SLT
SECURITIES**LENDING**TIMES

Annual**Report** 2014
Collateral Management

So It Flows

Where does collateral come from?

CCPs And Me
Want and need

Balance Sheet
Reacting to regulatory change

BCBS/IOSCO
The impact on collateral

Be The Best
Beneficial owners must stay informed

Light years ahead

Light travels at 186,000 miles per second. According to NASA, a traveller, moving at the speed of light, would circum-navigate the equator approximately 7.5 times in one second. That's fast.

The velocity of collateral—the speed at which it is pledged and re-pledged as it moves along a chain of financial intuitions—is much slower in comparison, but its assessment is a good indicator of market intuition about counterparty risk.

Manmohan Singh, an economist at the International Monetary Fund, used his collateral velocity calculation to find that, on average, collateral chains were longer in 2007 than in 2013. This could mean that worries about counterparty risk are higher now than they were before Lehman Brothers collapsed.

In an article that he adapted from his book, Collateral and Financial Plumbing, especially for Securities Lending Times, Singh writes: "With fewer trusted counterparties in the market owing to elevated counterparty risk, this leads to stranded liquidity pools, incomplete markets, idle collateral and shorter collateral chains, missed trades and deleveraging." Turn to p9 to see what he predicts will come next for the securities lending business.

Of course, the regulatory response to the financial crisis was to assume the worst about counterparty risk, and the likes of Basel III are requiring financial institutions to hold more capital on their balance sheets. James Slater, executive vice president and global head of securities finance at BNY Mellon, reveals which side is feeling the balance sheet squeeze the most. Turn to p14 to find out.

Securities finance is not afraid of change, and technology players are innovating to help financial institutions overcome counterparty risk, without losing out on returns. Gerard Denham of Eurex Clearing explains the unique characteristics of the Lending CCP on p24, while, on p30, Martin Seagroatt of 4sight Financial Software outlines the technology requirements for trading through one.

Finally, thanks go out to our sponsors, whose support continues to make this dedicated collateral management supplement a possibility. As ever, if you have any feedback, don't hesitate to drop us a line.

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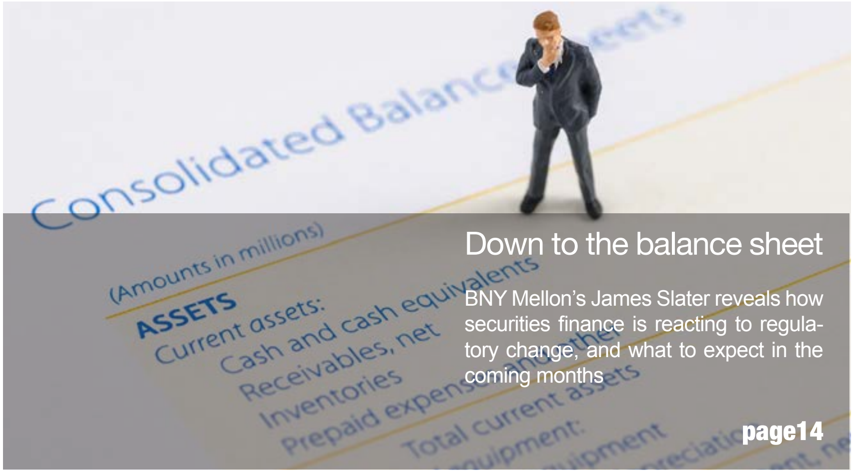
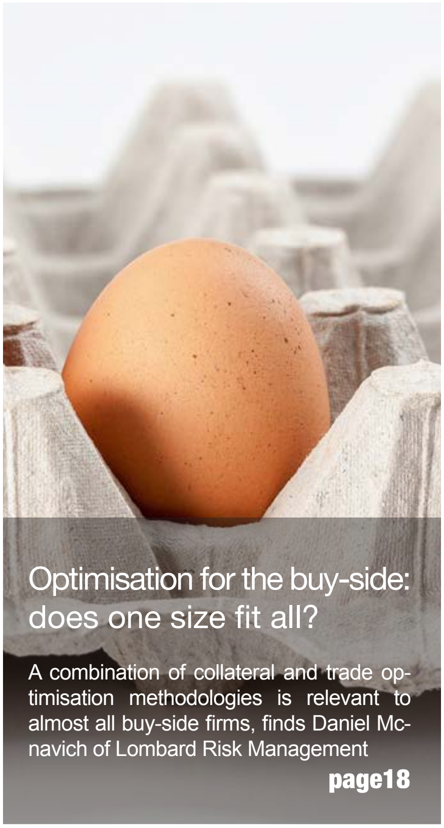
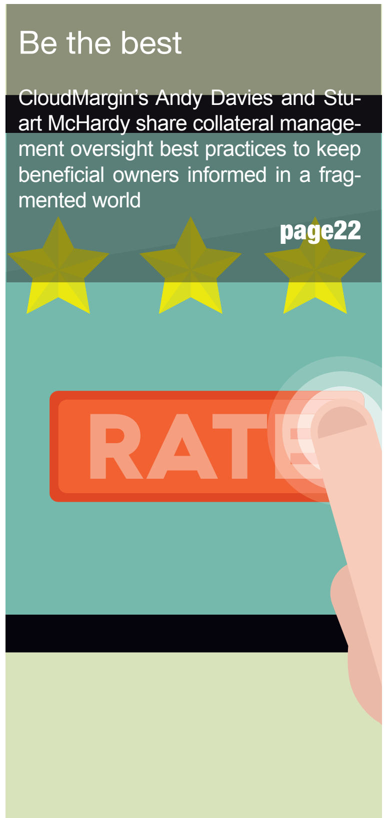


Consolidated Balance
(Amounts in millions)
ASSETS
Current assets:
Cash and cash equivalents
Receivables, net
Inventories
Total current assets





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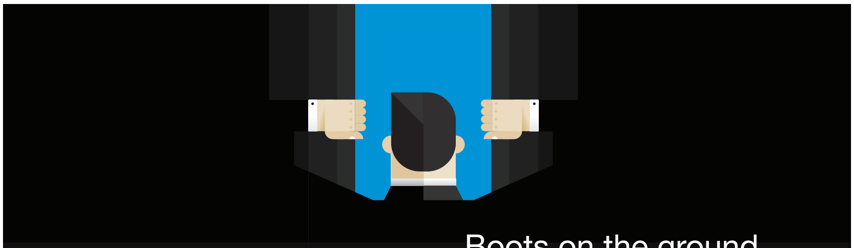
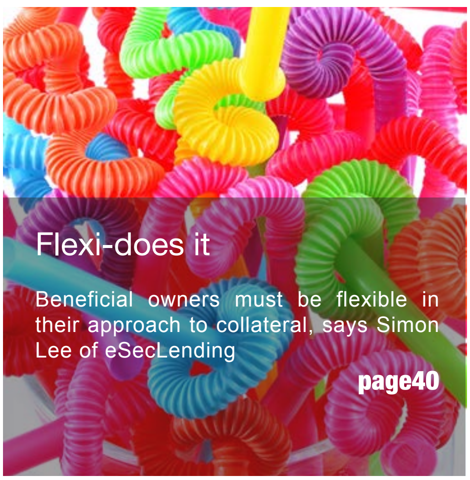




The role of securities lenders in the supply of (re-usable) collateral

Manmohan Singh of the International Monetary Fund summarises collateral reuse within securities finance

A great deal of short-term financing is generally extended by private agents against financial collateral. The collateral intermediation function is likely to become more important over time. We look at a new concept: collateral reuse (or velocity) in the market. Although there is large issuance of good collateral, very little reaches the market. We describe how to measure this reuse rate and why this metric is increasingly important for policymakers to understand, especially when there is a shortage of collateral.

In the global financial system, non-banks generally allow reuse of their collateral in lieu of other considerations. The key providers of (primary) collateral to the 'street' (or large banks/dealers) are:

- Hedge funds;
- Securities lenders (via custodians) on behalf of pension, insurers, official sector, etc; and
- Commercial banks that liaise with collateral dealers—this is small relative to the supply from hedge funds/securities lending.

We will focus on securities lenders that release collateral to augment returns at the request of clients (although hedge funds are an equally important source of collateral to dealers). The supply of pledged collateral is typically handled by the central collateral desk of dealers, which reuse the collateral to meet demand from the financial system. Such securities are reused as collateral against margin, etc. This collateral is used to obtain secured funding for dealers and is received in lieu of borrowing and/or other securities given to a client.

Major dealers active in the collateral industry include Goldman Sachs, Morgan Stanley, J.P. Morgan, Bank of America/Merrill Lynch and Citibank in the US. In Europe and elsewhere, important collateral dealers are Deutsche Bank, UBS, Barclays, Credit Suisse, Societe Generale, BNP Paribas, HSBC, Royal Bank of Scotland and Nomura. The hedge funds are the main supplier of such collateral as they need financing (and thus as a quid pro quo, they release collateral against such financing). The other key supply source is via securities lending, which provides collateralised short-term funding, just like repo.

In a repo, there is an outright sale of the securities accompanied by a specific price and date at which the securities will be bought back. On the other hand, securities lending transactions generally have no set end date and no set price. The beneficial owner can recall shares on loan at any time and the borrower can return the shares at any time. Thus, securities lending transactions are much more flexible than repos and thus are more conducive to covering shorts where the position's profitability relies on exact timing/tenor matching.

Furthermore, with respect to legal rights, securities lending is effectively identical to repo. For example, both transactions include full transfer of title. The asset management complex, which includes pension, insurers and official sector accounts such as sovereign wealth funds and central banks, is a rich source of collateral deposits. The securities they hold are continuously reinvested to maximise returns over their maturity tenor.

We use the Risk Management Association (RMA) as the main data source (see Table 1), which includes only primary sources of securities lending from clients such as pension funds, insurers, official sector accounts and some corporate/money funds. The RMA's data includes the largest custodians such as Bank of New York, State Street and JPMorgan (another data source, Markit Securities Finance, shows larger numbers, as it also includes a significant part of secondary market activity).

The decline in the first row of Table 1 needs some explanation. The US regulatory rules that guide borrowers permit only cash, and certain government securities. Hence, the US developed as a cash collateral business, where the lending agent lends client assets versus cash and then reinvests the cash according to the client's direction in very short-term reinvestments. Outside the US (the UK, for instance), regulatory rules permit certain types of non-cash collateral that are readily available (such as FTSE equities).

In the aftermath of Lehman Brothers and the liquidity crisis, borrowers in the US borrowed more hard-to-borrow stocks (specials), and less general collateral. This explains the decline evident in the table. Non-cash collateral deals (ie, collateral for collateral) effectively provide the lenders with a hard fee for the deal, and it does not give temporary cash to generate excess returns by creating a short-term money-market book.

The risk aversion due to counterparty risk since Lehman Brothers has led many pension and insurance funds' official accounts not to let go their collateral for incremental returns. These figures are not rebounding as per end-2013 financial statements of banks.

Methodology for calculating the velocity of collateral

Our understanding is that there are 10 to 15 large banks active in collateral management globally. We may have missed a couple of banks but believe we have picked up more than 90 percent of the pledged collateral that is received from primary sources, such as hedge funds, pension funds and insurers, and official accounts.

