The following piece is the summary of an Independent Study research assignment conducted by Yale School of Management MBA candidate Christian Rodriguez ('19) during the Spring 2019 academic term.

Meeting Intraday Challenges with HQLA^X

Introduction

Intraday Liquidity is one of the key risks that large financial institutions have yet to systemically capture and proactively manage in a robust way. Progress is underway to address the shortcomings, but the process has been slow due to the difficult nature of identifying and managing intraday activities.

The scope necessary to manage intraday risks includes but is not limited to:

- capturing the significant number of transactions processed daily within the banking ecosystem (i.e. security buys and sells, payment flows across all financial products and services offered by banks) and the broader financial markets
- managing the number of systems and IT platforms involved in the processing of these transactions
- taking into consideration all the regulatory regimes involved during cross border transactions
- gathering real time data for proactive management

Further, non-intraday events and activities such as structural client arrangements, custody events, change of day opening and closing of repos, and busy market periods influence a bank's position intraday, which complicates the task of identifying and managing intraday risks.

Evolving regulations across the world including those around legal entity ringfencing also adds to the difficulty of managing intraday liquidity since liquidity and collateral must be managed within individual legal entities as well as from a parent entity standpoint. Additionally, the classification and definition of HQLA differs across jurisdictions, making it difficult for players such as international banks to manage their liquidity.

Broadly speaking, the existing Triparty collateral infrastructure is good at managing obligations in a single location. However, the existing Triparty agents have not managed to provide a synchronized free-of-payment (FoP) basket versus basket solution across multiple custodians. The current fragmented nature of the securities settlement infrastructure makes it difficult for any single Triparty agent to seamlessly relocate collateral across custodians (cross-custodian interoperability). To alleviate this industry pain-point, a "coordination layer" enabling synchronization across multiple Triparty agents is required to remove the need to relocate collateral cross-custodian.

Banks currently manage their intraday risks using liquidity buffers in the form of cash or HQLA eligible securities, however inefficient holdings of these assets comes at a cost. All these considerations are among the drivers necessitating the need for a liquidity borrowing market and a platform in which bank treasurers can get the right collateral to the right location at the right time.

The following paper provides further context into the current issues financial institutions face around managing their intraday liquidity risks and provides four use cases on how HQLA^X can provide value to bank liquidity managers, regulators and the broader financial services ecosystem:

1) Delivery versus Delivery (DvD) Functionality for Capital Efficient Liquidity Management
2) Balance Sheet Optimization for Margin Pledge Requirements
3) Monetization of Excess Liquidity for Yield Enhancement
4) Transparency for Collateral Chains to Mitigate Fire Sale Risk

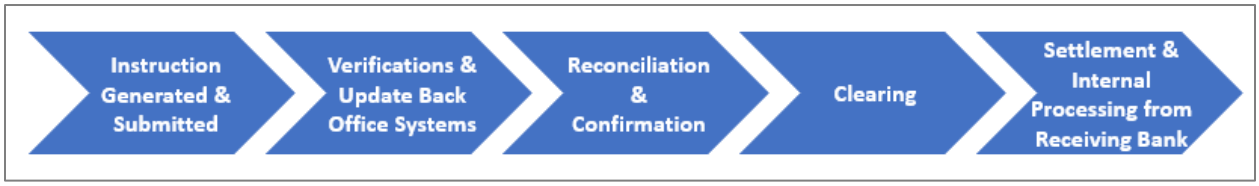
What are Intraday Risks

Cash Payment Risks

Generally, intraday risks arise from the mismatches in timing between payments and / or securities transactions between counterparties.

To provide color as to why these mismatches occur, we need to understand fundamentally what happens during transactions. For cash payments, the originating bank working on its own behalf or for the benefit of a client begins the payment process by generating instructions for a payment. The instructions are then electronically submitted and inputted into reporting systems, but errors often get in the way of straight through processing, causing delays until the errors are corrected. After this step, the originating bank will run the payment instruction through a set of checks to verify the payment and will finalize updating back office / accounting systems. Once completed, the payment is released and depending on if the bank is a member of a clearing system or if the bank is engaging with a correspondent bank, the payment will then be transmitted, reconciled, and confirmed by the clearer. The payment then settles, and the receiving bank will internally process the payment and any corresponding information[1]. Communication channels such as SWIFT are used to facilitate the steps in the payment process, but standardization of communication protocols across Financial Institutions is a current challenge.

