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ADVANCING THE COLLATERAL MANAGEMENT IMPERATIVE

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EXECUTIVE SUMMARY

Sophisticated collateral management capabilities[1], previously seen as a "nice to have", have now become a necessity with the advent of more stringent liquidity and capital standards, the industry wide push for cost efficiency, and the requirements associated with advanced recovery and resolution planning. To meet these heightened standards it is critical that firms develop improved processes and infrastructure – especially firms with significant capital markets operations for which a higher regulatory bar has been established[2]. More proactively, superior collateral management infrastructure has a real upside: it can enhance collateral optimization processes, which in turn could improve firms' day-to-day operational efficiency and increase profitability.

We argue in this paper for robust collateral management systems and practices, not only as part of a strong risk management program, but also as a part of day-to-day business operations effectiveness and resolution planning. We propose a conceptual framework for a best-in-class enterprise solution that combines transparency into collateral availability and usage, central oversight, and a robust IT infrastructure. Collateral management can no longer be treated as a mundane "back office" function: it needs to be elevated to a strategic, enterprise-wide risk practice that delivers required management information on close to a real-time basis. This shift requires a clear vision of the target state and management focus in order to implement. It may also mean significant resource investment at no less a level than is afforded to front office systems.

1 Collateral as used here, refers to assets (typically securities) used in liquidity management, secured financing transactions, posted/received to secure trading or derivatives exposures, and other business activities

2 Additionally, firms falling above $50 billion or more in total assets under the Dodd Frank Act, and the US operations of large foreign banking organizations, are subject to enhanced prudential standards having more stringent requirements

INTRODUCTION: THE CHANGED LANDSCAPE

Exhibit 1: Collateral in risk management practices

THEN

- Rudimentary liquidity risk management practices
- Other ad-hoc business needs informally managed
- Limited visibility to senior management

NOW

- Prescriptive liquidity risk management requirements
- Margining requirements
- Optimization and efficiency across secured financing activities
- Resolution plan requirements

Source: Oliver Wyman research and analysis

The level of sophistication of collateral management techniques in place today at financial institutions varies considerably, often driven by management's view of the perceived materiality of collateral-related business activities and bottom-line impact, and has changed substantially over time.

A fundamental, but not new, aspect of a strong liquidity risk management practice has been the maintenance of assets that serve as a reliable source of liquidity when required (including in stressed market conditions). Banks of all sizes have traditionally used Asset Liability Committees ("ALCO"), to ensure that liquidity risk appetites were defined, and risks were measured and managed within appropriate limits. A key part of those ALCO responsibilities was to identify assets that would serve as a liquidity source. These asset pools were typically largely held in head office or lead bank entities and jurisdictions to provide maximum financial flexibility in the context of global operations. This process necessarily required a conservative investment policy to constrain the credit quality of investment securities purchased. A well-managed liquidity risk management program had therefore hinged on the appropriate sizing of liquidity needs and a constraint around the assets that would meet such needs. This assessment of liquidity positions and adequacy, however, was typically done on a month-end basis – this afforded risk managers the opportunity to make month-end adjustments that would ensure that defined limits (such as on coverage ratios) were met. The importance of monitoring tools was often not elevated as a top priority as liquidity coverage ratios were apparently being met.

With increasingly advanced liquidity regulation, specifically expectations around the Basel Committee's LCR[3] final standard, national liquidity rules now invariably define high quality assets and prescribe haircuts that must be applied in assessing their liquidity value. Liquidity assessments are now often required daily and on a legal entity basis. The associated collateral management challenges have thus significantly increased, with liquidity buffers consequently dispersed across multiple entities and jurisdictions as a result of the demands of local regulators. This in turn has resulted in explicit requirements for those operational capabilities that are fundamental

3 In January 2013 the Basel Committee for Banking Supervision released its final standard on "Liquidity Coverage Ratio and liquidity risk monitoring tools"

to a robust liquidity risk management program. These capabilities include the ability to monitor, manage, and report on collateral effectively at the individual security level and on a near-real time basis. The importance of strong collateral management capabilities has thus taken on increased significance, given the broader mix of securities that are now eligible for inclusion in liquidity buffer pools, such as Russell 1000 equities for US institutions, along with the need to manage liquidity risk on a legal entity basis.