We compare data between 2007 and 2013 to see how this market has changed from before Lehman Brothers's bankruptcy through the financial crisis, which straddles monetary policy experiments. As a starting point, we take the total collateral received by the banks

Figure 1: The sources and uses of collateral (2007, 2010-2013)

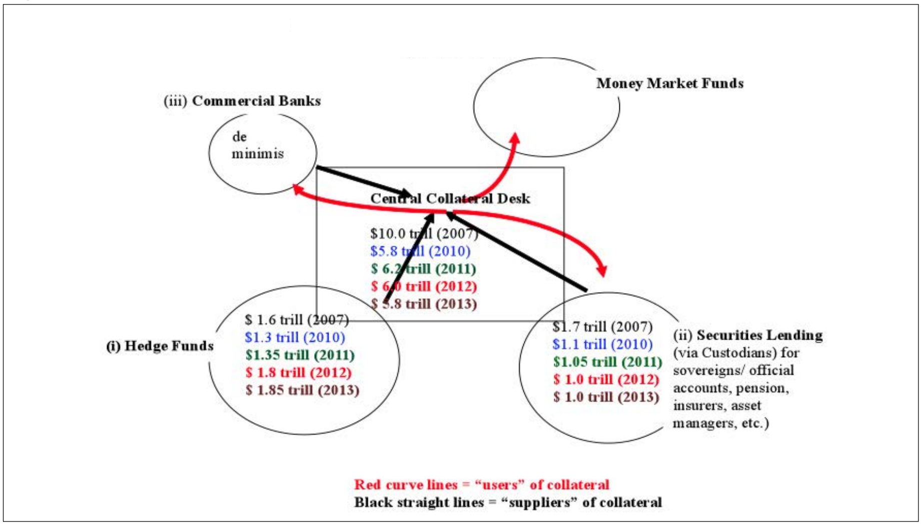


Table 1: Securities lending (2007 to 2013)

Collateral received from pension funds, insurers, official accounts, etc (USD, billions)	2007	2008	2009	2010	2011	2012	2013
Securities lending versus cash collateral	1,209	935	875	818	687	620	669
Securities lending versus noncash collateral	486	251	270	301	370	378	338
Total securities lending	**1,695**	**1,187**	**1,146**	**1,119**	**1,058**	**998**	**1,008**

Source: RMA

Table 2: Sources of pledged collateral, velocity, and collateral (2007 and 2010–13)
(All data in US trillions; velocity in units)

	Sources				
Year	Hedge funds	Others	Total	Volume of secured operations	Velocity
2007	1.7	1.7	3.4	10.0	3.0
2010	1.3	1.1	2.4	5.8	2.4
2011	1.3	1.05	2.35	6.1	2.5
2012	1.8	1.0	2.8	6.0	2.2
2013	1.85	1.0	2.85	5.8	2.0

Sources: Risk Management Association and IMF staff estimates; see also Singh 2011

as of end-2007 (almost $10 trillion) and compare it to the primary sources of collateral (the two primary-source buckets identified in Figure 1, namely hedge funds and security lenders (on behalf of pension, insurers, official accounts etc)). The ratio of the total collateral received/primary sources of collateral is the velocity of collateral due to the intermediation by the dealers:

$$\text{Velocity of collateral} = \frac{\$\ 10\ \text{trillion}}{\$\ 3.3\ \text{trillion}} = \text{approx } 3$$

Collateral sources as of end-2013

Similarly, for 2013, total collateral from primary sources that could be repledged by the large dealers from hedge funds was $1.85 trillion, plus $1 trillion via security lending operations of custodians on behalf of pension funds, insurers and official sector accounts, for a total of $2.8 trillion. The total collateral received by the 10 to 15 large banks was $5.8 trillion as of end-2013 (still sharply lower than the $10 trillion peak as of end-2007):

$$\text{Velocity of collateral} = \frac{\text{US\$5.8 trillion}}{\text{US\$2.85 trillion}} = \text{approx } 2.0$$

Table 2 provides a succinct summary of the sources of collateral, the total volume received by the large banks and the resultant velocity. The velocity is not an exact metric, but gives an idea of the length of the collateral chains in that year. So we can infer that, on average, the collateral chains were longer in 2007 than in 2013. The intuition is that counterparty risk before Lehman Brothers was minimal but has changed since then (due to some central bank's quantitative easing policies, the ongoing European crisis, etc).

With fewer trusted counterparties in the market owing to elevated counterparty risk, this leads to stranded liquidity pools, incomplete markets, idle collateral and shorter collateral chains, missed trades and deleveraging.

Going forward

So far, the demand and supply for financial collateral by non-banks (and other commercial banks) is intermediated by the large 10 to 15 banks/dealers that have a niche in this cross-border collateral market.

However, as regulations kick in, some of the non-banks can develop in-house teams to deal with central counterparties, or CCPs, directly: Allianz, La Mondiale, Scottish Widows, SNS Real, Friends Life, VPV, Sun Life, etc. These may consider liaising directly with banks (and not via agents/custodians). To the extent collateral moves skirt the large 10 to 15 bank's collateral desk, the reuse rate will be harder to determine.

Similarly, central banks may become large conduits and alleviate collateral shortage to non-banks by supplying high quality liquid assets either explicitly (eg, Reserve Bank of Australia) or, under the rubric of monetary policy (US's Federal Reserve)—see inserted Box 1.

Anecdotal evidence suggests (counter-intuitively) that despite collateral constraints, securities lending business may not take off due to forthcoming regulations that will limit balance sheet space of the 10 to 15 dealers to undertake collateral transactions (eg, collateral transformation, repo, etc.), and increased supply of collateral from some central banks as monetary policy rates leave the zero lower bound.

Pre-Lehman Brothers, dealers would oblige the custodians that would push out general collateral (eg, IBM or Merck equities) along with specials that the dealers really wanted—often custodians would set a general collateral/special ratio as high as 5:1 or 10:1! There was no balance sheet constraint. However, it should be noted that collateral from hedge funds to dealers has bounced back to levels seen before Lehman Brothers, largely because they have preferred access to dealer balance sheet as margins are higher relative to securities lending business. **SLT**

Manmohan Singh is an economist at the International Monetary Fund.
This article was taken from his book,
Collateral and Financial Plumbing

Box 1: The 10 to 15 banks at the core of financial plumbing

Let the financial system that includes banks, hedge funds, pension funds, insurers, sovereign wealth funds, etc, be represented by A to Z. Only a handful (say XYZ) can move financial collateral across borders. XYZ also happen to be the large 10 to 15 banks discussed in this article. The rest of the financial system from A to W that demand and supply collateral need to connect with each other via XYZ. Entry into this market is not prohibited but extremely expensive and difficult, as we need a global footprint and global clients (and the acumen and sophistication to move and price liquid securities very quickly—in seconds sometimes).

For example, a Chilean pension fund may want Indonesian bonds for six months, and W (a hedge fund in Hong Kong) may be holding these bonds and willing to rent out to A for six months for a small fee. But W does not know there is demand from A. Only via XZY can A connect to W. Since XYZ sit in the middle of the web, they have the ability to optimise in ways that give them an advantage—the Indonesian bonds may come into their possession because they've loaned W money, or because they have a derivative with W, or through a security lending agreement.

Such securities that need to move cross border under a repo or security lending or related transaction need to be legally perfected (and herein legal perfection entails rules such as title transfer and rehypothecation). Similarly for over-the-counter derivative margins, there is an International Swaps and Derivatives Association master agreement. For prime brokerage/hedge fund collateral, there is a similar master agreement that resonates easily between XYZ.

Thus, it is not easy for all real-economy collateral to be able to move across borders. This market for bilateral pledged collateral is the only true market that prices at mark-to-market all liquid securities (bonds plus equities).

Given that collateral is in short supply (as reflected by repo rates), either:
Velocity of collateral comes back—this is a task that only XYZ can handle in bulk if more good collateral is sourced through them. However, regulatory proposals such as leverage and liquidity ratio may result in balance-sheet constraints for XYZ to do collateral transformation, repo etc; or
Central banks can make balance-sheet room for XYZ (as with the Federal Reserve's reverse repo programme since September 2013). Or, there is the Reserve Bank of Australia (RBA) route, which will provide good collateral to meet the increase demand when regulations kick in—this will be market-based. The RBA will not issue new debt to meet this demand (unlike proposals in academic circles—Gourinchas, Jeanne 2012). The European Central Bank type of approach also helps but collateral pricing may not be market-based.

Down to the balance sheet

BNY Mellon’s James Slater reveals how securities finance is reacting to regulatory change, and what to expect in the coming months

MARK DUGDALE REPORTS

Which side of the business are regulations affecting the most at the moment?

While there is still some significant regulatory uncertainty with respect to single counterparty credit limits, the net stable funding ratio, and financial transaction taxes, we do have clarity around capital, leverage and the liquidity coverage ratio and those items are beginning to influence behaviour in the securities lending market.

Currently, it appears that the demand side, specifically the borrowers, is the most affected by these changes. The leverage ratio, originally designed to be a back-stop to the capital requirements, has now become the constraining measure for most of the large dealers. As a result, many of these firms are reducing their overall balance sheet, looking to structure transactions that are balance sheet friendly, and reviewing clients and business lines to make sure they provide sufficient return on leverage capital.

This is also driving an increase in lending transactions collateralised by securities. This puts increased emphasis on collateral flexibility for agent lenders and beneficial owners as greater collateral flexibility will drive increased utilisation.

Capital requirements and the leverage ratio are also causing an increase in interest around the utilisation of central counterparties (CCPs). This has always been a topic of conversation in the securities finance space, but now it is getting more serious attention from market participants. It seems almost every CCP has a committee or group working on potential solutions for the securities finance market.

The liquidity coverage ratio is the other requirement that is changing behavior of the dealers. This ratio requires large dealers to maintain a sufficient supply of high quality liquid assets to meet potential net outflows of liquidity over a 30-day stress scenario. This is driving an increased demand for term financing structures on the cash collateral reinvestment side of our business. It is also creating demand for borrowing high-quality liquid assets such as treasuries for term against other types of security collateral. We expect to see this continue, which may contribute to wider spreads and increased lending and reinvestment opportunities for our clients that can engage in these transactions.

What about agent lenders and the buy side?

The calculation methodologies for securities finance transactions under the single counterparty credit limits of Dodd-Frank Section 165(e) are not yet finalised. As currently proposed, the regulation creates a calculation of credit exposure that far exceeds the actual economic risk inherent to these types of transactions.

Also, the calculations do not recognise the benefits of correlation between the loan and the collateral portfolios. If adopted as proposed, this would have a significant impact on the buy side as it could limit the ability of agent lenders to provide the traditional counterparty default indemnification that many clients require to participate in the lending market.

We are working with regulators and other market participants to recommend alternative calculation methodologies that achieve the regulators' goals and preserve the ability to continue to provide counterparty default indemnification. In addition, we are also expanding our approved counterparties to create more diversification and developing new methods and structures to distribute our clients' assets.

The proposed financial transaction tax in Europe could also affect beneficial owners and agent lenders. The tax as initially proposed includes securities lending and repo transactions. Also, the extra-territorial nature of the tax could impact many transactions outside of the specific European jurisdictions.

How has 2014 shaped up for securities finance business?

We are already half way through the year and it's been good so far. BNY Mellon's investment service fees totalled $1.7 billion in Q2 2014, a 1 percent increase over the previous quarter, partly thanks to higher securities lending revenue. State Street and Northern Trust did similarly well. No one region stands out as the main contributor to that success, although from an asset class perspective, US equities have been particularly strong this year, which partly also benefited from our continued investment in new trading tools or enhancements to existing technology to capitalise on that trend. We expect heightened mergers and acquisitions activity to contribute to a solid end to 2014.

Also positive to note is beneficial owners that suspended their securities lending programmes around the financial crisis continue to return to securities finance. BNY Mellon welcomed back a decent sized plan in June 2014, and we are seeing between 10 and 15 return every year. We have also seen many beneficial owners that reined in risk post the financial crisis adjust their programme or collateral guidelines to increase opportunity.

How are beneficial owners treating securities finance and collateral management in light of a collateral squeeze through regulation?

Beneficial owners continue to be interested in the intrinsic value of the business and understand both how essential the liquidity it provides is and also the other benefits to the financial markets. Changing regulation is not a concern but more a curiosity on how it will affect future revenue streams and opportunity. I believe this is in part because they see the regulators efforts to reduce systemic risk and make financial markets safer as being in line with their interests.

Many beneficial owners have or are re-visiting their programme guidelines, expanding their programmes and/or expanding collateral guidelines. Europe has always been more open to non-cash collateral in general, but now US beneficial owners are more open to accepting a wider variety of non-cash, including equities. They see how the new regulations are changing the markets and where they are creating new opportunities.

Many beneficial owners are also becoming much more focused on their own liquidity and collateral needs as the new rules for central clearing of derivatives are creating the need to post initial and variable margin to support this activity. Securities lending can play an important role in helping beneficial owners manage their collateral and liquidity needs.

What can we expect from 2015?

I am optimistic that 2015 will be a good year for securities lending. It's important not to measure today against 2007 and 2008, as those were anomalous record highs right before the crisis. It's more appropriate to compare against 2006 and earlier, which were much closer to where we are now. Two thousand and thirteen was very much about getting back on track, and 2014 has been solid, so I expect 2015 will see us continue to get stronger.

In 2015, the borrower side will continue to see change. The providers or banks that can optimise from a capital and balance sheet perspective and also accommodate borrower demand for collateral will do the best in this new environment. SLT

Collateral evolution

Collateralisation trends continue to evolve, finds Tim Keenen of BondLend

Whether collateral efficiency, optimisation or upgrade, the securities finance markets give rise to the use of collateral in a number of ways. In light of increased capital charges, reduced leverage and decreasing netting opportunities as a result of changing regulations, the way firms use collateral continues to evolve.

Within securities finance exists a general collateral market as well as a specials, or intrinsic value, market. The general collateral market allows dealers to effectively fund their long positions with cash investors looking for a safe, collateralised investment alternative. The risk reduction in these types of transactions is typically handled by the haircut to the price of the underlying collateral. Yet although dealers will have high-grade collateral to fund, they will also find themselves with less-liquid collateral that needs to be financed, too.

Many cash investors will look at a range of collateral types to enjoy an increase in yield on their investments as they go down the credit curve. Risk is mitigated by imposing higher haircuts on the lesser-credit-quality collateral. This dynamic allows a dealer to fund the spectrum of securities while the cash investor enjoys yield enhancement and risk mitigation through margin.