Figure 1: High Level Steps Involved in the Cash Payment Lifecycle



Often, if a bank is leveraging a correspondent bank to clear its payments, the originating bank might not have visibility into the management of the funds once the correspondent bank is in control of the payment. The originating bank might also require the support of an uncommitted credit line extended by the correspondent bank to process the payment or the originating bank will have to request a committed credit line, which are often required to be collateralized. Alternatively, if the bank is self-clearing the payment, transaction activity could lead to intraday exposures at the Financial Market

[1] (2010). Payments, Securities, and Derivatives, and the Role of the Eurosystem. https://www.ecb.europa.eu/pub/pdf/other/paymentsystem201009en.pdf. Pg 25-34.

Utilities (FMUs) or central banks clearing the transactions. These intraday exposures need to be collateralized depending on the arrangement with the central counterparty. Collateralized assets in both cases (self-clearer and correspondent banking client) will be encumbered and tied up with the settlement agent.

For example, in the United States, banks clearing with the Federal Reserve must meet the Payment System Risk Policy (PSR) which states that:

1. "Institutions that access intraday credit must satisfy safety and soundness requirements
2. the policy establishes limits on the amount of Federal Reserve's intraday credit that an institution may use
3. the policy also permits Reserve Banks to protect themselves from the risk of loss through such measures as restricting account activity, imposing collateral or balance requirements, or prohibiting an institution from using Federal Reserve intraday credit
4. The policy provides incentives for institutions to pledge collateral voluntarily to secure daylight overdrafts. Institutions that secure their use of intraday credit with collateral are not charged for these daylight overdrafts, while institutions that incur uncollateralized daylight overdrafts will be charged a fee".[2]

Banks clearing in the United States with the Federal Reserve must have the ability to identify intraday risks and they must prove to the Federal Reserve that they have adequate control over these risks, otherwise the banking institution will face costlier requirements to clear USD, in addition to greater collateral requirements.

This has given rise to investment into banks' abilities to measure intraday risks in order to price them, to ensure the costs are accurately allocated internally via transfer pricing mechanisms, and ultimately to mitigate and / or avoid these risks altogether, including exiting or reducing certain businesses.

Securities Settlement Risks

Securities transactions represent the second major type of asset transaction. These are generated when securities are traded and linked to cash payment transactions. From a big picture standpoint, the backend that powers securities transactions is far more complex and fragmented than the cash payment systems.

When securities are issued they are assigned to Central Securities Depositories (CSDs) for safekeeping and other services. CSDs differ due to the holding structures that they can have. There is a direct holding model and a tiered model where custodians serve end clients as an intermediary connected to the final CSD. Different jurisdictions have expectations on the structure of the CSDs in their regions. However, once a security is in safekeeping, it can then be traded over exchanges and in Over-The-Counter (OTC) markets[3].

[2] (July 2012, Tenth Edition). Overview of the Federal Reserve's Payment System Risk Policy on Intraday Credit. https://www.federalreserve.gov/paymentsystems/psr_overview.htm

[3] (2010). Payments, Securities, and Derivatives, and the Role of the Eurosystem. https://www.ecb.europa.eu/pub/pdf/other/paymentsystem201009en.pdf. Pg 65-80.

When a trade is initiated, in the back-end, instructions are created and sent for clearing, where orders are transmitted and reconciled. Transactions then settle by which the securities are delivered and the corresponding payment is received. CSDs and custodians can provide these trade settlement services. And generally, securities transactions are conducted in exchange for cash, therefore settlement success is contingent on delivery of cash. From a securities purchaser perspective, only when the finality occurs in the CSD are the securities credited to the customer's balance. Due to the independent cash and securities infrastructures throughout the world, operational risk arises due to the intraday timing mismatches from cash-securities transactions. These risks are further exacerbated when the process arrangements are more complex, for example when including the need to convert currencies and to settle securities cross border. Ultimately, the lack of an atomic settlement solution across custodians means that securities will settle only after many steps and the resulting timing mismatch between cash and securities flows will tie up intraday liquidity.

Figure 2: High Level Steps Involved in the Security Transaction Lifecycle

Among the many other barriers to a truly efficient payment / securities transaction ecosystem there includes: national differences in IT systems, different systems serving different kinds of securities (i.e. equities vs. Bonds vs. MBS), different regulatory regimes that impact custody and liquidity availability to market participants, and national differences in settlement periods and deadlines which can lead one party exposed if its counterparty's national markets closed before a transaction settled. Looking at the industry's progress to fix these inefficiencies, while there has been significant progress in improving payment flows, the securities settlement arena has been significantly behind in comparison despite many cross-border efforts to harmonise this activity.