Exhibit 2: Acceptable asset classes* for liquid asset buffers has dramatically increased

TYPICAL 2008 AND PRIOR LIQUIDITY POOL ASSETS

- Cash
- Unencumbered US and foreign government bonds
- US Agency securities
- Limited AAA-rated structured bonds (ABS, etc.)

SELECT US LCR ACCEPTABLE COLLATERAL

Level 1 liquid assets

- Reserve Bank balances
- Foreign withdrawable reserves
- US Treasury securities
- US government agency securities
- Non-US government securities

Level 2A liquid assets

- US government-sponsored enterprise security
- Non-US sovereign entity securities that are not part of Level 1 assets

Level 2B liquid assets

- Investment-grade corporate debt securities
- Publicly traded equities included in the Russell 1000
- Select municipal securities

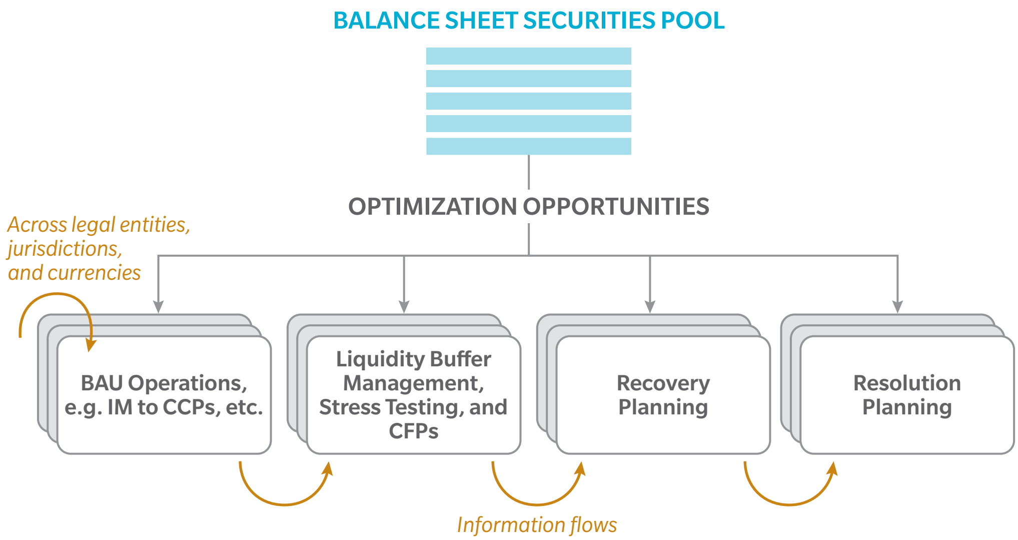
* Certain asset classes are subject to qualifying criteria

Source: G-SIFI Annual Reports and US LCR Regulation WW

Other business as usual activities also add to the importance of sound collateral management practices. These include secured financing transactions having varied structures, as well as prime brokerage activities in which efficiency of collateral usage creates inherent complexity.

The need for such strong capabilities however, extends well beyond the management of liquidity buffers and other day-to-day business activities. More recently introduced resolution planning requirements also emphasize the importance of strong collateral management practices. Financial institutions typically resort to balance sheet management activities such as asset sales or business dispositions as part of resolution strategies. The credibility of such plans is significantly enhanced with the demonstration of strong collateral management platforms, especially given the increased complexities of firms' business operations. Advanced platforms should incorporate capabilities such as the projection of collateral requirements and availability at the legal entity level. Furthermore, resolution period liquidity modelling is expected to be demonstrated at a granular level, including daily position determination. Having a flexible collateral management platform can have a meaningful impact on such planning.