Another efficient way to fund is in the securities finance specials market. Traditionally, specials borrowed and loaned in the securities finance market have been collateralised by cash. However, over the last several years, we have seen an increase in the desire by dealers to provide non-cash collateral along with agent lenders willing to accept it.

Across securities finance transactions globally, we have seen increasing demand on EquiLend and BondLend among lenders to accept non-cash collateral from their broker-dealer trading counterparts. DataLend's aggregated market data affirms this as well, depicting the growth in the use of non-cash collateral over the past year (see Figure 1).

In the fixed income market, these trades are known as bonds borrowed transactions, where a lender is willing to lend a bond and take another bond as collateral. The equity equivalent is an equity-for-equity transaction, where lenders will lend an equity and accept another equity as collateral. These trade types—often collectively referred to as collateral upgrade trades—are nothing new to securities finance market participants. But the steady increase in the use of non-cash collateral may be a sign that their use is on the rise.

Another possible explanation for this changing dynamic is the fact that broker-dealers have been obliged to pare down their balance sheets under new and upcoming regulations. One route to accomplish this is by broker-dealers funding their borrows with non-cash rather than cash collateral.

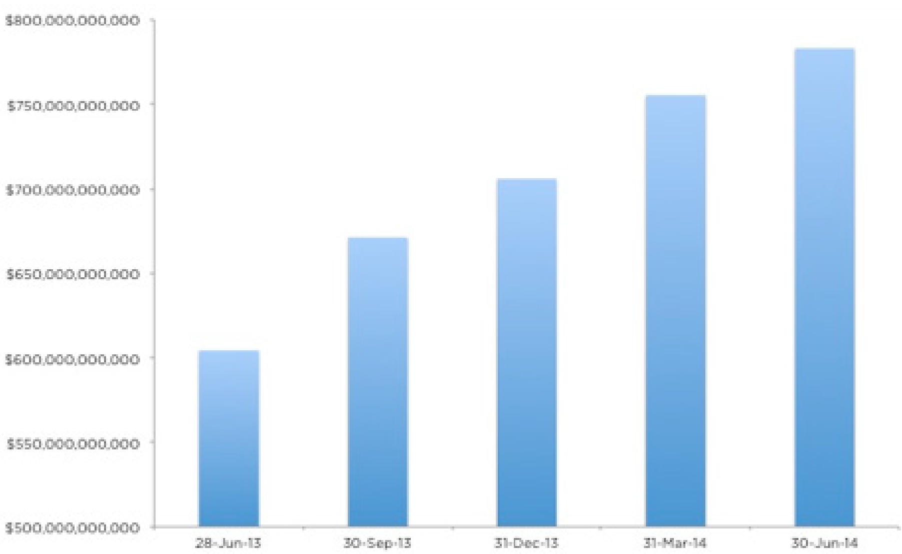
As for lenders, their increased willingness to accept non-cash collateral may be due to potential cash market volatility. Liquidity in the cash markets is not always sufficiently available, particularly in volatile market environments. As a result, lenders may be seeking other types of collateral, which could be less susceptible to such volatility, to facilitate their lending.

These non-cash collateral types include the range of instruments, with varying credit quality, mentioned above. As a borrow is executed against non-cash collateral, this mitigates the need for a rebate because the payment becomes a fee from the borrowing broker-dealer. This allows the lender to avoid market fluctuations in rates on cash reinvestments that can occur in some market environments. By imposing a fee, market participants know exactly what their earnings will be and are not dependent on a specific cash reinvestment rate.

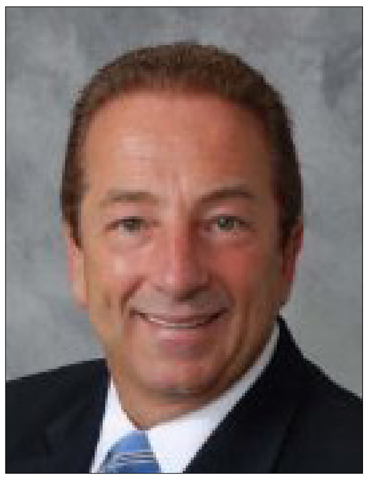
This form of collateralisation has particular appeal to broker-dealers, too. It allows broker-dealers to use their long inventory specifically to collateralise their borrowing needs. The use of non-cash collateral by broker-dealers allows them to efficiently optimise their long portfolios while still effectively borrowing or financing their short positions.

As collateral management and optimisation become increasingly important for institutions around the globe, we expect to see collateralisation trends continue to evolve in the securities finance market. **SLT**

Figure 1: Growth of non-cash collateral



Source: DataLend



Tim Keenen
Global product manager
BondLend

Optimisation for the buy-side: does one size fit all?

A combination of collateral and trade optimisation methodologies is relevant to almost all buy-side firms, finds Daniel McNavich of Lombard Risk Management

It is our belief at Lombard Risk that optimisation solutions must have the ability to be tailored to each segment a buy-side firm may belong to. As it stands today, the buy-side currently consists of many different market segments and focuses on the businesses and strategies that are core to such segments. These include:

- Insurance companies;
- Investment managers;
- Asset managers (hedge funds);
- Pension funds; and
- Other (government agencies).

Optimisation drivers and priorities will vary depending on the size, strategy, and legality of pooling assets across multiple entities/funds. Optimisation and all its meanings will likely lead to several different approaches as end user goals are established and pursued. Core collateral optimisation offerings are becoming well understood in the market place today with the introduction of mandated centrally cleared derivatives opening up the largest market where it concerns the buy side. Firms are now exploring trade optimisation 'What If Calculators' in conjunction with core collateral optimisation offerings as a single combined solution to best handle pre/post trade lifecycle events.

What steps will you take? What are your goals for optimisation in the future?

A buy-side firm must set attainable goals as to what it wants to accomplish. Understanding which opportunities are available to maximise efficiencies, increase savings, and drive added revenue opportunities are paramount to each firm. Collateral optimisation strategies for consideration may be pursued separately or in conjunction with trade optimisation. What If Calculations scenarios—the selected approach will be an important factor in how firms realise the highest benefit against their investment. Some strategic options for consideration are:

- A front office solution to enhance trading/lending of assets;
- An operational solution that seeks to efficiently manage asset inventories against outgoing margin calls;
- A single solution that adequately meets both front office and operational needs together; and
- The ability to run 'What If' trade scenarios across futures commission merchants (FCMs) and derivatives clearing organisations (DCOs) to enhance liquidity returns.

Which type of optimisation will benefit your business the most?

Trade optimisation—What If Calculators for centrally cleared derivatives

Trade optimisation or What If IM (initial margin) calculations on a pre-execution basis will prove to service all buy-side participating firms. With portfolio compression at its core and real time results, firms can clear a trade with pre-selected FCMs and DCOs by eligible trade types and gain a return of much needed liquidity by reducing IM costs against the DCOs.

This is a not a new concept as there are different What If Calculators on the market today offered by FCMs, collateral service providers, and others. These calculators are available for clients that hold these relationships, not all firms hold these affiliations, plus few buy-side firms have a single application/platform that they can host and control within their own firewalls.

Buy-side firms require visibility across all their chosen FCMs and DCOs in order to decide, at any given point, which FCM and eligible clearinghouse to best place a trade. Calculation results and IM cost savings will be instantaneous as traders look to execute their trades, real time, in the marketplace.

Strict ordering of assets (the 'waterfall' approach)

This type of collateral optimisation is ideal for managing a firm's assets to satisfy firm-wide margin requirements with the best available eligible assets according to documented terms. More mid- to smaller-sized buy-side firms are adopting this approach to improve collateral allocations and achieve cost savings in their collateral, liquidity and optimisation programmes.

It is also the most easily deployed collateral optimisation solution where assets are generally ranked and grouped via a rules engine that is controlled by an end user. These rules can be created and calibrated daily, are usually flexible in nature, and therefore results are the easiest to review/audit by the end users in correlation with established liquidity goals.

Advanced algorithms for collateral optimisation

These solutions tend to be more complex and have been primarily created to solve the needs of larger firms, albeit the calculations often imposed on the user lack the functional and technical configuration capabilities required to meet large firm individual cost models. Some example requirements associated with this liquidity solution model are:

- Funding costs associated with firm-held assets;
- A deep pool of eligible assets across the liquidity spectrum, a mix of several collateral/business silos, and the possibility of one or more legal entities in the calculation; and
- The ability to bring all associated business lines, agreements, exposures, and core constraint data into one single, highly configurable location in order to achieve improved results.

Who's ready? Is it time to rally the troops?

Some industry articles seem to suggest that buy-side firms aren't ready and are just waiting to see what sell-side broker-dealers do with regard to optimisation. Here is where you have to stop to ask yourself a question: are sell-side broker-dealers looking at implementing combined collateral/trade optimisation solutions for your benefit?

"Where trade optimisation is concerned, What If Calculators are a solution that all buy-side segments, and many service providers, are seeking in one central location, combined with methodologies supporting collateral optimisation"

FCMs and other collateral service providers might provide you part of the solution. Depending on your relationships, you might have some collateral/trade optimisation solutions in silos on broker-dealer/service provider web portals. It is here that you then have to ask: are they seeing enough of my business to meet my needs?

A combination of collateral and trade optimisation methodologies is relevant to almost all buy-side firms. Isn't it time for the buy-side to control its own liquidity destiny? Isn't it time to focus on what you need to do in order to deal with the consequences (intended and unintended) of global regulatory reform?

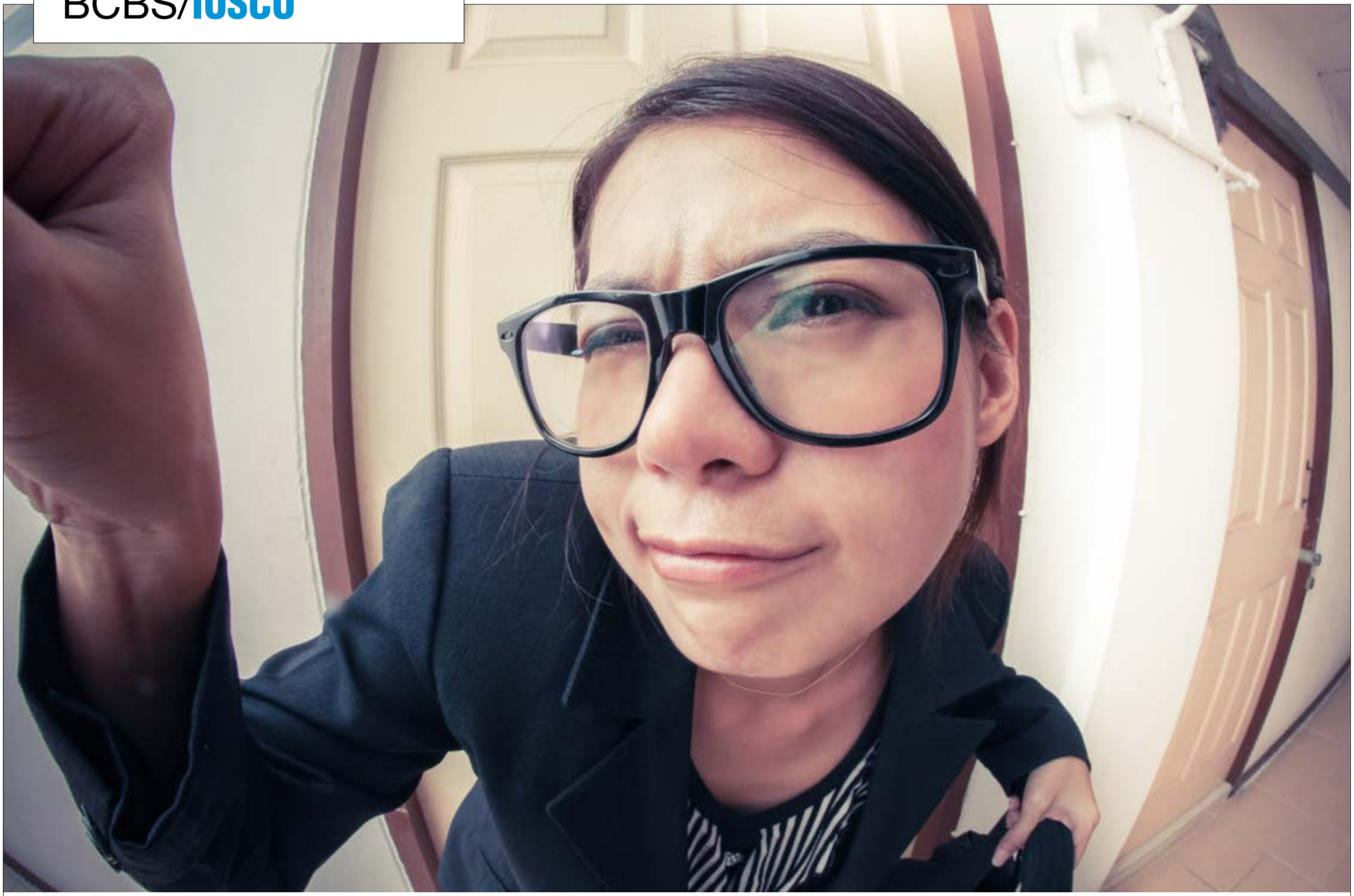
If you've been sitting on the side-lines, or perhaps implemented fragmented and inefficient solutions, this is as good a time as any to review your goals, assess previously implemented solutions, and make the sound decision to take control of your own optimisation destiny.