Management of Intraday Risks

Currently banks manage their intraday risks through often informal mechanisms spanning multiple functions such as Treasury, Operations, Credit Risk, and the Business Lines / Relationship Managers (Front Office Transaction Banking, Securities Lending, Prime Brokerage, Equity / Debt Capital Markets, etc.). Working together throughout the business day, these groups collaborate to determine counterparty exposures, raise limit approvals when necessary, prioritise and manage payment queues, post collateral to FMUs / Central banks / Counterparties and to engage / communicate with clients. This is in effect a significant number of moving parts and requires significant personnel resources to be managed across a firm and often across multiple entities internationally. These mechanisms can get even more complex when adding heightened activity levels such as those seen during volatile periods (Brexit, etc.). In addition, often the teams working together are using different data to make decisions adding to the complexity of reconciling all these activities. These gaps can make it difficult for management to have clear visibility into a bank's operations.

On one hand, the "current systems" employed by the various financial institutions do work to an extent and have been used to date but there is significant opportunity and regulatory requirements for heightened efficiency, communication, and data resource utilization during the management of intraday activities.

Meeting Regulatory Requests

As regulatory agencies around the world begin to formalize their intraday requirements for financial institutions a new kind of risk is also beginning to emerge in the industry. In recent years, regulatory bodies such as the Fed, PRA and ECB have asked banks in their jurisdictions to provide specific reports and updates on intraday flows and transactions as part of exploratory efforts. These efforts have arisen from the aftermath of the financial crisis and the collapse of Lehman Brothers which highlighted the importance for financial institutions to manage their intraday risks. For many banks, it has been a difficult exercise to meet these regulatory requests, to obtain the necessary intraday data and to manage a golden source of data to leverage across their firms. These requests are often met via siloed efforts that leave the personnel involved capacity constrained as they struggle to juggle their more business as usual responsibilities. As the regulatory framework around intraday activities becomes more robust there will be an opportunity to improve against the current status quo.

Intraday Stress Testing

To manage the liquidity needs of a bank, stress testing is utilized in order to determine an appropriate buffer to hold. Specifically, for intraday activities and more specifically, for intraday liquidity, banks must develop firm specific intraday stress tests.

While intraday stress testing is still in its relative infancy, guidance has been cascaded by various regulatory agencies to financial institutions in their jurisdictions. Banks have developed and adopted methodologies suited to their unique business lines, but a significant struggle has been the sourcing of appropriate and vetted data. As described earlier in this paper, the significant amounts of data (there can be hundreds of thousands of transactions per day per G-SIB), the number of systems the data needs to be derived from, and the combining of data is a significant undertaking. For a bank with international operations, combing securities data from its different securities systems around the world can lead to significant frustration. For example, one system in country A might report on multiple time stamps per transaction (such as the time the instruction was created versus when the payment was cleared) and a corresponding system in country B might report on transactions in a different format.

If a broker dealer is utilizing a correspondent bank, then obtaining data from its correspondent bank and reconciling this provided data with its own proprietary data can also be a difficult task. Moving forward, combining securities transaction, cash transactions, and account balances into a single view that is also aligned by time (i.e. converting an international bank's transactions into a single time zone) presents another hurdle for banks looking to develop intraday stress tests.

These are among some of the major challenges that require solving in order to truly determine the intraday exposures a bank incurs. Without this data properly aligned, a bank's intraday stress test

methodology might not be properly calibrated, and the buffer amounts generated incorrectly sized. If an intraday stress test is put into production and sizable buffer changes occur month over month, it may be difficult to reconcile and pinpoint the drivers of the change. Furthermore, volatility in buffer results can make liquidity management and collateral optimization difficult post Liquidity Coverage Ratio and NSFR considerations. An increased intraday stress test buffer requirement will drive a direct cost to banks and their bottom lines in the form of opportunity cost and costs of carrying higher liquidity buffers.

