

# A global guide to Basel III liquidity requirements

## How to achieve compliance and secure business benefits

### An AxiomSL white paper

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## Introduction

Liquidity risk management and regulation are at the forefront of challenges facing the global financial industry today, as regulators have responded to systemic liquidity risk by introducing formal liquidity metrics into the reporting framework. Increased scrutiny by the authorities combined with the changing nature of funding markets has forced banks to rethink their approach to liquidity risk management and re-prioritize capital management.

The Basel III regulations that followed the financial crisis require banks to maintain a minimum amount of unencumbered high-quality liquid assets (HQLAs), at least equal to estimated net cash outflows over a 30-day standardized liquidity stress scenario. In addition to calculating and reporting this short-term Liquidity Coverage Ratio (LCR), banks must also report their long-term Net Stability Funding Ratio (NSFR) - a measure of available stable funding in relation to required stable funding.

The requirements of Basel III globally present financial institutions with substantial challenges ranging from simply keeping up with and interpreting the emerging regulations, to gathering and managing large volumes

of data to meet tighter deadlines. However, regulation is not a stand-alone issue. Banks also want to monitor liquidity for their own business ends, by identifying funding gaps, avoiding concentration risk and optimizing the deployment of their assets. Banks face strategic issues related to the new costs of liquidity on business profitability, and require risk analytics to go beyond simple compliance. These banks want the ability to aggregate and analyze liquidity not only for the new rounds of reporting, but also to identify the contributors and consumers of liquidity within their own organizations and client bases.

The systems that banks have traditionally used for liquidity management and reporting were not designed to meet these new demands. AxiomSL offers a common data and computation platform that can be integrated across the entire enterprise, enabling firms to leverage their existing data and risk management infrastructure to ensure comprehensive regulatory compliance while maximizing business benefits. This platform will support a global approach to liquidity risk management as well as address the specific requirements of individual jurisdictions.

*In these times of constantly changing regulations with ever increasing data analytical and reporting requirements, financial institutions need to adopt a more elaborate approach in taking a relook at the underlying infrastructure - there are relatively fewer risks than rewards of investing in a solution that reduces rework. A strategic and holistic approach supported by an integrated platform enables banks to not only meet their analytical and regulatory reporting obligations, but also manage their liquidity more effectively to gain competitive advantage.*

## New regulatory requirements bring more challenges

*The new liquidity risk rules are just one element of a tidal wave of regulations that is sweeping through financial firms. It is not only the amount of change that is a challenge; the speed of developments also presents difficulties as deadlines are set before the rules are fully agreed.*

To fulfil the new liquidity reporting requirements, banks need to gather, collate and process large amounts of data, some of which they will not have collected or used in calculations previously. This includes not only data on their transactions and price data, but also reference data, particularly for calculating the various levels of unencumbered assets.

Basel III sets out strict criteria about what qualifies as HQLAs across three levels, as well as the way the assets at each level and in aggregate must be treated. For

example, Level 1 assets, such as central bank reserves or sovereign securities, can be included without limit, while Level 2 assets can only comprise up to 40% of the pool, with Level 2B assets capped at 15%, and even then only after the application of various haircuts specified by asset type.

The asset data must be extracted from many disparate sources across multiple functions, including finance, risk, treasury and operations. **Linking these silos and interfacing with their disparate systems to extract the relevant information will present significant challenges for many banks.** In many cases, cash-flow engines do not generate cash flows for all products and banks will have manual spreadsheet workarounds, which are error prone and from which it is difficult to extract data.

## The EU perspective

In the European Union (EU), banks face significant challenges to migrate to new EU-specific versions of the LCR and NSFR. They must also adapt to dramatically-reduced reporting time frames, including daily reporting in some countries.

Banks in the EU have until now been using the BCBS specifications for the LCR and NSFR. However, these forms are now being replaced with new versions of the LCR and NSFR calculations and reports developed by the European Banking Authority (EBA) as part of the Capital Requirements Directive IV (CRD IV) - the EU's implementation of Basel III.

With these new versions of the LCR and NSFR, European banks must start filing a completely new report called Additional Liquidity Monitoring Metrics (ALMM). This has been designed to analyze the maturity of banks' positions and cash flows.