Our approach has always been to design our solutions to best meet our client's needs—where ease of use and advanced configurability are core in our offerings. Lombard Risk COLLINE's strength in collateral optimisation focuses on its flexible and configurable optimisation engine, which in turn drives our fully automated decision making process of which assets to allocate—and when to best allocate them—across collateral silos and/or internal firm business lines.

It is our nature to be in the marketplace every day where we listen to and gather a great deal of feedback from our buy-side clients. As a result, we see larger firms such as insurance companies and investment managers commonly seeking more complex collateral optimisation solutions. It's these institutions that seek unique cost models that provide them the flexibility to write their own algorithms. Smaller asset management firms, and some service providers/administrators, are generally seeking less sophisticated models to meet their collateral optimisation needs. Where trade optimisation is concerned, What If Calculators are a solution that all buy-side segments, and many service providers, are seeking in one central location, combined with methodologies supporting collateral optimisation.

It is Lombard Risk's strategy to provide clients with one solution that combines collateral and trade optimisation What If solutions on a single platform. COLLINE's design is as a fully configurable collateral/trade optimisation solution that is completely integrated with its collateral workflow and easily compatible with upstream client proprietary trading/OMS systems. There are no gimmicks here—it will not take you to a silo or different standalone systems to achieve desired results. It is simply one compatible technology stack that is deployed based on our principles around ease of use and advanced configurability capabilities, and it is always controlled by our customer's needs and their goals for the core business they focus on every day. **SLT**

Daniel McNavich
Head of collateral management pre-sales
Lombard Risk



Knocking on the door

SunGard's Alex Soane assesses the possible impact of BCBS/IOSCO on collateral

First it was Messrs Dodd and Frank and the European Market Infrastructure Regulation that brought in sweeping regulatory reform across the major markets. Later it became apparent that non-standard trades, not subject to mandatory clearing, still posed risk. Given that anything uncleared is by definition non-standard, it could be argued that this is where the majority of risk is situated.

As a result, the Basel Committee on Banking Supervision (BCBS) and the International Organization of Securities Commissions (IOSCO) proposed a plan to further mitigate the risk of non-cleared derivatives. In September 2013, they released the final recommendations for margin requirements for non-centrally cleared derivatives and the market began to prepare for yet another regulatory challenge. Further consideration must be given to local regulators defining the governance of this global mandate. All of this has significant ramifications for collateral operations for both the buy and sell sides.

Kick-off is December 2015, when bilateral derivatives will be traded under new collateral agreements and market participants will start putting the preparation for the new requirements in to practice. In order to allow adequate time for all market participants to adhere to the new market rules, the implementation of initial margin (IM) transfer will be phased in gradually to 2019. The BCBS/IOSCO framework has been designed to reduce systemic risks related to over-the-counter (OTC) derivatives, in addition to providing firms with incentives to centrally clear eligible trades and provide assistance in managing the overall liquidity impact of the requirements.

It is important to understand that the impact of this regulation is far reaching, arguably more so than central clearing due to the breadth of liable parties and the non-standard trade types covered. Under the new globally agreed standards, all financial firms and 'systemically important non-financial entities' engaging in non-cleared derivatives trading will have to exchange initial and variation margin with their counterparties.

While the exchange of IM and variation margin (VM) is by no means revolutionary, the mandate covers a large section of the market which historically has not been affected by collateral. This means many trades may not currently be covered by credit support annexes (CSAs), or it may be as simple as an organisation having no existing collateral operation or expertise. Either way, BCBS/IOSCO means that the cost of non-cleared OTC derivatives will increase.

For those that may be new to collateral, as some non-financial organisations will be, two options await:outsourcing or internal investment. It is highly possible that trade volumes may be low enough to manage internally for many, in which case a rapid roll out of a collateral system providing agreement management and margin calculation may well suffice.

What of those who have the necessary wherewithal, what are their main concerns?

Yet another increase in call volumes is expected, with one Tier 1 bank recently forecasting volumes to increase 15-fold. This, added to the multitude of intra-day, multi-currency calls experienced under central clearing, conjures images of entire cities of collateral personnel busily crunching data. Of course throwing people, like money, at a problem is not the answer. Exception-based, straight-through processing (STP) workflows are the ally of the dynamic, future proof organisation. Let the infrastructure you invest in do the work. We are moving from an age of system fed manual labour into an era of intelligent platforms and enhanced collateral utilisation.

As well as 'crippling' call volumes, the new requirements call for new style agreements.

These will include standard eligibility rules and haircut schedules, and will apply to derivatives traded post-1 December 2015. Collateral managers will have to maintain multiple agreements spanning cleared business and the pre/post-IOSCO bilateral business.

It may be prudent to invest in the impending shortfall in legal resources; renegotiating existing CSAs to make them BCBS/IOSCO compliant. The task of introducing asset segregation and currency silos will be lengthy. All of this is in addition to negotiating new agreements with non-collateralised counterparties.

Other features of the IOSCO framework are intended to assist in managing the liquidity impact of margin requirements. The European Supervisory Authority's Regulatory Technical Standard (RTS) includes more asset classes, such as convertible bonds, than originally listed in the IOSCO standardised schedule.

The application of concentration limits promote explicit diversification and prevent counterparties inadvertently becoming exposed to specific assets, issuers or domiciles. The standard schedule of haircuts means that while more collateral may be required, organisations will be encouraged to think strategically about the collateral they pledge.

IM is a central focus of the BCBS/IOSCO framework. It is used in the centrally cleared world to great effect and is seen as fundamental to reducing systemic risk. As with most of the current regulatory initiatives, there is much focus on the apparent collateral squeeze due to increased IM requirements.

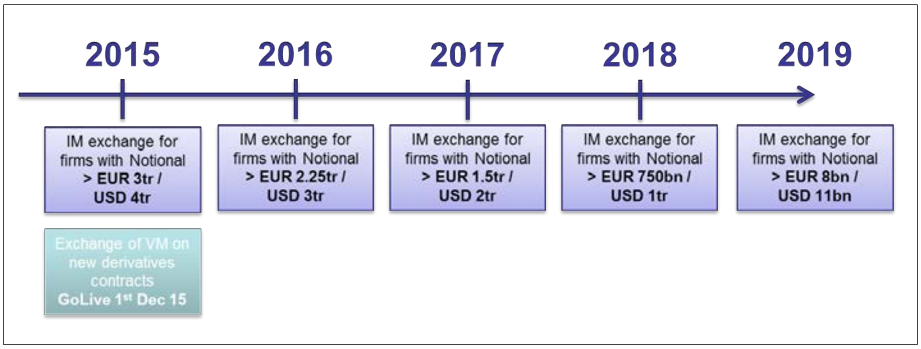
In an effort to combat this, the framework allows an IM threshold of €50 million. Maintaining this across a large organisation, with many legal entities may prove difficult operationally. There will be instances where organisations may apply the threshold to their largest, most profitable business, leaving smaller entities to fend for themselves. Maintaining thresholds at a counterparty level, as well as at agreement level is a key consideration for collateral processes.

While VM will be separated into currency silos, movements will be calculated net. IM will be calculated and settled gross. Counterparties within non-netted jurisdictions will be familiar with this method, however, two-way exchange of collateral is not currently common market practice.

The standard schedule for IM, as set out by BCBS/IOSCO, appears simplistic at first glance with the framework setting out a percentage of notional that can be easily calculated by a collateral system. However, on further examination, in addition to calculating the percentage of notional required, the system would also need to calculate the net to gross ratio (NGR) and apply this to the IM requirement, as below:

Net standardised initial margin = 0.4 * Gross initial margin + 0.6 * NGR * Gross initial margin

While this calculation provides a 'simple' way to



BCBS/IOSCO adherence timeline

calculate IM, particularly for smaller market participants, there is much evidence that this method is punitive. It was stated in the key findings of BCBS/IOSCO's second consultative document that initial margin requirements under the standardised schedule are roughly 6 to 11 times higher than model-based initial margin. Moves for a standardised, market-wide IM quantitative model are well under way.

The International Securities Derivatives Association (ISDA) has proposed a standard initial margin model. The next logical step may appear to be a market-wide calculation tool but we should be cognisant of other initiatives, such as standard CSA, where uptake was limited due to overly complex rules which effectively penalise buy-side firms. Smaller market participants will not have the same needs as Tier 1 banks.

In a bid to 'lock in' IM, IOSCO set out with recommendations to limit rehypothecation. However, preventing rehypothecation entirely would have detrimental effects on liquidity. As a result, the final framework recognises the possible funding impact by allowing the rehypothecation of collateral for the purpose of hedging positions.

In addition, any rehypothecation of IM can be done only once. Firms must be able to flag rehypothecated assets and ensure that no onward reuse occurs. One simple way of doing this is rehypothecation to a clearinghouse, which would hold those assets without reusing, however, this option is not available to many organisations.

A flexible, global inventory would allow the enhanced monitoring, tracking and reporting of assets needed to manage this requirement. It would also provide the required information for asset reconciliation.

Additionally, a global inventory would provide the facility to link into segregated custodian accounts in order to monitor assets placed as IM. Triparty agreements are widely used, however, all parties will be required to sign account control agreements allowing them to support gross bilateral requirements.

The operational problems faced increase the network or scope of the collateral manager. If we consider a central clearing model, the buy side faces off against clearing members, or brokers that provide collateral services, such as collateral upgrades and allocation. For uncleared derivatives, the buy side will have to choose whether to manage those functions internally or outsource operations.

One key impact to the buy side would come from concentration limits on collateral assets, meant to promote explicit diversification, which pose the challenge of sourcing multiple assets across multiple funds/strategies. Increased activity in securities finance markets to generate funding may be widespread. In many organisations, an integrated trading and collateral system will provide huge benefits.

What do all these requirements mean? The answer is simple. Strategic investment in effective collateral operations is paramount.

Many organisations recognise that existing collateral operations systems are not fit for purpose. This is driving investment in new technology. However, after the large outlay of the past few years this investment should be carefully considered with the aim of providing a future proof solution covering multiple requirements, including collateral trading, inventory management, optimisation, as well as collateral operations.

In a market that demands utmost efficiency and control, organisations need to make the right decision in selecting a new collateral system. **SLT**

Alex Soane
Product manager, operations for Apex Collateral
SunGard

Be the best

CloudMargin's Andy Davies and Stuart McHardy share collateral management oversight best practices to keep beneficial owners informed in a fragmented world

The past few years have seen unprecedented change in the world of collateral management: the rise of central clearing for securities lending; interoperability between security depositories enabling greater mobility of collateral; regulation driven revolution with OTC derivatives; and the list goes on.

For most beneficial owners, the majority of collateral management has been outsourced to lending agents, service providers and triparty agents. Unless the indemnity offered is watertight in every case, the beneficial owner still needs to maintain visibility over the process for good governance.

Whether it's management information systems reporting requirements from senior management, questions needing immediate answers from colleagues in risk management, audit, compliance or credit, or regulatory reporting concerns, having accurate, real-time visibility of every position and analysis across every business line is essential.

For the largest banks, brokers and central counterparties (CCPs), throwing money at the problem to build or buy technology solutions costing millions is a viable solution. For beneficial owners such as asset managers, insurance firms and pension schemes, as well as the traditional buy side, this approach is just not an option.

Adopting best practice for beneficial owners wanting oversight of collateral management consists of asking three key questions:

- **Collation:** can you collate data from various sources into one place, giving a complete picture of collateral activity across all products?
- **Validation:** can you validate the data you have? Is the collateral eligible and correctly priced, are your positions correctly valued?
- **Visualisation:** can you ask questions of the data to see how your business is running? Can you make sense of the numbers to make the right decisions?

In an increasingly fragmented world, this goal of best practice can be a lot harder to achieve than it seems.

Collation of data

Lending agents, CCPs, brokers and service providers typically have great client reporting portals and provide real-time data to their clients but there is no consistency.

In a commonly seen scenario, an asset manager uses its global custodian as agent lender for its securities lending programme, manages cash via triparty repos directly with one of the main agents, maintains margin accounts with numerous brokers for futures and options trading, and trades directly with the large banks to hedge via OTC derivatives. The number of different external portals that the firm has to deal with, combined with reporting or extracts from internal systems used for directly collateralised products, becomes large.