To gauge the financial impact of liquidity buffers to the banking ecosystem one can do a quick back of the envelope analysis. A 2019 ECB study stated that Euro area banks held EUR 3.8 trillion of Euro-denominated HQLA corresponding to an aggregated LCR of approximately 150% (as of Q3 2017)[4]. Comparatively, a 2018 Federal Reserve study stated that at the end of 2016, 8 U.S. G-SIBs held more than $1.5 trillion of HQLA, representing 70% of the total assets of LCR standard banks, or approximately $2.14 trillion of total HQLA. If one factors in approximations for the holding cost for HQLA portfolios, ~100 bps[5], then just in the Eurozone, the estimated aggregate cost for holding HQLA portfolio by Eurozone banks is ~38 billion EUR annually, with ~12.6 billion EUR corresponding to HQLA held above the 100% LCR threshold. These are sizable figures and intraday activities play a significant role in the need for these liquidity buffers. According to a September 2018 Federal Reserve survey covering 51 banks, 60% of the respondents rated intraday payment flows as an important or very important factor affecting their demand for reserves[6].

HQLA^X can help financial institutions improve their balance sheet management and make an economic impact to the bottom line through the following four use cases.

HQLA^x Platform – Benefits for Intraday Management

In the face of all these challenges, there lies significant opportunity to improve intraday management of liquidity. Below are four intraday use cases leveraging the current HQLA^X platform to help optimize a bank's balance sheet and liquidity usage.

1) *Delivery versus Delivery (DvD) Functionality for Capital Efficient Liquidity Management*

The HQLA^X platform allows banks to upgrade and downgrade securities in both a balance sheet and operationally efficient manner that facilitates mobilizing liquidity where needed. As described earlier in this paper, intraday risks are driven by asset transfer mismatches and the ability to minimize these mismatches will reduce operational risk capital requirements and will lower intraday stress test buffer requirements. The HQLA^X platform realizes these benefits by allowing banks to optimize their usage of the securities lending collateral upgrade market and by enabling increased exchanging of non-cash

[4] (2019, February). Availability of high-quality liquid assets and monetary policy operations: an analysis for the euro area. https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op218~801632b377.en.pdf. Pg 3.
[5](2018) Reaping the Benefits of Intraday Liquidity, Oliver Wyman. https://www.oliverwyman.com/content/dam/oliver-wyman/v2/publications/2018/june/Intraday%20Liquidity%20Final%20Report.pdf. Pg 2.
[6] (2019, March 5). Banks' Demand for Reserves in the Face of Liquidity Regulations. https://www.stlouisfed.org/on-the-economy/2019/march/banks-demand-reserves-face-liquidity-regulations

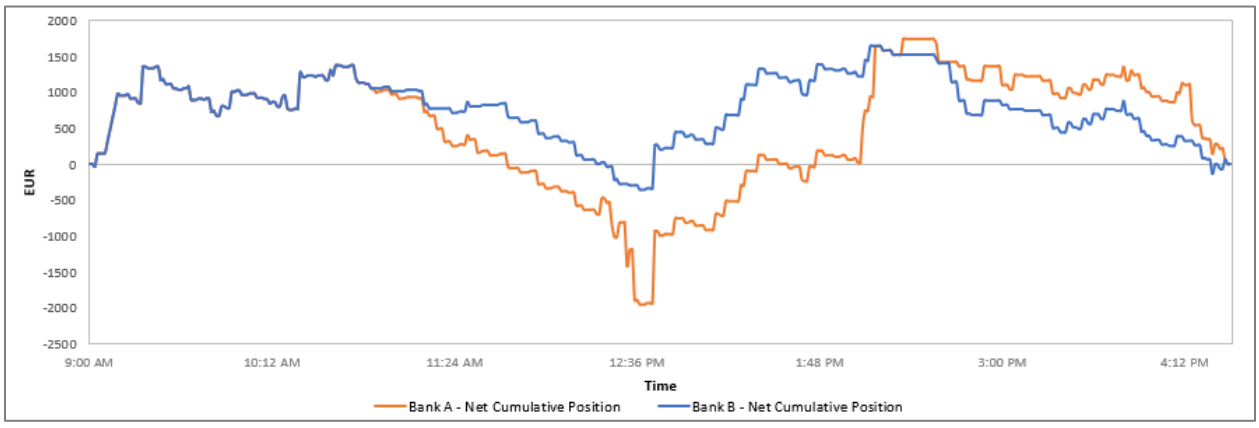
collateral rather than exchanging cash for collateral. The inability to fully leverage these upgrade markets leads to inefficient liquidity holdings on the part of banks and adds to the timing mismatches caused by cash / securities linked transactions.