Under the new regime, banks must report a lot more information externally than ever before, and they have to ensure that what they are reporting externally is consistent with their internal reporting. **The Basel Committee on Banking Supervision's Principles for Effective Risk Data Aggregation and Risk Reporting, known as BCBS 239, aims to ensure that the information banks use to manage their business is the same as that reported to the regulator. This demands that the treasury department works more closely with the regulatory function, which may not be in the existing culture of the bank. Silos need to be broken and data must be looked at in an integrated fashion in order to uphold the prescribed principles of data management.**

**These three CRD IV liquidity reports - the LCR, NSFR and ALMM - require a range of granular data that is usually distributed across multiple systems. In the case of ALMM, this includes data about the concentration of funding by counterparty and the prices for various lengths of funding. The challenge for banks will not only be to aggregate all of this new disparate data, but also to do so within short reporting cycles.**

In January 2015, the remittance period for LCR reporting was cut from 30 to 15 days across the EU, marking a major change. However, CRD IV gives domestic regulators the option to go even further by requiring daily liquidity reporting. Germany's Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) has announced that it will exercise this option starting from October 2015, and the UK's Prudential Regulation Authority (PRA) has also confirmed plans to move to daily liquidity reporting, with other regulators expected to follow suit.

*These sharp reductions in reporting cycles raise questions about the performance of banks' regulatory platforms. It is common practice amongst banks to run LCR calculations multiple times by tweaking various parameters to get an initial look and feel and for running "health-checks" as to which parts of the bank are performing or less than profitable. This can be comfortably accommodated by most platforms when banks are reporting every 30 days. However, as deadlines become tighter, these recalculations will only be possible if banks use high-performance software.*

## The US tightens the screw

The US is considerably more restrictive in its eligibility criteria for HQLAs than the Basel III standard, and has toughened the formula for calculating the LCR. In addition, its reporting requirements are significantly more onerous than the Basel III standard.

In terms of eligible assets, the US puts limits on foreign currencies and excludes banknotes and coins from Level 1 HQLAs. The US also rejects residential and non-residential mortgage-backed securities (RBMSs and MBSs) from Level 2b HQLAs, and narrows the pool of eligible equities to Russell 1000 Index assets or foreign jurisdiction equivalents.

The US has made the denominator calculation for the LCR more complex by including a maturity mismatch component that captures outflow spikes. This in turn requires banks to identify the largest single-day maturity mismatch within the 30-day period by calculating the daily difference in cumulative outflows and inflows that have set maturity dates. US disclosure requirements include the Complex Institution Liquidity Monitoring Report (known as FR 2052a). This compels banks that exceed certain thresholds in terms of their assets or foreign exposures to complete 10 tables with granular detail of inflows and outflows, and in effect means assessing and reporting inflows and outflows with almost unlimited duration. Obtaining all the relevant information presents a significant challenge as traditional treasury systems typically do not generate

the required data. For example, FR 2052a requires banks that have open lines of credit to presume that these will be drawn upon. Similarly, if banks hold deposits they have to assume a proportion will be run off. Firms must also report the total cumulative market value of additional collateral they will be required to post to their counterparties in the event of various levels of credit rating downgrades. Traditional treasury systems do not generally assume outflows across all funding, nor generate the theoretical or synthetic flows they would entail.

In addition to handling these complex requirements, banks need to produce LCR and FR 2052a reports in adherence with the below schedule.

		Start Date				
		3/31/2015	7/1/2015	7/31/2015	1/31/2016	7/1/2016
US Charter	GSIBs (700B +)	Monthly	Daily	Daily	Daily	Daily
	Advanced Approach Banks (250B +)	NA	Monthly	Monthly	Monthly	Daily
	Others (50B +)	NA	NA	NA	Monthly	Monthly
FBOs	US Operations 50B + & BD 100B +	Monthly	Daily	Daily	Daily	Daily
	US Operations 50B	NA	NA	NA	Monthly	Monthly (*Daily)



## Asian variations

Asia has a number of characteristics that set it apart from the rest of the world and affect the impact of the liquidity requirements of Basel III. These range from diversity of demographics across jurisdictions to multilingualism and sensitivities around non-deliverable

currencies in emerging markets. Moreover, in the absence of a regional regulator - at least for the time being - national authorities are likely to follow phased implementations with opportunities for revisions based on industry consultation.