Even assuming that all of the reporting is in the same currency, a big assumption, the formats between different portals (even between different products with the same counterparty) are rarely similar. It's not a quick process to combine this data so the process to get a holistic view of all collateral in a single place is usually given to a junior member of staff armed with spreadsheets.

While spreadsheets offer amazing flexibility and are quick to implement, re-keying or the cut-and-paste of data is inefficient and error prone. Even in the best-run firms, this is unlikely to be performed more than once a day, usually looking only at yesterday's closing balances.

This approach precludes real-time analysis and in a time of stress, such as a looming counterparty default, trying to do it quickly only increases the risks of error.

Many firms we speak to have tried automating their spreadsheets via macros and while this has some benefits, it introduces new risks of supporting this often-unstable new process. Frequently, the developers of these solutions are not always around to maintain them, having changed roles or moved firms leaving a reliance on unsupported technology to run a critical process. Even if the developer is still available, the internal costs of maintenance and keeping up to date with report and regulatory changes can be prohibitive.

In a best practice environment, this process requires dedicated technology to ensure completeness and accuracy of data received, the ability to process real-time updates and deliver operational efficiency.

Fortunately in 2014 this technology is widely available off the shelf from vendors and is very affordable. It shouldn't cost more than the headcount that would otherwise be required to cut and paste the data.

Any reputable vendor should be able to receive this information directly from the source, without the beneficial owner having to be involved in downloading or reformatting the data themselves.

The best practice for collation of data should be a fully automated, intra-day, behind the scenes process with little (if any) human involvement.

Validation

Once the data has been collated, any firm seeking best practice should be looking to validate the information received. Has collateral been priced correctly? Is the collateral pledged to me eligible? Are my positions correctly valued? This is all key to the decisions that the business has to make in the next phase of the process.

At a very basic level, every external party will have separate market-data sources for pricing non-cash collateral and be using different FX rates within calculations. A bad price or erroneous FX rate will lead to over- or under-collateralisation, so it's prudent to revalue all collateral using a single, internally approved pricing source with a single set of FX rates to identify issues with the reporting received.

A similar set of controls should be applied to testing eligibility of collateral, whether received directly, via an agent lender or allocated by a triparty agent. Any errors with codifying eligibility and concentration rules, or with the market data such as credit ratings and asset class, can lead to ineligible collateral being pledged or the wrong haircut being applied. Re-performing the eligibility tests using independent market data should validate this.

A third source of errors is in the valuation of positions, especially with more exotic products such as OTC derivatives. If a broker is acting as valuation agent for swaps and at the same time pledging collateral to cover the exposure, there's a conflict of interest that should be checked.

It's clearly essential for the validation of the data to check every price, every collateral position and every valuation, but to do this without automation is operationally impossible. The ideal solution should only require human intervention where exceptions have been identified.

Again, technology to do this is widely and cheaply available and should be deployed in any best practice environment. Any solution should be able to source market and price data from third parties (or consume the beneficial owner's internal data where available), test eligibility across all products, from securities lending, triparty and bilateral repo, to listed and OTC derivatives, and value exotic positions.

For best practice, automated validation of collateral data should be intra-day, exception-based, and it should question every price, every allocation and every valuation.

Visibility

Getting the data together in one place and validating it is only part of the issue, being able to query it 'on the fly' to extract the real meaning and make sense of the numbers is just as critical.

Firstly, the beneficial owner needs to proactively see any situation in which it is under-collateralised, ineligible assets have been received or valuations are incorrect, and it needs to have full supporting data to go with it.

This will let them challenge their agents with minimal effort and ensure full coverage for their firms.

Just as importantly, beneficial owners need to have visibility over instances where they have over-pledged collateral and can recall it.

Sophisticated analytics can suggest ways to optimise the collateral pool, whereas trending and what-if analysis can predict the impact of market changes. Relative and absolute performance of different counterparties can be tested, making the possibilities almost endless.

Showing visually how collateral is split by counterparty, product type, asset class, geography and so on gives businesses far greater control and insight into their activity than can be achieved by yet another spreadsheet report.

As before, technology enables firms to get this visibility and bring best practice into play. No longer should decisions have to be made after trawling through endless spreadsheets, combining reports into new reports that someone manipulates by hand to give a final sea of numbers. On-the-fly report building and data queries are essential.

Technology has improved massively in the past few years and cutting-edge business intelligence features should be the norm in any collateral management process trying to adopt best practices.

To summarise, best practice for beneficial owners means that:

- Data should be automatically collated from all sources via a fully automated, intra-day, behind the scenes process into a single view.
- Every price, every allocation and every valuation should be validated at multiple times per day.
- There should be real-time, exception-based visibility into the collateral books. Errors should be automatically identified and quickly resolved, and ad-hoc reporting should be easily produced.

Many technology firms in the vendor space claim to offer this as a turnkey or out-of-the-box solution for beneficial owners. The hard part for some beneficial owners is identifying technology that can actually deliver on the above while costing less than giving the problem to a junior with a spreadsheet. **SLT**

Andy Davies
Co-founder and CEO
CloudMargin

Stuart McHardy
Co-founder, managing director for product development and COO
CloudMargin

CCPs, securities lending and collateral management

Gerard Denham of Eurex Clearing explains the unique characteristics of its CCP that give key advantages for participants within the securities finance value chain

A central counterparty (CCP) plays an important role in the global effort to maintain stability in financial markets. At Eurex Clearing, we recognise our responsibility to help mitigate systemic risks of the overall marketplace. We manage financial crisis effectively, not least because we have robust procedures in place to deal with a clearing member default and were prepared to act when the need arises. We maintain our readiness to act in similar situations by continuously enhancing our risk management techniques and introducing innovative product offerings that increase the safety and reliability of the markets served.

Eurex Clearing ranks as one of the largest clearinghouses globally, offering fully automated, straight-through CCP and post-trade services for derivatives, equities, bonds, secured funding, and securities financing. The Lending CCP covers international fixed income assets and European equities as well as exchange-traded funds (ETFs). It preserves the key features of the current bilateral market for both lending and borrowing counterparties while being able to deliver significant operational efficiencies and cost reductions to all market participants.

In light of the current market conditions and the advancement of the Lending CCP, the development of our CCP service for the securities lending market has resulted in major market players participating to the service.

Enhanced collateral and risk management

One of the core functions of a CCP is to minimise the counterparty risks and the credit exposures for the individual market participants. For the securities lending market, the Lending CCP reduces the potential secondary effects of the failure of a major counterparty as the impact is mitigated and absorbed by the CCP's protections.

As part of the service, Eurex Clearing's Lending CCP—after novation—becomes the guarantor of the loan and collateral securities, and as such, is offering the protection from counterparty default. Securities lending transactions are incorporated into Eurex Clearing's risk management methodology, which provides a robust and safe environment leading to an overall reduction in systemic risk for the market. The Lending CCP undertakes near-time intra-day risk calculations to ensure coverage of mark-to-market exposure, and in case of collateral shortfalls, intra-day margin calls are initiated.

Also included into the offering are the services of triparty collateral agents. These specialist service providers are connected to the Lending CCP in order to manage the collateralisation process for non-cash collateral on behalf of the counterparties. This enables users of those triparty collateral agents to optimise their collateral usage to a further extent by adding CCP-novated loans. A wide range of equity and fixed income securities are accepted as loan collateral by Eurex Clearing while the beneficial owner can still define its own collateral eligibility (as a subset of the CCP's collateral universe). The lender can re-use the non-cash collateral securities received according to the rules and regulations of the triparty collateral agent and the borrower still has the ability for the substitution of collateral.

Capital cost efficiencies for the market

In addition to the increase in the liquidity for the market, there are a number of features that market participants are able to benefit from when using the Lending CCP. Globally, banks are now facing the very real demands of capital regulatory directives and liquidity capital ratios. Bank's risk weighted averages are being pressurised by the type and level of activities that they are currently engaged in.

Under existing Basel II regulations, there is a 0 percent risk weighting for transactions cleared via a CCP. When new Basel III regulations start to take effect, the existing over-the-counter transactions will face much higher stringent capital charges than the 2 percent charge that will be applicable for exposures towards a qualified CCP. This enables our clients to make use of centrally cleared transactions to free-up capital currently used for securities lending transactions and optimise their use of capital across other business lines.

Extensive advantages of the Lending CCP

Increased operational efficiency is realised through the automated flows between the trade capture, clearing, and settlement platforms that the Lending CCP includes. In particular, links to leading service providers for the securities lending market have been incorporated with triparty collateral agents, electronic trading markets and real-time post-trade automation service providers.

The Lending CCP is instrumental in achieving a strong and robust securities lending franchise and facilitates a cost-effective structure to improve and optimise securities lending activity through:

- Enhanced efficiency and safety for the entire marketplace;
- An increase in supply to the market, improving liquidity;
- Standardised and transparent risk and collateral management methods;
- Improved efficiencies on trading and operations of securities lending transactions;
- Reduction of the overall legal and documentation workload;
- Integrated cross-product service offering—netting of regulatory capital across all cleared products;
- Collateral efficiency—a wide range of customised choice on collateral eligibility paired with re-use capabilities; and
- Capital efficiency—0 percent weighting under Basel II, 2 percent weighting under Basel III.

> "A wide range of equity and fixed income securities are accepted as loan collateral by Eurex Clearing"

The Lending CCP has been established to meet the new demands of the securities financing markets, further reducing credit and systemic risk, and further increasing operational efficiencies while maintaining important bilateral market characteristics.

As we fulfill the ongoing commitment of safeguarding the marketplace, we continue to play an important role in helping the financial markets deliver their full economic benefits, thereby ensuring that our customers are always in a position to be clear to trade. SLT

Gerard Denham
Senior vice president, clients and markets responsible for securities lending
Eurex Clearing

Navigating the labyrinth

Etienne Ravex of Murex outlines how BCBS/IOSCO's final framework for non-cleared derivatives has created a new risk management paradigm

While most of the focus on derivatives reform has been on cleared trades, changes are also coming to bilateral, non-cleared derivatives starting in 2015. These important shifts are directing market participants to re-evaluate how they manage risk in this space. There are major changes ahead and risk and collateral managers have choices to make in the new environment.

Regulators have used the powers at their disposal to make centrally cleared trades more economically attractive than bilateral. Despite the extra costs and complexity, shifting to an exclusively cleared derivatives environment is not possible. Bilateral trades will remain an important part of the market. To be sure, some trades that are currently bilateral but can be cleared will migrate over time, but many trades are not suitable for central clearing. Certain trade types or clients have been exempted. Those that remain non-cleared will suffer through a complex labyrinth of rules and regulations.

Background

In 2009 when the G20 leaders met in Pittsburgh to hash out the direction of derivatives market, the final communiqué stated: "Non-centrally cleared contracts should be subject to higher capital requirements." Since then, regulations have changed: centrally cleared trades are preferred to bilateral and regulations should influence the market in that direction.

After much debate, Margin Requirements for Non-Centrally Cleared Derivatives, published by the Basel Committee on Banking Supervision (BCBS) and the International Organization of Securities Commissions (IOSCO) in September 2013, presented the final framework on how market participants will manage risk and collateral for non-cleared derivatives.

A new framework for non-cleared derivatives and collateral

Bilateral trades between a derivatives dealer and a client are governed by an International Swaps and Derivatives Association (ISDA agreement, typically with a Credit Support Annex (CSA) that outlines collateral arrangements. Historically, many CSAs did not require highly rated counterparties to post initial margin (IM)—dealers absorbed the exposure as a cost of doing business. Looking back at lessons learned from AIG, regulators saw this lack of margin as a source of systemic risk and have been working on a fix. The objective is to move the market from a 'survivor pays' model to 'defaulter pays' by collecting sufficient IM upfront to absorb adverse price movements in the case of a counterparty default.

Rules released by BCBS/IOSCO for non-cleared derivatives trades will make bilateral derivatives more complicated and more expensive. Included are higher capital costs relative to cleared trades, funding valuation adjustment (FVA) and credit valuation adjustment (CVA) charges, complex margining processes, and higher initial margins. Today, between 34—40 percent of derivatives trades are non-cleared and ISDA expects a substantial percentage of the market to remain that way. This will leave a sizeable portion of the derivatives market subject to a broader set of rules and higher costs.

Currently the largest segment of non-clearable swaps are swaptions and cross-currency swaps (roughly $30 trillion each). Other non-clearable derivatives include clearable products in non-clearable currencies (eg, Korean won, Brazilian real, and Mexican peso).

The first rule to take effect will be IM on 1 December 2015, and then only for derivatives books with more than €3 trillion in notional. Over time, the threshold will fall, when on 1 December 2019 the IM requirement will affect applicable derivatives portfolios above €8 billion. The schedule is (notional is determined by calculating the average notional of non-centrally cleared derivatives for June, July, and August month-ends):

- 1 December 2015 to 30 November 2016: €3 trillion
- 1 December 2016 to 30 November 2017: €2.25 trillion
- 1 December 2017 to 30 November 2018: €1.5 trillion
- 1 December 2018 to 30 November 2019: €750 billion
- 1 December 2019: €8 billion

Variation margin (VM) will be mandatory on trades executed on or after 1 December 2015.