A big reason why this inefficiency exists is that the current securities settlement infrastructure suffers from the inability to provide an industrial-strength solution for atomic delivery versus delivery (DvD) of baskets of securities. This refers to instantaneous exchange of one basket versus another basket across the fragmented securities settlement system. Looking at even just one triparty agent, there are no services that deliver a synchronized basket versus basket solution, let alone across triparty agents.

Current market practice is to settle collateral upgrade transactions in one of two ways: two free-of-payment (FoP) settlement instructions or two delivery-versus-payment (DvP) settlement instructions. Whether a bank is leverage ratio constrained or capital ratio constrained determines the capital impact of these transactions 1) due to increased RWA exposures caused by timing mismatches of the FoP deliveries or 2) due to the requirement to run higher intraday liquidity buffers to support deliveries.

Bringing this to intraday stress testing, when a bank aggregates its transactional data and begins analyzing its cumulative throughputs, the timing mismatches arising from 1) using cash over securities as collateral, and 2) the use of multiple FoP or DvP settlement instructions will most likely drive larger intraday exposures. These exposures will then be used as inputs into a bank's intraday stress test. In the explanatory diagram below (figure 3), Bank A (orange line) has higher amounts of transaction timing mismatches compared to Bank B (blue line), leading to a larger negative position around noon when activity for both banks begin to spike and intraday pressures begin to compound, adding up quickly. Bank B has a more balanced net cumulative position throughout the day, in this case due to the usage of atomic delivery versus delivery transactions and the effective management of intraday liquidity. Comparatively, Bank A's greater exposures will necessitate a larger intraday buffer.

Figure 3: Net Cumulative Positions for Bank A and Bank B (Illustrative Example)



Furthermore, from a counterparty relationship standpoint, lowering intraday exposures reduces a bank's intraday liquidity and credit exposures to its correspondent banks. Benefits here include potentially lower correspondent banking costs and improved timing certainty. Alternatively, if the bank is self-clearing, the requirements for posting collateral at FMUs / central banks can be lowered.

2) Balance Sheet Optimization for Margin Pledge Requirements

Trading derivatives either through CCPs or bi-laterally creates complexities for financial institutions. The rules and negotiated conditions surrounding collateral include specifications on eligible collateral, counterparty margin thresholds that need to be met, and frequencies of postings including intraday postings (which if cash is used, can tie up intraday liquidity and this can be costly especially if the posting is done early in the bank's business day). Many industry players attempt to leverage their "cheapest to deliver" collateral in order to fulfill their minimum margin requirements but due to the fragmented securities infrastructure and the silos often found internally at banks, the process is not as efficient as it could be. Operationally speaking, mobilizing collateral to cover an exposure through repositioning incurs heavy manual and error prone processes. Additionally, it is currently very challenging to do these movements in real-time and the lack of this ability does put a ceiling on the potential of truly optimized collateral management.

Aside from operational frictions, the derivatives market is being heavily influenced by new regulations impacting margining rules for derivatives clearing which will impact the liquidity needs of both sell side bank players and the buyside. EMIR stipulations have already started but are progressively expanding and by 2020 a significant number of non-cleared swap counterparties will be required to pledge significant amounts of additional collateral that cannot be re-used or re-hypothecated to manage their future derivatives trades[7].

By tying up collateral for margining requirements, market participants have less liquidity available to manage internal intraday pressures while also managing their variation margin needs, and therefore liquidity managers are eager for a solution to maximise the utility of their limited balance sheets. HQLA^X meets this pain-point by providing liquidity managers with atomic collateral transformation flexibility through the upgrade/downgrade market, opening up much needed balance sheet efficiency. This balance sheet utilization flexibility provided to financial institutions is important since each firm will face and manage unique intraday and general liquidity risks, while also having to manage their balance sheets with their regulatory imposed bounds in mind.

Furthermore, centrally cleared derivatives impact to liquidity is also growing, a trend that is clear over the past few years and this trend is expected to increase in the coming years. The below chart shows recent growth in required Initial Margin posted at CCPs for Interest Rate Derivatives (IRD) and Credit Default Swap (CDS) contracts[8]:

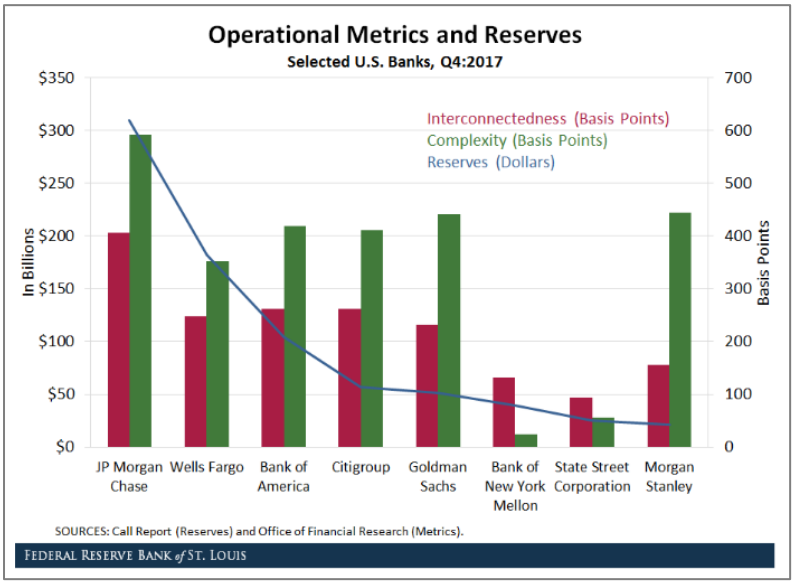
Figure 4: Required Initial Margin for IRD and CDS

[7] (2018, March 5). Initial margin for non-cleared derivatives: what is it? https://securities.bnpparibas.com/insights/initial-margin-derivatives.html

[8] (2018 April). ISDA Margin Survey Full Year 2017. https://www.isda.org/a/oQmEE/ISDA-Margin-Survey-Full-Year-2017.pdf. Pg 8.

3) Monetization of Excess Liquidity for Yield Enhancement

According to a study by the Federal Reserve Bank of St. Louis from March 5, 2019; "reserves are not required to be held to meet short-term liquidity needs. That said, as shown in the figure…, several large U.S. banks are holding sizable reserves, and their holdings are highly correlated with measures of financial interconnectedness and business model complexity"[9]. This study implies that banks are not optimizing their liquidity management because of their operational needs which are heavily influenced by frictions in the capital markets infrastructure.



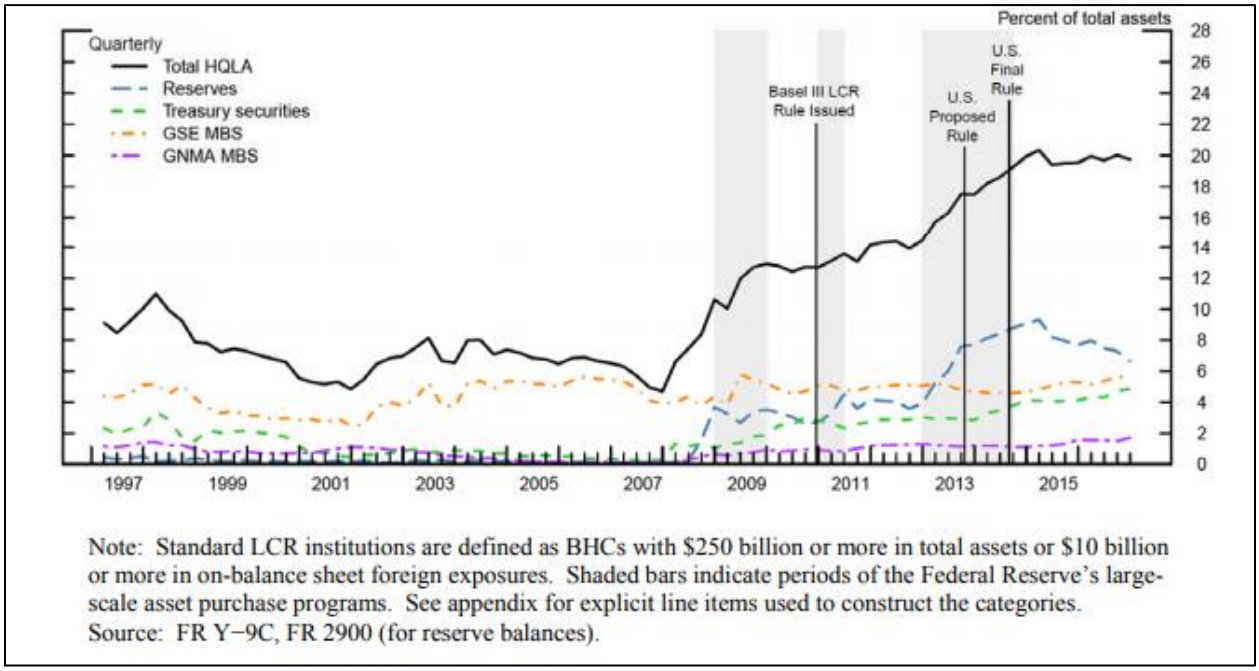
Another Federal Reserve study published on January 31st 2018 titled "How have banks been managing the composition of high-quality liquid assets?" further added that banks engaged in significant payment, settlement and clearing activities (PCS) are likely to hold relatively higher percentage of reserves in order to meet intraday needs, an amount that is larger than optimal compared to risk-return calculations. Banks with large scale operations and with complex business lines such as prime brokerage and commercial lending and with heavy institutional deposits bases are most incentivized to keep cash for unexpected buffer needs[10]. The study further implied that in the lead up to the LCR implementation deadline that "banks may have felt some pressure to build a sufficient stock of HQLA to become compliant. If so, managing

