TECHNOLOGY

Mastering data and technology challenges will be critical in determining whether firms survive and thrive.

By Martin Seagroatt, Marketing Director, 4sight Financial Software

Managing the new collateral ecosystem

Collateral management has always been evolving, but the pace of change is now increasing rapidly. The sheer breadth and depth of new regulations and differences across jurisdictions are creating immense challenges for both the buy side and sell side. At the same time, technological and market driven solutions are offering new and more efficient ways to execute derivatives.

Simply digesting the scope and impacts of new rules is a mammoth task. Defining target operating models and realigning business processes adds further pressure. Choosing best of breed technology solutions and service providers also requires due diligence and detailed selection processes.

The main drivers of this market evolution are the mandatory clearing of standardized derivatives,

IOSCO rules specifying exchange of two-way initial margin for non-cleared derivatives and Basel III, with the resulting increased demand for high quality liquid assets (HQLA) with term funding.

Not surprisingly, the challenges differ for buy side and sell side firms. In addition, market infrastructure providers such as Central Securities Depositories (CSDs) are modifying the services they offer and launching new solutions in order to upgrade the plumbing the system desperately requires to meet the new collateral flows.

New rules are also creating greater inter-

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Buy side challenges	Details
Managing more complex margining processes	• Exchange of initial margin and variation margin • More frequent margin calls • Increased collateral movements • Automation of manual processes for margin calls
Sourcing eligible collateral for CCP margining	• Modelling CCP eligibility and concentration schedules • Matching maturity of funding with collateral needs • Collateral upgrade/transformation trades • Collateral optimization • Managing non-cash collateral
Forecasting future collateral needs	• Modelling, verifying and forecasting CCP initial margin calculations
Implementing technology systems	• Buy, build or outsource decisions • Due diligence in selecting providers • Bringing expertise in house

SOURCE: 4SIGHT FINANCIAL SOFTWARE

dependencies between the buy side, sell side, and market infrastructure providers. This sees the integration of the various members of the collateral ecosystem become more vital to survival for all market participants, as conditions become tougher and collateral demand increases. It is all about unlocking pools of high quality liquid assets and mobilising them to the right place at the right time, at low cost and with minimal friction.

Buy side challenges

In addition to selecting clearing brokers and CCPs, the buy side now have to deal with more complex margining processes. The CCP margining model requires more frequent margin calls (often intraday) and an estimated 500% to 1000% increase in collateral movements (Source: DTCC Whitepaper Jan 2014: Trends, Risks and Opportunities in Collateral Management). Bilateral trades will also see more stringent margin requirements.

Previously, margining derivatives was relatively simple for the buy side, often with no exchange of initial margin. Variation margin calls were infrequent and often on a weekly or even monthly basis. Many firms used spreadsheets for collateral management, with little need for automation.

On top of the greater number of collateral calls, there is also a lack of standardization of margin processes used by each CCP/clearing broker. Most firms on the buy side are trading with multiple brokers and various CCPs. This creates a need to model margining workflow for each one in turn. Trade reporting to repositories adds further complexity, with some brokers offering delegated reporting, and others preferring the end client to manage this.

All of this added complexity means that for any firm collateralising more than a handful of agreements, using spreadsheets to support collateral operations is no longer a viable option.

Sourcing eligible collateral

Many firms on the buy side do not typically hold large quantities of the types of collateral required by CCPs. Holding excess cash for CCP margining is not a good strategy for many buy side firms due to low yields. These firms must now look at ways to source CCP eligible assets, while minimising the drag on fund performance. There are a number of solutions to this, including collateral transformation and collateral optimization.

Collateral transformation/upgrade trades allow the buy side firm to pledge less liquid, CCP ineligible assets to the provider of the upgrade (often a sell-side intermediary). The provider then exchanges these assets for CCP eligible collateral in the securities lending and repo markets.