Participants and exclusions

The new regulations are intended to affect financial institutions and systemically important non-financials. Systemically, important non-financials is a poorly defined term and few derivatives players would fall under this category. Sovereigns and supra-nationals are exempted, although some, including Germany, are voluntarily deciding to post collateral as a risk management and cost improvement tool. Physically settled foreign exchange transactions associated with the exchange of principal, notably including cross-currency swaps, are also partly exempted from the new rules.

As a practical matter, phase-ins periods and IM thresholds mean that only the largest derivatives market participants should worry about current changes. But those large players will see substantial complexity added in the way they manage their bilateral trades.

While collecting VM is a common market practice, the BCBS/IOSCO rules make it somewhat more complicated. Only cumulative IM above €50 million with any counterparty, calculated on a consolidated basis, need be collected by any derivatives dealer. By using a €50 million threshold, BCBS/IOSCO says there will be substantial savings for those otherwise obliged to post IM. They estimate that the amount of margin needed with a zero threshold is more than double compared to the higher threshold.

In addition, no IM will be required when there is no counterparty risk. For example, when a client buys a European option from a dealer for a premium, the option buyer is now exempt from posting IM as the option seller has no credit exposure to it. The risk is only that the dealer makes good should the option value come into the money. The seller of the option has no counterparty risk exposure.

Which margining model to use?

One area of controversy is what the IM and VM models will look like. BCBS/IOSCO will allow the use of either internal or standardised margin models. Internal models must be approved by regulators, much like capital models.

However, market participants must incorporate a 99 percent confidence 10-day margin period when calculating IM amounts. This is more onerous than centrally cleared trades (which typically use a five-day margin period) or exchange cleared derivatives (that often use a one day margin period). As a result, IMs will be higher on a bilateral trade versus similar risk in other forms.

BCBS/IOSCO has mandated that trades be divided by type, suggesting a breakdown by currency/rates, equity, credit or commodities. Margin would be collected on a gross basis for each trade risk type. Netting would only be applied within risk buckets. This could make overall IM requirements higher by not taking into consideration negatively correlated cross-bucket transactions.

Models will be calibrated using historical prices that intentionally include periods of market stress. BCBS/IOSCO requires this analysis to be further divided by trade type: "[T]he period of financial stress used for calibration should be identified and applied separately for each broad asset class for which portfolio margining is allowed."

The BCBS/IOSCO rules allow for a standardised model but make it more expensive to follow this route than relying on an internal model. For example, the standardised model uses set haircuts on collateral in contrast to internal models that are calculated by each firm. For internal models, there is no specific register of acceptable collateral although BCBS/IOSCO has suggested a list that includes cash, government bonds, high quality corporates, high quality covered bonds, equities included in major stock indices, and gold.

Derivatives dealers will be responsible for maintaining best practices, including diversification, credit quality, liquidity, and avoiding correlation or wrong way risk. BCBS/IOSCO has estimated that standardised model IM could be as much as 11.1 times higher versus internal models. ISDA has estimated that IM under the standardised model could be as a high as €8 trillion, even with a €50 million threshold.

In the standardised model, there is an 8 percent haircut on collateral when there is an FX mismatch (on top of the normal asset haircuts). For IM, this creates a two-level exposure netting process with four asset class buckets on one level, rolling up to a currency level above, at which allocation of eligible collateral will be performed. This makes it particularly complex to monitor portfolios that go across currencies. Cross-currency collateral creates an additional layer of operational and timing risk (also known as Herstatt risk).

The European Banking Authority (EBA) has clarified the regulatory subtlety concerning the application of an FX mismatch to both VM and IM. Catering for constraints, while a feature of capital calculation systems for years, is new to collateral systems. The schedule-based haircuts are designed to encourage internal models.

ISDA and the standard initial margin model

ISDA has advocated that a market-wide internal model be established: the standard initial margin model (SIMM). A single model is more transparent to the entire marketplace than each firm supporting its own internal model. It puts each derivatives dealer on a level playing field, preventing investors from shopping for the most advantageous model for a given trade. Another benefit is to avoid each dealer having its own black box, which would complicate replication of results and make dispute resolution significantly easier.

On the negative side, it will be a challenge for dealers to arrive at a consensus for a single market-wide model, much less regulators. There is also the potential for systemic risk created when every participant is using the same model.

ISDA has also argued that the idea of bucketing trades by type (eg, currency/rates, equity, credit or commodities) is not appropriate. Many trades, according to ISDA, cannot be cleanly split by risk type and are often some hybrid of risks. ISDA has suggested a model that decomposes trades into specific risk factors, then aggregates, taking into account risk factor offsets.

Rehypothecation rules

BCBS/IOSCO has incorporated a new process to control rehypothecation of collateral held for non-centrally cleared derivatives trades. Addressing the fear that long collateral chains of rehypothecated collateral would introduce systemic risk, regulators have mandated a shortening of the chains by limiting rehypothecation to a single turnover.

This ‘one and done’ approach limits the collateral movement to trades that hedge the dealer’s position. In addition, the recipient of the collateral must protect the original customer’s rights in the collateral and agree not to rehypothecate the collateral further. Precisely how this can work with cash, given its fungibility, is not clear. Perhaps the currency can be invested in triparty repo with one agreement per original customer.

But, given the intermediate position of the derivatives dealer and the potential for being caught up in a complicated chain that protects the original customer should the derivatives dealer go bankrupt, it may not be worth the effort. The rule does not apply to bilateral trades with other derivatives dealers. Interestingly, within Europe, rehypothecation of IM collateral has been banned outright by the EBA.

Complexity and technology

The complexity introduced by the BCBS/IOSCO regulations will be a challenge to manage and requires world-class technology. Non-cleared derivatives sit on top of an already intricate series of rules that collateral management systems must apply and optimise.

The systems environment that supports this activity needs to understand not only the constraints placed by the regulatory and business environment, but also the idiosyncratic preferences and needs of each user. Equally as important, systems must work flawlessly with upstream and downstream technology.

At Murex, we adapt our systems to fit client business models, not the other way around. This comes from deep expertise in the evolving regulatory environment, a keen understanding and respect for client needs.

Murex brings decades of building ground breaking technology solutions for a variety of client profiles including the largest and most sophisticated capital markets institutions in the world.

MX.3 is the culmination of the massive investment necessary to bring an end-to-end platform that can make a difference to how effectively clients can execute their strategy. That investment will not stop any time soon. Murex will constantly refine and improve its risk and collateral management platforms in order to keep a step ahead. SLT

Etienne Ravex
Product manager
Murex Collateral Management

Boots on the ground

What are the technology requirements for trading with a securities lending CCP? Martin Seagroatt of 4sight Financial Software has the answers

Interest in the concept of securities lending central counterparties (CCPs) has gathered pace in recent months as the Basel III capital cost savings and credit risk benefits of trading via a CCP become apparent. Market participants are now starting to run through their cost/benefit analyses and plan their clearing strategy. As a technology vendor, customers are asking about CCP support on a regular basis and some clients have already begun the onboarding process.

Our customers want to understand the workflow changes and modifications to existing technology systems required to begin clearing trades. So, from a technology point of view, what are the changes required in order to connect and trade via securities lending CCPs such as Eurex Clearing's offering?

Connectivity

With the Eurex Clearing Lending CCP, there are a number of options to transmit trades. The first is via Pirum's Real-Time Service. Novation is also possible using the Eurex Repo platform or the SL-x trading platform.

With this in mind, 4sight Financial Software has developed support for Pirum's Real-Time service. This allows users of 4sight and the Pirum service to novate securities lending trades via the CCP—assuming they have the relevant clearing agreements in place with Eurex.

The Pirum Real-Time service matches trades between the bilateral counterparties and performs an integrity check to ascertain that the trade is suitable for clearing. It then transmits the trade for novation to Eurex Clearing's Lending CCP. Pirum also communicates any trade lifecycle events such as rate changes, recalls and returns with the CCP.

Books and records

In terms of changes to books and records systems such as 4sight's, some configuration is required in order to support clearing of securities lending transactions. The system must support the bifurcation of trades so they are flagged as either bilateral, triparty, or cleared in the system. For each bilateral trading counterparty that you will start to trade with via the CCP, a new cleared account must be set up for that counterpart. This allows the system to map out the requisite settlement instructions, market cut-off times and workflow.

Collateral agreements are managed by the triparty agent and therefore if you already use triparty then the process is much the same as when trading bilaterally. To support this, 4sight already offers interfaces with triparty agents that allow automated receipt of collateral allocations.

Netting

The ability to net payments to the CCP will also offer efficiencies by reducing the number of collateral movements and operational costs. Potentially, we could even at some point see netting of margin requirements across all products traded with a CCP.

The question remains as to whether it is practical to receive a single margin call from the CCP across derivatives, securities lending and repo trades. However, if full cross-product netting ever becomes a reality, it could result in significant collateral cost savings and a reduction in operational workload.

Pre-trade analytics

As the market becomes bifurcated between cleared and bilateral trades, a need will arise to check which option is most cost effective for a given trade. To meet this need, 4sight has developed an risk-weighted and capital cost analysis tool that enables you to simulate whether it is optimum from a cost point of view to route a trade through a CCP or bilaterally.

If prime brokers and agent lenders are going to pass on the capital savings from trading via a CCP to clients, then this can help to model the transaction cost benefits in order to price CCP trades and fee splits correctly.

Looking ahead

The market is starting to embrace the idea of a securities lending CCP. As more participants come aboard and cleared volumes grow, momentum will increase.

Moving to a new trading model can seem daunting. However, Eurex Clearing's Lending CCP preserves many of the nuances of bilateral trading. This means that the changes required to technology systems are relatively low impact and the onboarding process can be completed reasonably quickly.

Firms in the securities finance markets should now start engaging in a dialogue with customers and counterparties on clearing. The cost drivers behind the move to clearing are not going to go away. It is therefore important for each firm to begin the process of identifying their target operating model for CCP trading in order to adapt smoothly to the new paradigm in securities finance. **SLT**

Martin Seagroatt
Head of global marketing
4sight Financial Software

Assessing the options

Where will financial institutions turn next for funding, asks Markit's Steven Baker

Triparty repo represents what many consider the bloodline infrastructure of our financial system and it is the main source of funding for banks and short term cash investment for thousands of buy-side entities.

In April 2014, we ran a study utilising our US triparty repo dataset that reflected the following conclusions about this critical market for collateralised cash loan and borrow trading activity.

Our study found that after much anticipation, equity repo and longer term funding were finally taking hold as market participants respond to regulatory changes. A few key findings:

- Longer dated funding was growing at a faster rate than the short dated universe.
- Equity triparty balances had grown nearly 20 percent over the study's six-month period.
- Greater demand for equities was reflected by a narrowing rate spread over US treasuries.

The question today is: "How are we doing now?" The answer, based on an updated analysis of our data for the year-over-year period between June 2013 and June 2014, is as follows:

- Banks continue to push funding maturities for equities beyond one month.
- Equity triparty balances have grown another 20 percent.
- Relative demand for equities versus treasuries and their overnight rate spread were unchanged.

As Figure 1 shows, the proportion of total equity funding balances by term to maturity appears to be concentrating between one and three months to maturity. Up to one month funding balances decreased 9 percent, and over three months by 11 percent, while the one to two month and two to three month segments increased dramatically by 62 and 136 percent, respectively.

However, despite dramatic increases in equity funding balances of between one and three months to maturity, as Figure 2 shows, the decrease in the heavily weighted over three-month period left the total weighted average maturity of equity funding unchanged.

Figures 3 and 4 show the proportion of equity to treasury overnight funding and their rate spread over the one-year period of our study.

Figure 3 shows a decline in the relative overnight funding balance of equities to treasuries from 2.9 to 1.5 percent. This decline appears to be reflective of the movement from under one month into longer dated maturities for equities, which we did not find occurring for treasuries.

Figure 4 shows overnight rate spreads were relatively volatile for the period of our study. Although ending unchanged, the spread dropped sharply in June 2013 at the same time that relative funding and investments in equities versus treasuries rose sharply.

This repeat pattern in our data highlights the relationship between the relative levels of funding and investment and rate spreads, widening when relative funding increases and narrowing when it decreases, emphasising how knowledge of collateral flows is a supportive indicator of future rate levels.

Markit's securities lending forum in March 2014 highlighted term transactions as a key opportunity for the industry over the coming years.

As ever, regulation is driving this shift as Basel III and the US Dodd-Frank Act both have measures aimed at making banks less reliant on short term, and potentially more volatile, funding by placing higher capital cover requirements on liabilities with a maturity date under 30 days.

