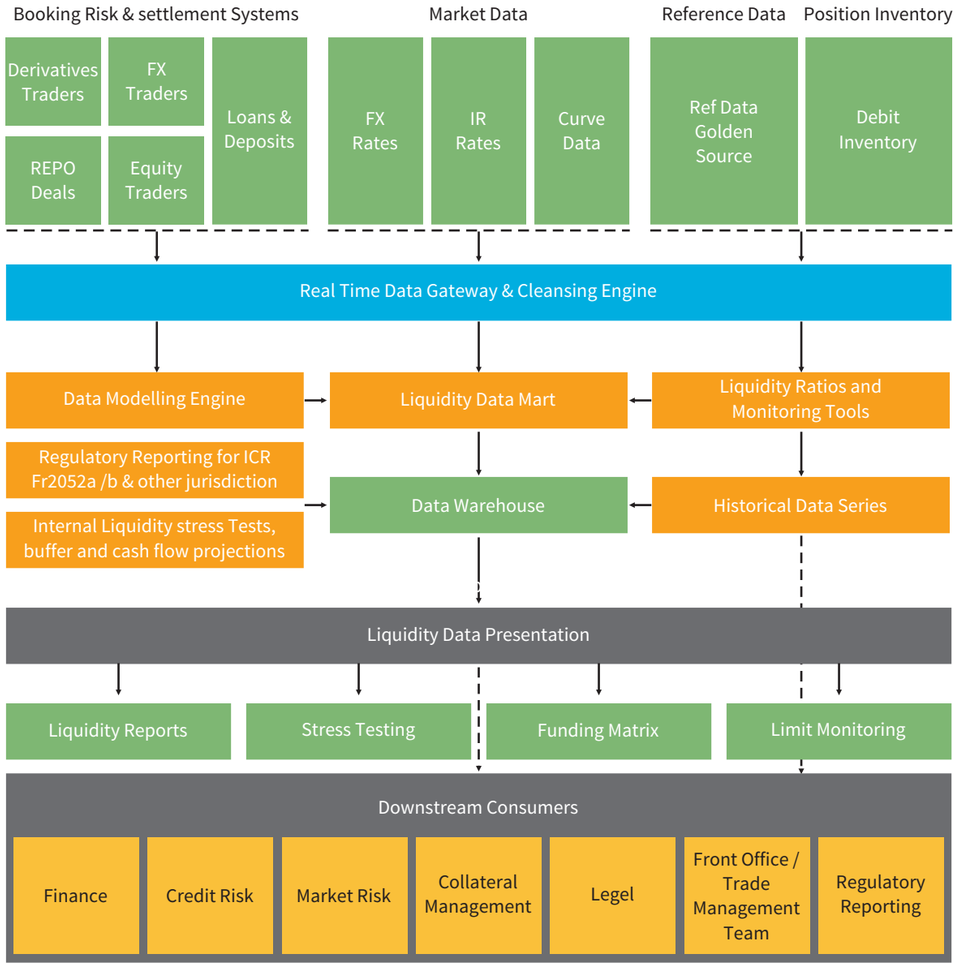
Reporting

Once we have all the calculations in place, the next challenge is to report all this information to different business users and analyze whether reporting peaks are exacerbated with more reports due at the same time. Another challenge is how to reconcile reports with reports from other systems.

Other operational challenges include challenges pertaining to data volumes, risk data aggregation issues/requirements and supervisory disclosure reconciliation with management information.

PROPOSED LIQUIDITY RISK MANAGEMENT FUNCTIONAL ARCHITECTURE FRAMEWORK

The above mentioned areas, if integrated and automated, lead to a unified LCR and NSFR platform. This could be called as a future ready LCR and NSFR solution. The functional architecture of the future ready LCR and NSFR is depicted below.



- Data gets imported real time from multiple source systems like market data, reference data and booking risk data through real-time gateway and cleansing engines. The following data will be input: customer information, risk drivers, assets, liabilities, off balance sheet exposure, repos, derivatives, general ledger.
- Data quality is managed through Cleanse, Consolidate, Reconcile, Data quality checks, Data Patching, and Aggregation of data. Data then moves into the Liquidity Data Mart, Data Modeling engine and Liquidity ratios and Modeling tools.
- Data modeling engine will perform scenarios and modeling on cash outflows for example, what will be the impact on LCR if there is a large cash outflow before 30 days.
- Inputs from Data Modeling and Liquidity Monitoring tools will be exported to Liquidity Data Mart.
- Data will be passed to the data warehouse where the actual calculation of LCR and NSFR and regulatory reporting will be performed.
- Data warehouse will perform calculation of HQLA eligibility levels, outflow rates, inflow rates, LCR, NSFR and forecast LCR.
- Data warehouse will store all the historical data series that will be used for cash outflows and LCR analysis and send the reports to regulators and users in multiple formats such as XML, Excel and internal reports.
- From the data warehouse data will be exported to liquidity data presentation where different reports will be sent to regulators and to downstream consumers of this data.

CONCLUSION

Though LCR and NSFR have challenges to handle, they open up gates of opportunities for financial firms, if dealt with efficiently. 'Change' is inevitable in this challenging environment and this needs to be addressed strategically rather than looking out for tactical short-term solutions. Intelligent technology that provides an 'enterprise view' across asset classes and business lines capable of handling LCR and NSFR calculation and managing the liquidity will be a key enabler. Such technology should also be based on sound architecture that can handle future changes.

This will also ensure that the LCR and NSFR defining the high quality liquid assets and categorizing these assets into Level 1 and Level 2A,2B assets and applying the haircuts as per the Basel III requirement as well as defining the internal haircuts for the asset classes; calculating the liquidity under the stress tests and cash flow projections for different time horizons such as overnight, 30 days, 90 days, 1 year and others for the financial institutions. Defining the frequency and quality of high quality liquid assets will be a major business challenge for financial institutions.

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