While collateral transformation trades appear to offer a solution, they come at a cost for the buy side. Sell-side firms must factor in their increasing costs due to balance sheet and liquidity requirements. It is usually far cheaper for the buy side firm to optimize its internal inventory first in order to free up CCP eligible collateral. Only then does the firm need to look at paying for upgrade trades to make up any shortfall.

Technology solutions to identify and optimize internal inventory can therefore provide major benefits to the buy side.

In addition, there are questions around the durability of funding for the buy side. Collateralising a long-dated swap with a CCP (indirectly) through the shorter-term repo and securities lending markets results in a large maturity mismatch. The buy side could find collateral upgrade trades unwound during times of market disruption leading to serious problems.

This requires the buy side to think carefully about rollover risk and how they can find stable sources of collateral for their CCP margin needs.

Anticipating collateral needs

Analytics solutions to replicate CCP initial margin calculations provide a useful tool for the buy side. This allows the firm to verify the CCP's margin calls, but also to forecast future collateral requirements. Being able to anticipate collateral needs reduces the likelihood of sudden unexpected margin calls, resulting in higher costs sourcing the requisite collateral. Many vendors and CCPs themselves are now offering these calculation tools.

A move to non-cash collateral also creates added complexity in lifecycle processing (for example managing corporate actions), compared with the simplicity of posting cash collateral. IT systems that can automate these manually intensive processes can reduce some of the operational risks and burdens.

Reverse Collateral Upgrades

For those on the buy side holding large quantities of high quality liquid assets (HQLA), the new environment provides an opportunity to open up new revenue streams. This requires identifying the firm's own collateral needs for hedging. From there the firm can allocate any excess collateral for lending in the securities lending and repo markets, or into reverse collateral upgrade trades, accepting in different collateral and earning a fee.

These 'reverse collateral upgrade' trades can provide a useful source of yield enhancement, helping the firm to generate alpha. For lenders who are also able to lend for longer terms (31 days plus), more attractive returns are on offer, as borrowers look to lock in supply of HQLA to meet Basel III Liquidity Coverage Ratios (LCR) and other regulations.

Noticeable benchmarks in the duration of trades are 31 days, 90 days and even multi-year, depending on the regulatory requirement faced by the counterpart. Although longer dated trades can offer significant pickup in the fees that can be earned, they require both buy-side and sell-side firms to be able to substitute collateral. This requires systems capable of effectively tracking these movements and handling inventory considerations, whilst keeping the operational burden to a minimum.

The ability to clearly see available inventory across all funds and identify unencumbered LCR eligible collateral that can be freed up for lending opportunities also requires an investment in technology systems.

Buy, Build or Outsource

The added complexity of collateral management for both cleared and bilateral trades is leading to difficult decisions for the buy side.

This includes working out which parts of the process to manage internally and what to outsource. It makes sense to outsource some components of the collateral process, although this comes at a cost.

For firms that are prepared to invest in staff, expertise and technology, managing in-house can provide greater control and scalability. Collateral management can become a core competency, moving beyond covering margin calls to provide expertise in total costs to hedge and additional benefits from carrying certain types of assets. This enables the firm to differentiate itself and improve fund performance through a more tailored approach to the way the firm carries out its margining activities.

Sell side challenges

If the buy side are facing huge upheaval, the incoming regulatory regimes are creating enormous new cost pressures for the sell side. Sell side firms are now carrying out a wholesale re-evaluation of business models, trading strategies and technology solutions as a result.

The table below details some of the key challenges facing the sell side around the collateral management process (in no particular order of priority):

One of the most difficult challenges for the sell side involves centralising the collateral function across geographical locations and business lines (e.g. securities lending, repo, derivatives). This provides numerous benefits, particularly as it allows the firm to view its entire collateral inventory and exposures in one system.

It is easier to meet margin calls, as the firm has a clear view of its global inventory in one place. Risk Managers can more clearly identify sources of exposures with all counterparties, across products and any additional credit risk taken in the margin or collateral transformation processes. This can help when complying with large exposure limits under Dodd Frank and the Basel III rules. It also enables the firm to monitor the composition and concentration risks of its collateral portfolio more effectively.