	Jun-14	Jan-15	Jun-15	Jan-16	Jan-17	Jan-18	Jan-19
<b>BIS [GLOBAL]</b>	0%	60%	70%	80%	90%	100%	
<b>BNM [MALAYSIA]</b>	0%	60%	70%	80%	90%	100%	
<b>FSC [KOREA]</b>	0%	80%	85%	90%	95%	100%	
<b>MAS* [SINGAPORE]</b>	0%	100%					
<b>APRA* [AUSTRALIA]</b>	0%	100%					
<b>RBI [INDIA]</b>	0%	60%	70%	80%	90%	100%	

\* definition differences exist

For reasons of culture or prudence, Asian jurisdictions have so far tended to adopt guidelines that are more conservative than the Basel III minimum. For example, the Financial Services Commission of Korea, having reviewed the average LCR of commercial banks over previous years, have mandated a minimum ratio of 80% starting 1 January 2015 itself with annual increments of 5% each year until 100% sufficiency from 2019. This is in contrast to the 60% criteria dictated by BIS for 2015 with an annual increment of 10% every year leading to a 100% requirement starting only from 2019. In contrast, Bank Negara Malaysia - the central Bank of Malaysia - have declared in light of differences in treatment of deposits and other Islamic banking considerations that the minimum LCR requirement of 60% will commence from 1 June 2015 thereafter following the BIS guidelines of gradual increment. The Australian Prudential Regulation Authority (APRA) have also taken a tough stance by mandating 100% LCR requirement from 1 January 2015 onwards.

Another turning point for Asian institutions is the allowance for adoption of Alternative Liquidity Arrangements (ALA) by Basel which enables jurisdictions with deficient sources of Level 1 High Quality Liquid Assets (HQLA) in their local currencies to meet the requisite demands of financial institutions. The ALA eventually adopted by various jurisdictions

thus may differ. Monetary Authority of Singapore (MAS) has decreed that it will not embrace ALA given a sufficiency of SGD denominated HQLA in the country. APRA on the other hand, have decided to adopt one of the three available ALA - a fee-based usage of contractual committed facility (CLF) with the Reserve Bank of Australia (RBA) available to authorized deposit-taking institutions (ADI) contingent to them demonstrating due diligence in meeting LCR requirements.

Asian jurisdictions have also exercised prudence in inclusion of level 2B assets to meet the sufficiency requirement of liquid assets to cover net cash outflows over a 30-day stress period. Basel enables national regulators to determine the allowance of 2B assets based on national outlook. The big fours of Asia - China, Hong Kong, Singapore and Australia - all have acted upon these guidelines released in Jan 2013 to be cautious in this category when including it in the local guidelines. While APRA have altogether eliminated 2B from LCR considerations, HKMA have proposed to admit A-rated corporate debt securities and minimum AA-rated residential mortgage based securities (RMBS). China Banking Regulatory Commission (CBRC) followed suit in announcing exclusion of RMBS and equities along with the exclusive allowance of BBB- corporate debt for institutions calculating their LCR. MAS mirrors the

guidance of CBRC with the exception that only A-rated or above corporate debt securities are permitted for

inclusion as Level 2B assets. The tailored guidelines are a better reflection of the market practices within Asia.

## The business challenge

The new rules specify how organizations must aggregate their liquidity, calculate regulatory ratios and compile reports. But banks also need to be able to aggregate liquidity according to their own structure and organization if they want to identify and measure the degree to which individual business units and activities might be contributing or consuming liquidity.

Once institutions have the ability to accurately aggregate and analyze liquidity by business line or client, they can undertake internal transfer pricing, rewarding contributors and applying costs to consumers. This will enable firm-wide strategic decision making thus benefitting clients, transactions and business lines.

## Limitations of traditional liquidity reporting

Prior to Basel III, banks could define their own risk profile and had greater freedom as to the assets they could include as sources of liquidity. Their asset and liability management (ALM), treasury, risk management and reporting systems were tailored to their own risk profile and their assumptions about assets that would support their liquidity. Where once a bank may have counted MBSs as a good source of liquidity that in a worst-case scenario it might have to haircut by 30% or so to sell, it can no longer do so under the new regime. Now, banks must comply with homogenous liquidity risk management guidelines based on more unifying definitions of permissible assets and rules.

**The challenging requirements of Basel III and its local implementations call into question whether existing systems can adapt to the additional data requirements, new calculations, more exacting asset eligibility criteria and more demanding reporting responsibilities of the new regime.** Banks that took a strategic approach to creating their liquidity management infrastructure - viewing then current requirements as simply a first stop on a continuing journey and building flexibility into their systems from the ground up - will be better placed to handle the changes and meet the new challenges.