Exhibit 3: Collateral management spans day-to-day business activities and risk management processes and requires consideration of legal entities, jurisdictions, and currencies

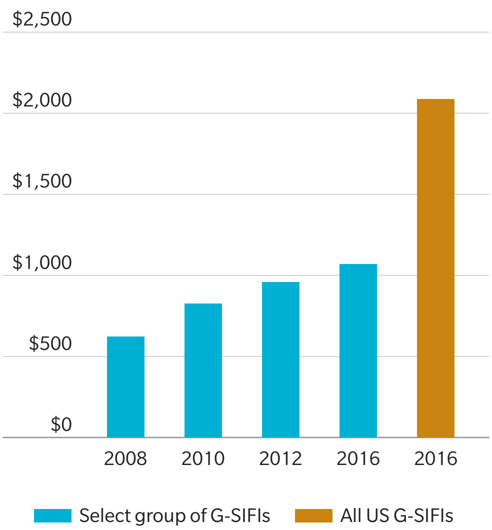


Source: Oliver Wyman research and analysis

COLLATERAL IN LIQUIDITY RISK MANAGEMENT PROGRAMS

Exhibit 4: The magnitude of liquidity buffers has risen dramatically

US G-SIFI HQLA ASSETS



Source: Oliver Wyman estimates based on G-SIFIs' Annual Reports

LIQUIDITY BUFFER MANAGEMENT

Traditionally, assets held by banks to meet unexpected liquidity needs largely comprised cash, US Government Securities, US Agency obligations and a sprinkling of other collateral types (e.g. AAA-rated ABS securities). The advent of the US LCR[4] has broadened the variety of securities that are eligible as "high quality liquid assets", and additionally, the prescribed risk quantification has resulted in a significant increase in the magnitude of liquidity pools. This puts additional downward pressure on bank profitability, making the active management of this collateral pool of high significance.

Liquidity risk managers must therefore have at their disposal appropriate collateral management capabilities to be positioned to identify, manage, and monetize these assets on a same day basis. This becomes even more critical for firms with material sales and trading activities, for which liquidity requirements can fluctuate quite significantly on a daily and intraday basis. For globally-active institutions, this monetization challenge becomes incrementally more difficult as it inherently requires that risk managers:

- Identify collateral at the CUSIP level with transparency as to its location – jurisdiction, legal entity and account where held
- Assess the market-facing operational capabilities of the legal entity at which the collateral is being held in the event that the collateral has to be outright sold
- To the extent that a Central Bank (or liquidity facility provider) secured liquidity facility is contemplated as a liquidity source (even for short periods), consider the ability of the legal entity holding the collateral to participate in and access such facilities in the event that collateral transfers to other entities are restricted
- Evaluate mismatches between the currency of the liquid assets and the resulting monetization proceeds to the currency of liquidity need
- Identify owned collateral that a firm may be using in secured financing transactions with appropriate flagging of any associated encumbrance

4 The US implementation of the Basel Committee on Banking Supervision's 2013 LCR standard as described in Federal Reserve 12 CFR Part 249 – Regulation WW

- Identify client collateral available and/or used through re-hypothecation rights; these assets have to be distinctly identified as their availability depends on hard-to-predict client behavior which can lead to unforeseen liquidity needs in an idiosyncratic shock. Furthermore, US LCR treatment excludes from HQLA consideration certain re-hypothecated assets where the beneficial owner *"has a contractual right to withdraw the asset without paying non-de minimis remuneration at any time during the 30 calendar days following the calculation date"*[5]

In today's risk management environment, it is not atypical for large institutions to be carrying hundreds of billions of dollars of collateral for liquidity risk purposes. However, in many institutions the collateral capabilities and underlying systems/data remain fragmented as this competency has not been prioritized on the executive team agenda. A strong collateral platform that enables effective management and generates liquidity when needed should be seen as a critical element of a firm's overall risk management framework.

COLLATERAL MANAGEMENT IN REVENUE GENERATING BUSINESS ACTIVITIES

Apart from processes associated with liquidity stress testing and recovery and resolution planning, firms will be well served by having active collateral management practices as collateral optimization takes on heightened importance. Recent developments increase the urgency, such as the BCBS-IOSCO[6] initial margin requirements for non-centrally cleared derivatives which began phasing in on September 1, 2016. Revenue generating activities that will benefit from a more robust collateral management optimization platform include:

1. **Collateral postings on OTC and centrally cleared transactions**

   The BCBS and IOSCO recognize that "financial institutions may need to obtain and deploy additional liquidity resources to meet margin requirements beyond current practice." A robust collateral management system may minimize the costs associated with securing such incremental collateral by pinpointing resources available for deployment across a firm's global operations. These initial and variation margin requirements include transactions related to foreign exchange, interest rate, credit, equity, and commodity trading, among others. A 2012 BCBS Quantitative Impact Study[7] determined that a zero threshold margin requirement would result in the need for roughly €1.3 trillion of margin requirements for the QIS respondents (consisting of 39 institutions, including 33 banks), and €1.7 trillion for the entire global market. Furthermore, firms will need to be particularly attentive to avoid "double counting" or inadvertently encumbering HQLA assets, given the overlap between assets that are eligible for HQLA consideration and those that are considered high quality for margining purposes.

5 Federal Reserve 12 CFR Part 249 – Regulation WW

6 Basel Committee on Banking Supervision and International Organization of Securities Commission

7 Study by BCBS's Working Group on Margin Requirements; see Appendix of: *Second Consultative Document, Margin requirements for non-centrally cleared derivatives* (February 2013)

2. **Secured financing “shells”**

   It is often the case that secured financing arrangements through repo markets are established in which a firm is assured financing of multiple asset classes under an “umbrella” agreement. In normal business environments, firms often fill such “shells” with the highest quality collateral available such that in an idiosyncratic or market stress when financing conditions may become more challenging, those higher quality assets may be withdrawn and replaced with more difficult to fund, lower quality assets. Effective risk management via this process can only be achieved with real-time information and accurate identification of available collateral. This requires seamless communication and information flows between front office, operations, treasury, and risk. This becomes especially challenging in the context of required intraday transparency around the interplay with unencumbered liquidity buffer considerations and potential collateral requirements across various business units.

3. **Collateral upgrade transactions**

   Transactions in which firms temporarily exchange assets of different credit quality, e.g. a government bond for a convertible security, need to be monitored and carefully managed. Upgrade transactions often involve assets such as government securities that could impact a firm’s HQLA or have an impact on net cash outflows. Additionally, there is the potential for low quality assets to “return” to a bank’s balance sheet when that institution is facing stress depending on the transaction, e.g. exchanging a convertible bond for a government security. Identifying, forecasting and planning for such contingencies requires strong collateral management capabilities.

4. **Internalization transactions**

   So named because firms use their long inventory and client re-hypothecated securities to cover other needs such as client shorts via internal allocation mechanisms, these transactions can be an efficient use of collateral if properly risk managed. As all of the variables in such programs (e.g. a firm’s long inventory, clients’ desire to short securities, availability of re-hypothecated collateral linked to margin lending) are subject to rapid and significant change, prudent risk mitigation requires correspondingly strong collateral management approaches with appropriate identification of collateral usage to business activity and source, particularly for client re-hypothecated collateral.

5. **Committed, secured credit facilities**

   Both syndicated and bi-lateral facilities typically allow for funds advancement against a broad range of defined collateral as would be expected to exist in business operations. Lenders in such facilities require clear identification of assets that are being pledged into the facility should an advance be required. Timely and accurate information on available collateral is therefore critical to support such advances.

LIQUIDITY STRESS TESTING, CONTINGENT FUNDING PLANNING, RECOVERY AND RESOLUTION PLANNING

Robust analysis of a firm's liquidity adequacy requires a combination of scenario as well as sensitivity analyses. Liquidity stress testing, contingent funding planning, recovery and resolution planning all now require risk managers to have analytics in place with which to quantify the amount of non-HQLA assets available and potential monetization proceeds. Without reliable collateral management capabilities that provide granular information regarding on- and off-balance sheet assets, producing credible plans for these exercises becomes extremely difficult. This is more so the case for large globally active firms' which have collateral pools geographically dispersed. Additionally, a robust collateral management platform becomes even more important to the extent that recovery or resolution plans contemplate business line restructurings, asset dispositions or legal entity reorganizations. Regulatory guidance, such as SR 14-1, related to recovery and resolution preparedness further emphasizes this need. As part of that guidance, firms are expected to "forecast changes in collateral requirements and cash and non-cash collateral flows under a variety of stress scenarios". A robust platform will include capabilities and provide transparency into:

- Contractual collateral needs across businesses with appropriate tagging of assets encumbered for those purposes
- Contingent and behavioral considerations with respect to trading and central counterparties under idiosyncratic as well as market stresses and how collateral may be impacted by those behaviors
- Market impacts on collateral valuations
- Aggregate available collateral resources – identification, location, entities and currency
- Structured data capture of critical collateral-related contractual terms (e.g. eligibility rules, downgrade triggers)

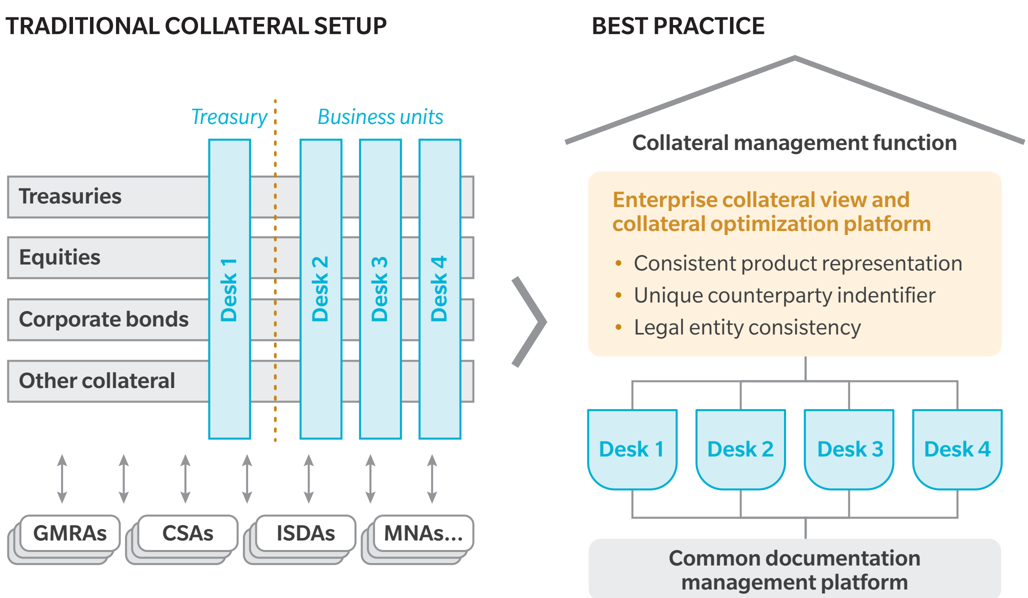
Firms may need to realize either liquidity proceeds or reduced capital requirements from balance sheet management and/or reorganization by taking advantage of the adage that "all assets have some liquidity value" and hence liquidating whatever is available. The ability to identify and quantify resources through strong collateral management practices should be viewed as a key business imperative in today's operating environment.

A CONCEPTUAL FRAMEWORK

Traditional collateral management practices have often been siloed and de-centralized at the business unit level. Information on available collateral, location, existing encumbrance (if any), re-hypothecation status etc. was not transparent, consistent, or well communicated across functions. Collateral optimization opportunities across businesses, counterparties and clients were therefore not fully taken advantage of. An effective collateral management program must be built on a platform that supports:

- Enterprise wide view
- Central oversight committee and clearly articulated operating model
- Robust IT platform for data capture, analysis, and reporting
- Documentation of contracts terms with associated collateral linkages

Exhibit 5: Enterprise collateral management framework



Source: Oliver Wyman research and analysis

Such an environment allows for transparency into available collateral and allows for much more effective and timely usage as well as forecasting capabilities, while also streamlining costs and reducing operational risks.

CONCLUSION

The need for strong collateral management capabilities is dictated by the:

- Many and varied collateral demands that exist within diversified financial institutions
- Potential overlapping needs for the limited assets available
- Imperative of robust risk management practices

To support business needs and risk management objectives, an enterprise-wide approach is required, providing transparent, granular information on a real-time basis. At many institutions, collateral-related processes and systems remain fragmented, which is sub-optimal in terms of both risk management and profitability. Executives at financial institutions should critically assess current collateral capabilities to ensure that tools and processes are fit-for-purpose in order to enable efficient, effective, and risk-aware management of critical business operations.

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