For firms that are prepared to invest in staff, expertise and technology, managing in-house can provide greater control and scalability

However, for the sell side, consolidating the collateral function and creating a central collateral desk is a significant undertaking. This is particularly the case for larger firms with many counterparties, extensive collateral portfolios and multiple funds and sub-funds to consider. It

Sell side challenges	Details
Centralising the collateral function	• Structure • Data mapping • Technology • Process change
Collateral Optimization	• Collateral Pricing • Opportunity Costs • Algorithm development
Obtaining Basel III Liquidity Coverage Ratio eligible assets at term	• Eligibility Mapping • Optimising liquidity coverage with cheapest to deliver assets
Collateral Transformation Services	• Measuring balance sheet consumption and other costs • Accurate pricing of services
Client Clearing Services	• Proliferation of CCP account segregation options • Delegated Reporting
Reduced collateral velocity	• Limits on rehypothecation and greater tracking of collateral • CCP segregation of assets • New regulations around rehypothecation
Transaction Cost Analysis	• Collateral Costs and FVA • Capital charges and CVA • Balance sheet consumption

SOURCE: 4SIGHT FINANCIAL SOFTWARE

involves an investment in technology, although there are now vendors with experience of large-scale global inventory management and collateral centralization projects who can offer assistance.

Centralization also requires changes to business structure, processes and the roles of individual staff. There are difficult decisions around where the collateral function resides in the bank, whether with treasury, trading or as an independent function.

There are also incentives for beneficial owners holding high quality liquid assets to lend them out in exchange for less liquid assets in reverse collateral upgrade trades

While it is a major task, once the firm has centralized its collateral usage it is ready to begin optimising collateral.

Collateral Optimization

Basic collateral optimization allows the firm to give out the 'cheapest to deliver' assets to collateralize a given margin call. More advanced techniques can optimize the entire collateral portfolio across all counterparties in a non-linear fashion.

More advanced algorithms can help to squeeze additional basis point savings from collateral usage. However, they also require bespoke algorithms and significant processing power, due to the large numbers of possible outcomes. They are therefore not suitable for all firms.

Another major challenge lies in defining the true cost of collateral assets. It is possible to assign costs based on the prevailing repo rate for a given asset (adjusted by haircuts). However, accurately defining the opportunity cost of using an asset for one purpose rather than another is more complex. It involves a mature internal funds transfer pricing model and decisions around the constraints the firm is facing, such as funding, capital, balance sheet usage and Basel III liquidity coverage ratios.

Meeting the Liquidity Coverage Ratio

The Basel III Liquidity Coverage Ratio (LCR) is creating a need for covered sell side firms to bring in high quality liquid assets (HQLA) for terms of 31 days and longer. This is starting to drive demand for HQLA in the securities lending and repo markets from beneficial owners who are prepared to lend at longer terms.

To meet the LCR, many sell side firms are beginning to modify their eligibility and concentration schedules for received collateral to include only those assets that are LCR eligible. This ensures the firm brings in the right type of assets through natural trade flows. Technology systems that can automatically identify LCR eligible assets and assign them to the correct LCR pools are also necessary to comply with the LCR.

The Basel rules specify that firms must meet a minimum of 60% of the LCR with Level 1 Assets (the most liquid). The remaining 40% can be met with less liquid Level 2 assets (and in some cases Level 2b).

It therefore makes sense for firms to reduce the cost of meeting their LCR needs by allocating the cheapest to deliver assets possible to LCR coverage, while minimising unnecessary posting of Level 1 assets above the thresholds. This means LCR compliance becomes, in some respects, a collateral optimization problem.

Collateral Transformation

Collateral transformation is a service that sell side firms can provide to clients and offers a way to generate additional revenues. However, there is a balance sheet impact for the sell side firm providing the collateral upgrade in the securities finance markets.