## How to combat implementation challenges

To combat issues with liquidity risk management and regulation across the world, it is essential for banks to implement a flexible and strategic liquidity risk management platform. However, there are a number of issues that banks will need to address during implementation. Considering the challenges, it is imperative for banks to:

1. Establish an understanding of what exactly the new regulations mean for the organization. How do they impact the bank's operating model and strategic business plan? What parts of the organization will be directly affected - treasury, risk management, compliance, IT?

What are the processes for achieving compliance and who will have responsibility and sign off?

2. Involve those in the business who will actually do the work, including gathering data, formulating calculations and compiling reports. Banks need to know what the new rules are and what they mean, so they can understand the purpose of the processes and the context of the numbers they are producing.

3. Have a clear data sourcing strategy. Banks should spend time on proper business analysis of their existing systems' infrastructure and the data it holds, to identify where there needs to be further investment.
4. Ensure data consistency for liquidity risk analysis and reporting, especially for multi-jurisdictional organizations. Establishing a common unified data model will help create a data core that is shared across the group, allowing individual entities to add information that captures their regional nuances for local reporting.
5. Understand the implications of the new reporting deadlines in terms of system and process performance. Basel III now requires banks to calculate their LCR daily on a T + 2 basis, instead of on a bi-weekly basis, with intraday reporting on the cards in the US. In order for these new daily and intraday deadlines to be met, automation will need to be implemented.
6. Meet the stress testing requirements of the new regulation. Banks must demonstrate that they have sufficient HQLAs to survive a significant stress scenario lasting 30 calendar days. Banks should be able to stress their liquidity profile from a number of perspectives, such as exploring the impact of an increase or decrease in a business line, analyzing the change in the average duration of certain funding sources and identifying when it might run into funding issues.

*While banks already have scenario engines and liquidity models and have been performing liquidity stress tests as part of business as usual, the LCR calculations and the analytics surrounding them are all new. Furthermore, the need for daily – and soon, intraday – stress tests, plus the volume of data and additional complexity, necessitate automation. Banks will no longer be able to copy and paste spreadsheets or run scripts to extract data for scenario simulations, if they want to have time for analysis and time to develop the business intelligence to manage the bank and stay ahead of the curve.*

## What does a solution to the liquidity risk reporting challenge look like?

Banks will want to leverage their existing IT investment and supplement their incumbent infrastructure with the functionality it lacks, while creating the flexibility to meet not only the latest rules, but also those that will undoubtedly follow in time. The solution needs to be able to extract relevant information from systems and bring it together for analysis. It may have to generate missing information, such as the synthetic flows required by FR 2052a, and it needs to be able to perform the calculations necessary to create the numerators and denominators for the LCR and NSFR.

**A critical characteristic of the solution will be the ability to respond quickly to the stream of demands emanating from the authorities.** Rules are appearing with barely any breathing space between publication and implementation deadlines. Further, large multi-jurisdictional banks will face the additional challenge of having to meet individual local rules while also reporting

at a global level. A single common platform can have a number of advantages. It can be more efficient and cost effective because it brings data and reporting services together in centralized facilities. Running common applications reduces operational complexity and makes it easier to train and transfer staff when necessary.

A global platform can function as a hub, with a central liquidity regulatory engine and common data source linked to local regulatory liquidity engines. These satellite engines will draw relevant data from the hub and supplement it with local information to calculate jurisdiction-specific liquidity ratios and generate disclosures. Such architecture allows for local ownership of the compliance function, while maximizing efficiencies through shared services and ensuring consistency of critical information.

## The benefits of a strategic integrated platform

Banks need a platform that will enable them to comply with the new rules - calculate the LCR daily (and intraday when mandated to do so) and the NSFR at least quarterly, as well as perform the required stress tests and generate the appropriate reports at all levels of the organization. If the design and implementation of the platform are undertaken from a strategic perspective, the platform should offer a number of value-added benefits.

A flexible, integrated platform with automated processes will not only ensure compliance, but also improve internal liquidity monitoring and reporting. Banks need to ensure they have the unencumbered

assets necessary for compliance, but at the same time they do not want to be hoarding liquidity. As a result, an **integrated platform will enable firms to measure their liquidity more accurately - by business line, client and transaction - and provide warnings and prompts as their liquidity position evolves in order to facilitate more efficient management of assets.**

Knowing what level of liquidity is available and where it is located will enable banks to proactively manage their liquidity and maximize their potential by making better decisions and faster. As a result, banks can transform liquidity risk management from a cost center to a competitive edge.