[9] (2019, March 5). Banks' Demand for Reserves in the Face of Liquidity Regulations. https://www.stlouisfed.org/on-the-economy/2019/march/banks-demand-reserves-face-liquidity-regulations

[10] (2018, January 31). How have banks been managing the composition of high-quality liquid assets? https://www.federalreserve.gov/econres/feds/files/2017092r1pap.pdf. Pg 18/27

the composition of HQLA over that period may not have been banks' top priority."[11] As seen in the below chart taken from the same study, U.S. banks, post meeting LCR requirements are now beginning to optimize their balance sheets by reducing reserves held and by increasing the number of Treasuries and MBS held. Banks have shown their appetite to improve their collateral management.

Figure 6: Major Components of High-Quality Liquid Assets at Standard LCR banks



Note: Standard LCR institutions are defined as BHCs with $250 billion or more in total assets or $10 billion or more in on-balance sheet foreign exposures. Shaded bars indicate periods of the Federal Reserve's large-scale asset purchase programs. See appendix for explicit line items used to construct the categories.
Source: FR Y−9C, FR 2900 (for reserve balances).

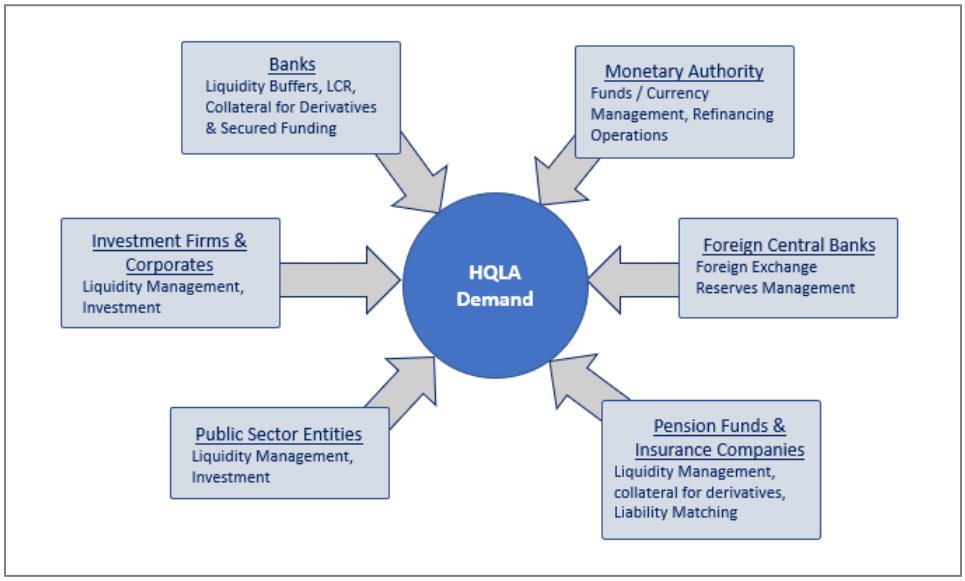
Given the extra liquidity held by banks, the opportunity to optimize portfolio yield is an attractive proposition and this gives rise to the third presented benefit of HQLA^X.