Analytics tools that can identify balance

TECHNOLOGY

sheet consumption of the securities lending and repo legs of the upgrade can therefore help the sell side to price collateral swaps for clients. Measuring the balance sheet usage of an upgrade service allows the sell side to work out if the service is profitable. It can then determine which clients to offer upgrade services to, based on the overall P&L generated by that client or the fee the client is willing to pay.

Client Clearing Services

Client clearing offers a new revenue stream for the sell side; however, there are high costs involved. Running a client clearing business requires a significant investment in technology to cope with the more stringent demands. This includes greater frequencies of collateral movements, use of non-cash collateral and the proliferation of CCP account segregation options.

Delegated reporting of trades and collateral is another service that clearing brokers/FCM's can provide, although not all will offer this service. Recently a number of sell side firms have exited the client clearing business and this is no doubt due to the high cost base.

Reduced Rehypothecation

In the past, many sell side firms benefited from the ability to rehypothecate collateral received from clients and this provided a valuable source of low cost funding.

In the new environment, collateral is often locked up in segregated accounts at CCPs. Furthermore, regulators are also looking at new rules around how many times assets can be rehypothecated, along with client approvals for re-use and reporting on rehypothecation and collateral chains.

This will result in a reduced velocity of collateral and a need for technology solutions that can track individual securities and flag whether rehypothecation is permitted.

Transaction Cost Analysis

The firms on the sell side that can work out and minimize their true costs, and therefore price their services more aggressively, will be able to gain market share. This involves more detailed view on where costs are generated and by which services. From a collateral point of view, this means measuring an accurate collateral opportunity cost – for both pledging and receiving, as well as understanding the trade affect, balance-sheet or capital requirements impacts, and whether collateral assets re-usable.

High Velocity Collateral Flows

Market infrastructure providers such as CSDs, custodians and tri-party agents are currently in the process of rapidly upgrading the plumbing of the collateral ecosystem to support greater collateral flows. Interoperability between CSDs, custodians and triparties will allow easier movement of collateral between entities.

Initiatives such as Target2 Securities (T2S) to improve European cross border settlement will also unlock collateral pools and allow greater opportunities for optimization.

In the securities lending markets, agent lenders and custodians need to help beneficial owners to filter down availability of surplus HQLA and then have a means of broadcasting these availability files to borrowers who require them to meet liquidity buffers.

This will help to match supply of HQLA with demand. Of course, lenders must be prepared to lend at terms greater than 31 days in order for the funding source to meet the LCR requirements.

Risks

While the move towards greater collateralization of trading exposures reduces counterparty credit risk, it also creates new risks in the form of market and liquidity risk on the collateral exchanged and operational risk from increased collateral movements. If collateral transformation/upgrade trades become widespread then there is an argument that counterparty risk in the derivatives markets simply shifts to the repo markets.

There are also incentives for beneficial owners holding high quality liquid assets to lend them out in exchange for less liquid assets in reverse collateral upgrade trades. For those firms willing to undertake these types of trades, particularly for longer terms, there is a potential for higher fees (securities lending) or lower cash interest rates (repo). Once again, this could create new pockets of risk.

Finally, the widespread use of collateral optimization algorithms promotes giving out the lowest quality collateral counterparties will accept, on a systemic level. Firms therefore need to closely monitor collateral received and the concentration of assets in the portfolio.

All of this requires individual firms to be more aware of these risks and have appropriate technology systems in place to manage them.

Leaner and faster

As the operating environment becomes tougher for market participants, new rules should drive an industry wide shift toward a leaner, more efficient financial system with faster collateral flows, lower friction and greater automation.

The firms that will survive and even thrive in this new environment will be those that can use technology solutions to manage the increased operational burden and accurately quantify the costs and opportunities associated with collateral and margining considerations. The use of this data to drive business strategy, search for yield and price client services more aggressively will become a major distinguishing factor between firms.

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