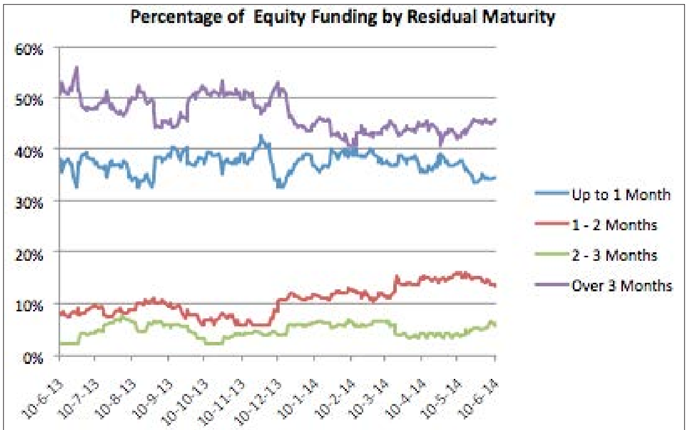
The quest for yield and a relative scarcity of high quality collateral was also discussed with equity funding identified as another avenue of opportunity for the industry.

To this extent, more than 70 percent of delegates polled during our forum thought that equity and lower quality fixed income collateral will play a greater part in the financial industry.

Our US triparty repo dataset sourced from BNY Mellon Broker Dealer Services validates the sentiment from the securities lending forum with observed shifts towards longer term funding and a greater use of equity collateral. **SLT**

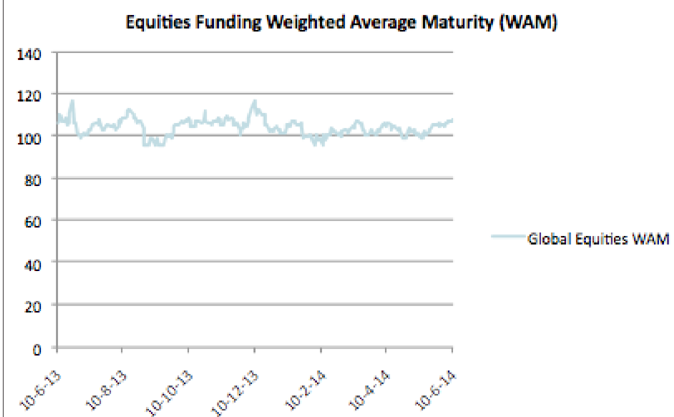
Steven Baker
Director
Markit

Figure 1: Percentage of equity funding by residual maturity



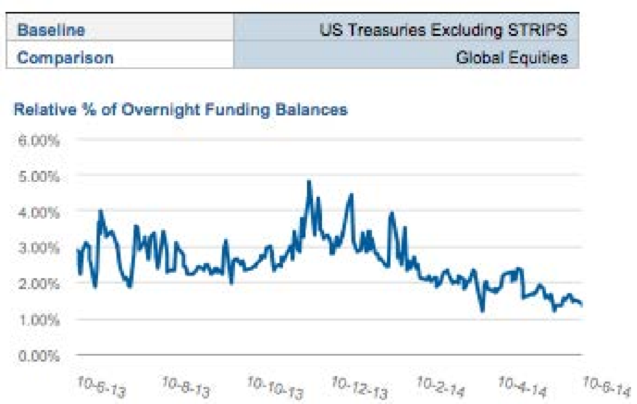
Source: Markit

Figure 2: Equities funding weighted average maturity (WAM)



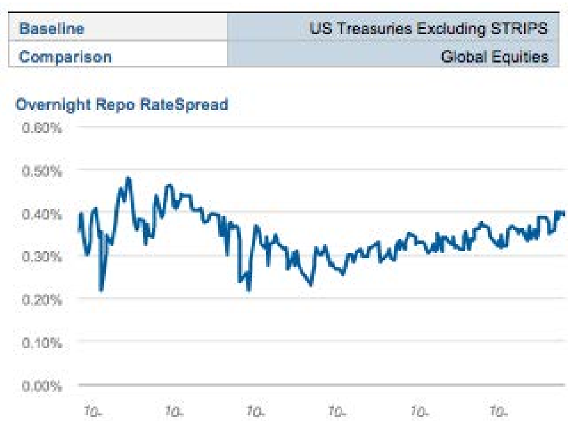
Source: Markit

Figure 3: Relative % of overnight funding balances



Source: Markit

Figure 4: Overnight repo rate spread



Source: Markit

Regulation's tightening hold

Counterparty risk management is critically enhanced through the effective sourcing and use of collateral as part of an architecture supporting multiple requirements, says Ted Leveroni of DTCC

Collateral is a fundamental aspect of mitigating risk and the efficient and adequate exchange of collateral has become a matter of prudent risk management.

Managing collateral through effective margining creates two specific operational priorities. Where a firm that has not received enough of the right type of collateral from a counterparty, is exposed to the risk of the counterparty's default. But a firm that delivers too much collateral as margin to a counterparty is also running unnecessary risks—both in terms of exposure to default and through lost opportunity costs entailed by not putting those over-collateralised assets to better use.

New rules governing the margining of non-cleared trades serve to codify best practices for firms seeking to manage counterparty risk. The latest global rules were issued in September 2013 by the Basel Committee on Banking Supervision (BCBS) and the Board of International Organization of Securities Commission (IOSCO).

While European supervisory authorities are consulting on draft technical standards for rules, these and other compliance deadlines may seem a long way off, and many buy-side firms may ultimately not be covered.

In addition, there is still debate surrounding how the guidelines should treat initial margin.

Even though the rule is not yet part of regulatory compliance, implementing the current BCBS-IOSCO recommendation covering variation margin is a matter of prudent risk management. Operational risk management is an increasingly important part of due diligence for investors and perceived weakness in this area can have a material effect on whether a firm wins new business.

Whether receiving or delivering collateral, efficient operational processes are critical to ensure that eligible and adequate assets are selected. Counterparty risk management is critically enhanced through the effective sourcing and use of collateral as part of an architecture supporting daily variation margin (VM) calls, initial margin (IM), eligibility monitoring, concentration limits, haircuts and valuations.

Focus on full collateralisation

Since finalisation of the BCBS-IOSCO proposals for non-cleared margin last September, there have been abundant industry discussions on IM, particularly around calculations (see Box 1 overleaf).

These are important discussions and we expect them to continue. However, outside of the IM calculation question, the remainder of the BCBS-IOSCO framework reflects market best practices for risk mitigation through prudent collateralisation—quite apart from the question of future regulatory compliance.

The proposed European technical standards, which have been developed based upon the BCBS-IOSCO framework, also gives equal emphasis to these best practices.

At the core is the daily exchange of VM.

Key risk principles in the exchange of margin

To ensure controlled risk management, a valuation margin framework should recognise the following principles:

- Failing to receive sufficient VM on a daily basis creates counterparty risk.
- Failing to properly implement and monitor

eligibility, concentration, haircuts and valuations creates counterparty and operational risk.

- It is essential that operational processes ensure timely receipt of the full amount of collateral that a firm's risk assessment has deemed prudent.
- Posting collateral also creates counterparty risk if too much collateral is posted or it is not properly segregated (see Box 2).
- If firms focus only on minimising operational costs by over-collateralising to limit margin call volumes, they expose themselves to greater potential costs in the event of counterparty default.

Box 1

Initial margin requirements

The current BCBS-IOSCO recommendations require the mandatory exchange of both initial (IM) and variation margin (VM). While VM is intended to cover the daily change in value of the derivative being collateralised, IM is required to cover the potential future change in value of a derivative, including in a period of stress—ie, one consistent with a one-tailed 99 percent confidence interval over a 10-day horizon. Current proposed initial margin requirements require the following:

- By the end of the phase-in period in December 2019, IM requirements will be imposed on all firms whose non-centrally cleared OTC derivatives activity exceeds €8 billion in gross notional outstanding amounts. The threshold above which a firm must start collecting IM from a counterparty is currently set at €50 million. This threshold will be applied on a consolidated group basis to prevent the creation of affiliates and other legal entities to get around the threshold. Where netting agreements are struck with counterparties that are subsidiaries of the same group, the group can decide how to allocate the €50 million benefit among its entities. Home supervisors will be required to judge whether local subsidiaries of a group comply with the thresholds. As with VM, IM transfers are all subject to a minimum transfer amount not to exceed €500,000.
- Calculation of IM may be done either by a firm's own quantitative margin model, which must be approved by the national supervisor, or by a standard schedule.
- IM should either be segregated or otherwise protected to preserve its ability to offset the risk of loss in the event of a default.
- Two-way (gross) exchange of IM.

Key requirements and scope

In particular, the final BCBS-IOSCO report specifies requirements of derivatives parties in a number of key areas which prudent strategy should follow:

- Collateral eligible as margin will be specified by national regulators but should include cash, high-quality government securities, corporate and covered bonds, major (eg, index-featured) equities and gold.
- Haircuts on posted collateral, ranging from zero (cash matching the derivative currency) to 15 percent (gold and major equities). These are relatively high and firms have the option to produce dynamic model-based haircut calculations, which have to be agreed upon with counterparties, adding further operational challenges.
- Individual credit support annexes must be adjusted to protect concentration of collateral in a specific issuer, asset class, sector, or country.
- BCBS-IOSCO rules allow one-time rehypothecation to hedge other positions with the same counterparty. This is on the condition that the collateral is adequately protected and such rehypothecation requires tracking. But European regulations rule it out entirely.
- Segregation of collateral assets to ensure they are speedily accessible in the event of a default.
- Thresholds currently €50 million for IM and zero for VM. Minimum transfer amounts for both IM and VM are €500,000.

Collateral management best practices

Given that the BCBS-IOSCO recommendations provide a best-practice blueprint to manage counterparty risk via efficient collateralisation, the challenge is how to implement them.

A solution needs to consider that counterparty risk can arise in both delivery and receipt of collateral. To mitigate the counterparty risk associated with inefficient collateral use, firms must develop an architecture supporting regular posting and receipt of VM. Effective posting ensures inventory is adequately used, and the operational process that delivers it is efficient enough to prevent over-collateralisation and the risks it creates. Effective receipt ensures supplied collateral is adequate, eligible and doesn't create concentration risk.

Firms need to analyse their own unique business operations and determine whether or not their systems and processes will support their future needs. While businesses may choose to develop a bespoke solution in-house, a range of collateral management systems already exist. These have been developed to support best practice capabilities and should allow for quicker implementation, greater cost effectiveness and easier and faster adjustments to future changes in industry practice.

Leverage the knowledge and expertise of the DTCC, with its robust collateral management platform—Omgeo ProtoColl—to implement automated STP in order to manage margin and collateral calls across the entire trading operation. Automation of the collateral management lifecycle minimises manual intervention, enabling firms to increase operational efficiency while making smarter, more effective use of their collateral and subsequently reduce counterparty risk. **SLT**

Box 2

What are the risks in placing collateral?

The risks involved in not receiving sufficient collateral are self-evident, but how does placing too much collateral create risk for a firm? The collapse of Lehman Brothers provides some answers:

- Hedge funds that were over-collateralised in trades with Lehman Brothers waited for years while administrators untangled their assets from the melee.
- Even when assets were held without transfer of title, because they were physically delivered, the trustee put a ring fence around the assets when Lehman Brothers entered bankruptcy, from which many assets did not emerge for five years.
- Even when assets are retrieved in the event of bankruptcy, differences in local insolvency regimes mean that the resolutions of bankruptcies may not allow customer first claim. Under UK (and most European) laws, title transfer retains some rights. In the US, segregation creates considerably less protection: client assets and company assets are co-mingled.

Ted Leveroni
Executive director, strategy and buy-side relations
DTCC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The EMIR compliance game

The dice have been rolled and it's your turn. Time for Emily Cates of Rule Financial to explain the rules of the game

In the wake of the financial crisis, regulators around the world set out to reduce risk, improve transparency and to standardise products and processes in the often risky OTC derivatives market. In Europe, the culmination of these efforts is the European Market Infrastructure Regulation (EMIR). The practical implementation of EMIR can be likened to a game of Snakes and Ladders, with many slow advances and some dramatic pitfalls.

There are quite possibly 100 steps along the road to compliance and with each new looming deadline there are new ladders to climb to get ahead of the pack. However, there are also hidden snakes waiting to strike underprepared participants. While falling foul of a snake or two will not be uncommon, all firms will need to avoid those with venom that could dramatically affect their reputation and bottom line.

On 12 February 2014, the EMIR trade reporting mandate came into effect. Most large sell-side firms invested much time and many resources in ensuring that they had a robust reporting mechanism in place ahead of the deadline. However, the level of preparation and investment has been somewhat mixed on the buy side. Some firms have lacked clarity on the exact impacts of the legislation on their businesses, or have focused their attention on implementing temporary tactical solutions and simply waited to see how the service providers develop their offerings. For many buy-side firms the hope is that the number of delegated reporting venues will increase and the legislation will become clearer as the European Securities and Markets Authority (ESMA) releases more detail on the technical standards.