## AxiomSL's integrated platform

The AxiomSL's platform for Liquidity Risk Management and Regulatory Reporting delivers the flexibility to comply with industry regulations and provides the scalability to meet multiple regulatory reporting requirements with greater speed and accuracy while ensuring full transparency and control. Further, firms can analyze and report required data, as well as model cash flows and implement a wide range of stress and scenario tests in a cost effective manner.

The strength of AxiomSL's liquidity solution is its robust Unified Data Model (UDM) which standardizes key metrics around the banks positions, contracts and cash flows. Combined with a comprehensive Liquidity Risk Engine, AxiomSL's Liquidity Solution is designed to scale for current and future regulatory and internal reporting. For example in the United States, AxiomSL has delivered an integrated 2052a/LCR solution that leverages the core UDM data set and produces both the Liquidity Coverage Ratio and the FR 2052a (and 5G) with consistency and transparency from the source through the output reports. AxiomSL has also integrated the BCBS standard NSFR calculations into the Liquidity Solution.

AxiomSL's enterprise data management (EDM) platform delivers data lineage, risk aggregation, analytics, workflow automation, validation and audit functionality as well as disclosures. The platform seamlessly integrates all of a firm's data and provides the analytics necessary to meet regional and global regulatory standards as well as internal reporting requirements. AxiomSL's high-performance and scalable platform gathers the data from multiple sources across finance, operations, risk and compliance departments, and it interfaces with any number of relational and non-relational databases, collecting data in text, Excel or any other file type. The use of visual data modelling and business rules makes modifications simple and fast. Data maintenance and administration functionality facilitate data quality control and adjustments, accumulation and archiving, status reporting, enriched data and application security. The architecture ensures auditability, traceability and transparency of the data and process.

AxiomSL's integrated platform gives institutions control of the entire liquidity risk management process, from data sourcing to reporting, including XBRL submission. The flexible architecture enables adaptation to changes across institutions, geographies and jurisdictions without system re-engineering. Drilldown functionality supports instant verification of aggregate numbers down to individual accounts for improved transparency. The ability to preview results enables analysis and adjustment of reported facts to ensure accuracy prior to submission.

With AxiomSL's technology, financial institutions around the world are able to meet various regulatory, analytics and business liquidity requirements on one integrated strategic platform.

## Conclusion

New liquidity risk regulations and the impact of liquidity on profitability present banks with significant technical and business challenges. These include flow volumes, infrastructure complexity and data management, as well as tight regulatory deadlines, increased reporting frequency and the need to make optimal use of available liquidity. Banks cannot afford to rebuild their liquidity infrastructure from scratch, so they need a solution that will provide immediate regulatory calculation and reporting functionality while integrating with their existing systems. The regulatory solution should include a central platform that can provide common data sourcing to ensure enterprise consistency, while accommodating local or regional requirements. If approached strategically, the solution should enable banks to better manage their liquidity for competitive advantage now, while giving them the flexibility to meet further regulatory and market demands in the future.

## Co-authors:



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### Ed Probst

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Ed's proficiency in the field of regulatory reporting includes quantitative analysis, risk management, systems analysis and integration, and expertise concerning specific regulatory reporting solutions, including those for the Comprehensive Capital Analysis and Review (CCAR), liquidity requirements and Basel. Ed also conducts product demonstrations and serves as an implementation specialist. Prior to joining AxiomSL in 2010, Ed spent more than a decade in the financial industry where he focused on developing his technical and analytical skills, as well as team management capabilities.



### Ed Royan

As AxiomSL's EMEA Chief Operating Officer, Ed is responsible for all aspects of the company's strategy in the region, including the development of its award-winning regulatory reporting solutions. He also oversees the company's EMEA regulatory analysis, implementation and client support work. Ed has more than ten years' experience working on regulatory, accounting and IT projects in the financial industry.

Before joining AxiomSL, Ed worked at Royal Bank of Scotland, Allied Irish Bank and Barclays, where he focused in particular on Basel calculation and financial operating model projects. Ed is a qualified accountant who is registered with CPA Australia