This third intraday use case of HQLA^X is around the ability to provide institutions with excess liquidity an efficient platform to monetize their assets and obtain extra yield through an intraday market. Currently firms with extra liquidity are curtailed from leveraging their liquidity in this manner due to the operational issues which impede liquidity providers and liquidity seekers from engaging with each other as much as they could, specifically in the collateral upgrade market. The potential for a liquidity market and further an intraday liquidity market goes beyond banks and includes other financial market participants such as insurance companies, hedge funds, and pension funds who are long equities and need HQLA for a multitude of reasons. The diagram below outlines the major parties in the financial ecosystem and their motivations for wanting HQLA[12]. The HQLA^X platform will develop the ability to match liquidity providers with liquidity takers in an operationally efficient manner, and in the process will create the opportunity for liquidity providers to generate additional yield.

[11] (2018, January 31). How have banks been managing the composition of high-quality liquid assets? https://www.federalreserve.gov/econres/feds/files/2017092r1pap.pdf. Pg 10/27

[12] (2019, February). Availability of high-quality liquid assets and monetary policy operations: an analysis for the euro area. https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op218~801632b377.en.pdf. Pg 16.

Figure 7: Overview of Market Participants and their HQLA Needs



4) Transparency for Collateral Chains to Mitigate Fire Sale Risk

The fourth use case that the HQLA^X platform provides value in is around the reduction of systemic risks related to fire sales risks in multi-chain links. Fire sales occur when market participant(s) experience distress and counterparties begin to unwind their counterparty exposures to reduce their risk or look to increase their liquidity through asset sales. Alternatively, if a firm defaults, its counterparties and investors in the markets liquidate the at-risk collateral and positions they hold. Fire sales are a major source of instability in the financial ecosystem, this was especially evident during the 2008 financial crisis when heightened volatility led to the rapid sale of large amounts of assets which rapidly depressed prices. Many individual firms were forced to realize losses as they closed positions while losing capital and found it difficult to tap funding sources, which further fueled more asset sales[13]. Situations like these can severely hit all market participants if the shock is big enough and as witnessed during the financial crisis, they create significant intraday risks which are difficult to manage. For the benefit of the financial markets and for regulators across the world, minimizing the risk of fire sales is a top concern.

HQLA^X can specifically target these concerns via the capabilities embedded in its technology by providing mutually distrusting market participants with agreement on relevant facts via the Corda blockchain network. Specifically, in the event of a default of a participant in a chain of DCR transactions, the HQLA^X platform could help facilitate orderly unwinds by introducing non-defaulting counterparties to one another to offset equal and opposite risk exposures to a defaulting counterparty.

In today's bilateral securities lending markets, participants looking to unwind positions with a defaulted counterparty have to either buy or sell assets in the secondary markets. The HQLA^X platform could

[13] (2013, May). The Risk of Fire Sales in the Tri-Party Repo Market. https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr616.pdf.

provide a mechanism through which a market observer node could track collateral chains and propose netting trades amongst counterparties with exposures to a defaulted counterparty. This would eliminate the unnecessary secondary market transactions which potentially cause fire sale risk and exacerbate systemic risks.

Data and Regulatory Reporting

A significant opportunity exists around data and specifically, the distributed ledger technology underlying the Corda platform offers the ability to record information from authoritative and vetted sources. It allows the aggregation of data in efficient ways, and all this means more time spent on developing accurate methodologies for stress testing as opposed to fixing data issues. Currently HQLA^X does not aggregate data, however, as more assets get added to the HQLA^X platform, the underlying Corda data capabilities will be revisited for inclusion to further drive intraday value to clients. A solution that provides vetted data from multiple assets together in one source would alleviate many of the data issues described earlier in this paper. These capabilities will also lend themselves to the building of intraday management dashboards.

Looking at regulatory reporting, the ability to provide regulators with a regulatory node will provide them with significant risk management transparency into the financial markets. A regulatory node will give regulators the same information that market participants have and will allow them to check transactions statuses more efficiently than currently available. These regulatory nodes will also allow regulators to conduct their own analysis on transaction activity and will enable real-time ledger visibility which can facilitate regulatory compliance for market participants. This can in theory alleviate regulatory reporting pressures off banks for example in complying with reporting requirements on their securities finance transactions (SFTR – Securities Financing Transactions Regulation). Providing regulators with their own nodes in the HQLA^X platform will be beneficial to both regulators and market participants.

Conclusion

While just getting started the HQLA^X team has shown significant progress towards realizing the development of the HQLA^X platform and major milestones have and are being met. The future roadmap is poised to realizing all the benefits captured in this paper and given the current pressures facing banks, regulators, and major market participants with regards to managing intraday risks, the HQLA^X platform provides solutions to managing these risks.