While the larger sell-side firms have tended to tackle the trade reporting challenge head on, they too have faced a number of issues. Having surmounted the initial challenge of working out which products are classed as derivatives under EMIR and knowing the unique product identifier (UPI), there are now two contentious issues outstanding:

- The creation of the legal entity identifier (LEI), which every legal entity that needs to report under EMIR should have set up; and
- The generation and exchange of unique trade identifier, which is made up from a combination of the LEI and other references.

Once the LEI has been obtained and the unique trade identifier generated by either party to a transaction, the information then has to be delivered to and consumed by the receiving party before finally being added to its own trade report. In order for trade reports to be deemed fully compliant, both parties must report the transaction and the details of each report must then be matched at the trade repository. Achieving this has not been as straight forward as it was expected to be.

Although trade reporting under EMIR is currently the primary cause for concern among most market participants, it's important to note that this is just the first roll of the dice in the EMIR compliance game. Over the next 12 to 18 months firms will need to negotiate many more deadlines, obstacles and challenges on their long road to compliance. With most firms having successfully completed their first turn in the EMIR game, fthey now need to objectively review their market position and plan for the next phases of EMIR implementation.

The next big ladders to climb

The three main challenges facing firms in the coming months are collateral reporting, clearing, and product standardisation. These are formidable ladders to climb and they continue to create problems for all market participants, including trade repositories, service providers and central counterparties (CCPs).

Collateral reporting

The requirement to add collateral valuations to trade reports came into effect in August 2014. This poses many challenges for institutions as the valuation and collateral systems are often separate from the trading systems that the derivatives have been executed on. This means that compiling a compliant trade report will involve gathering and collating information from a number of separate systems; the trading systems and a suite of collateral valuation systems.

Trade and collateral linkage will be the biggest hurdle to compliance as most collateral is pledged on a portfolio basis rather than an individual trade or basket level, which means that the counterparty to a contract could be applying a different collateral mix or haircut to the portfolio.

Luckily, collateral valuation will not be a required matching field. However, there is much discussion around whether firms should use the pricing and haircut valuations provided by third party reporting providers, collateral custodians or their own internal valuation processes for reporting purposes.

If a contract or portfolio is only collateralised with cash then it will be relatively straight forward to use a third party's valuation. If, however, there are non-cash collateral pledges then it becomes much harder for third parties to know how firms' internal risk departments would value that collateral based on internal haircuts, concentration limits and thresholds. If a contract is centrally cleared then there is no choice to make, as the valuation used is always that supplied by the CCPs, which have very sophisticated margin models and collateral valuation models that are publicly available.

Ultimately, regardless of who is doing the collateral reporting, a process of linking the collateral to the portfolio will need to take place.

Clearing obligations

Calculating, monitoring and managing whether or not your trading volumes in a particular derivative product will push you over the mandatory clearing obligation threshold will come to the fore. However, all these mandatory thresholds will only come into effect for over-the-counter (OTC) derivatives once clearinghouses have been approved for those products to clear through them.

Currently, this is forecast to take place in Q1 2015 at the earliest, or at the latest Q2 2016. For the first three years following the enactment of EMIR, pension funds will remain exempt from clearing obligations, while non-financial institutions will enjoy immunity for the foreseeable future. Meanwhile, firms could undertake the following:

- Re-paper existing contracts, placing the CCP as the counterparty to the transaction from both sides and agree new economic terms with the CCP that maintain the economic viability of the original contract; and
- Terminate existing contracts early and then re-execute the trade on the exchange for that newly cleared product.

Clearing thresholds will take into account whether the OTC derivatives are concluded for hedging purposes. Those that are deemed to be reducing risks will be excluded from the clearing threshold. Clearing thresholds will be reviewed periodically.

The clearing obligation has not yet come into effect, however, the ESMA RTS for Central Clearing Mandate is due in September 2014 and firms can commence the clearing calculation game. These changes could eventually force firms to make some large and fundamental decisions around their execution behaviour.

Product standardisation

All new trade reporting mandates require that the trade is reported with a UPI. There is a general desire to see the Financial products Markup Language (FpML) format used across the board for derivative products. Currently, FpML supports many centrally cleared contract types and there are many more that will be developed over the next two years as CCPs start to release new products for clearing.

When a new OTC derivative product is to be centrally cleared, the CCP must submit a notice to ESMA, which will then perform the necessary checks to register the CCP as a clearer of that OTC derivative product. A CCP will have to go through a lengthy process in order to get ESMA to approve a product. Understandably then, products will be released more slowly than anticipated.

The launching of a new OTC derivative contract for a CCP will involve extensive liaison with the trading venue. Typically, historical price models will be provided by the trading venue and the CCP will provide the standard portfolio analysis of risk (SPAN) or value at risk (VAR) parameters back to the venue for the calculation of liability aggregation.

Firms should be ready for an influx of new product static data, either to standardise their current derivatives product codes or when new products are released for central clearing.

The end game

Will this legislation become a slippery snake or the ladder to success for the OTC marketplace?

After the financial crisis of 2008, the volumes traded in derivatives reduced significantly and they have never really recovered. With the transparency, standardisation and ease of access that these reforms will bring to trading, regulators and market participants, OTC derivatives as we now know them will cease to exist and will adopt the practices of the exchange-traded derivatives (ETD) market. There will always be innovation for new OTC trading structures, but rather than them being seen as the snake of the investment banking industry, perhaps in the future they will come to be the ladder to success in enabling firms to hedge their risk and optimise their collateral without the spectre of a pricing apocalypse hanging over their heads. **SLT**

Emily Cates
Specialist in operational processing
Rule Financial

Assessing the options

Beneficial owners must be flexible in their approach to collateral, says Simon Lee of eSecLending

In today's market, collateral flexibility is an important consideration for lenders looking to optimise programme returns. In what is a competitive environment, revenue optimisation is achieved by best addressing the requirements of both the supply (lender) and demand (borrower) side of the lending transaction, relative to overall programme objectives.

At first glance, opportunities for lenders to increase earnings without unduly increasing risk may appear limited in today's market environment, buts by recognising the joint dynamics of programme structure and collateral requirements, lenders can benefit from the increased emphasis regulation has placed on collateral, and its associated cost to collateral providers, ie, borrowers.

As the cost of collateral diverges across different collateral types it becomes increasingly important for lenders to recognise the impact that their collateral choice has on overall programme performance, particularly as it relates to the type of programme they participate in.

It is widely believed that lenders that employ a flexible collateral schedule enjoy advantages over lenders with restrictive collateral schedules. By accepting additional types of collateral, lenders can attract a larger and more diverse set of borrowers, increasing on-loan balances, and revenues. As the regulatory cost of collateral is clarified, it is becoming more apparent that when lenders restrict their collateral profiles they constrain their distribution channels, which can reduce their balances and therefore their revenues.

This dynamic can be illustrated by the example of a lender that solely accepts highly rated government bonds as collateral:

- Government bonds are expensive relative to other collateral types. The more expensive the collateral, the lower the overall spread available in any given trade. A borrower will pay a lower fee to borrow a security to offset its higher collateral costs, limiting programme earnings.
- By only accepting government bonds, lenders constrain their distribution to borrowers that are long in government bond collateral, limiting the number of borrowers willing to borrow from the lender's programme.
- By only accepting government bonds as collateral, lenders competitively disadvantage themselves relative to other lenders in the same programme. This is most apparent when the lender participates in a pooled programme, and is becoming more relevant in what is a lending market of constrained demand.

The acceptance of equity collateral has been increasingly recognised as a tool to improve programme performance. From the borrower's perspective, equity collateral has always been a preferred form of collateral due to its plentiful supply, low costs, and liquidity. However, historically there was little demand from lenders and their agents: equity collateral was harder to administer, indemnity costs were higher and programme performance was not unduly hindered without it.

As indemnity costs are becoming better known and managed, administration of equity collateral by triparty providers is more sophisticated, and a flexible collateral schedule is now recognised as an important aspect of improving programme performance. As a result, more non-cash lenders are accepting equity collateral than before.

Lenders are always interested to know how much they will be able to enhance programme earnings when they diversify their collateral schedule. It is important to understand how the type of programme the lender participates in also impacts performance. This is particularly true for lenders participating in a pooled programme, where their assets are commingled with those of other lenders and loans are allocated through a 'queuing' system.

For example, a borrower wants to borrow a position that is held by three lenders in the pooled programme. Lender A and Lender B accept equity and government bond collateral, whereas Lender C only accepts government bond collateral. Rather than allocate this loan across three lenders, with two different forms of collateral and two different costs, the borrower will source the supply from A and B that accept the cheapest form of collateral (equity). This means Lender C, which only accepts the expensive form of collateral (bonds), will miss out on the loan entirely.

This is why lenders that participate in pooled programmes must always consider how changes to programme parameters, especially as they relate to collateral or programme enhancement, are viewed relative to other lenders in the same programme, as this can significantly influence the impact that any changes may have.

For lenders that participate in segregated programmes, where assets are not comingled across lender accounts, the question of performance relative to other lenders is irrelevant and does not apply. In these programmes, changes in collateral schedules can directly enhance the performance of the individual lender, given that their performance is not influenced by the parameters of any other competing lender.

For lenders that wish to take a more active role in enhancing securities lending performance, and where the opportunity to do so exists, lending via a segregated programme structure may be advantageous, particularly when considering expanding collateral schedules. **SLT**

Simon Lee
Managing director, business development, EMEA
eSecLending

“For lenders that participate in segregated programmes, where assets are not comingled across lender accounts, the question of performance relative to other lenders is irrelevant and does not apply”

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Company description

4sight Financial Software is an independent software solutions provider with 18 years of experience.

4sight's customer base includes a full spectrum of buy-and sell-side market participants from smaller banks and asset managers through to global custodians and broker dealers. Clients in sixteen countries on four continents use 4sight's software to meet their business needs and 4sight offers the reliability and experience of a company with a proven track record.

4sight also provides project management, consultancy services and global support through its worldwide network of offices.

4sight's product range includes:

- 4sight Securities Finance (4SF): a software solution for lending, borrowing, repo, and swaps
- 4sight Xpose: software for enterprise wide collateral management and optimisation. Xpose provides cross product collateral management for securities lending, repo, and derivatives in a single solution.
- 4sight Synthetic Finance: a synthetic prime brokerage solution for contracts for difference (CFDs), total return swaps (TRS) and portfolio swaps

These solutions provide front to back office support and help 4sight's customers to

- Boost revenues
- Reduce costs
- Increase trading volumes
- Reduce manual effort
- Improve customer service
- Control risk

For further information, please visit: www.4sight.com

BNY MELLON

BNY Mellon

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bnymellon.com/collateralservices

Company description

Global Collateral Services offers a comprehensive suite of capabilities to help our clients address their collateral, liquidity and securities financing needs. As they face evolving global regulations and rapidly changing market requirements, clients can leverage BNY Mellon's products and services to better manage counterparty and market risk in their collateral transactions, engage in more investment opportunities to help maximize their investment returns and access new financing alternatives. BNY Mellon currently services approximately $2 trillion in tri-party repo collateral globally, approximately $100 billion in assets through its Liquidity DIRECT SM investment portal, and operates one of the industry's largest securities lending programs, with $3 trillion in lendable assets.

BNY Mellon is a global investments company dedicated to helping its clients manage and service their financial assets throughout the investment lifecycle. Whether providing financial services for institutions, corporations or individual investors, BNY Mellon delivers informed investment management and investment services in 35 countries and more than 100 markets. As of August 31, 2014, BNY Mellon had $28.5 trillion in assets under custody and/or administration, and $1.6 trillion in assets under management. BNY Mellon can act as a single point of contact for clients looking to create, trade, hold, manage, service, distribute, or restructure investments.

Additional information is available at www.bnymellon.com/collateralservices, or follow us on Twitter @BNYMellon.

BONDLEND

OUR INNOVATION. YOUR ADVANTAGE.

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www.bondlend.com

Company description

BondLend is a securities finance technology platform created specifically to support the fixed income borrowing, lending and repo community. BondLend's Trading and Financing Services provide straight-through processing automation for borrowing, lending and repo using a common standards-based protocol and infrastructure processing eliminating manual processes, freeing up valuable resources.

BondLend comparison services add efficiency and reduce the risk of potential collateral management errors. Comparison services are security type agnostic and support global usage for cash and non-cash records. BondLend's trading and post-trade services help drive down unit costs and increase efficiency. It allows firms to free up resources to expand their market presence, increase trading volumes, and reduce error rates all without additional cost.

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Company description

Broadridge Financial Solutions, Inc is the leading provider of investor communications and technology-driven solutions for broker-dealers, banks, mutual funds and corporate issuers globally. Broadridge's investor communications, securities processing and operations outsourcing solutions help clients reduce their capital investments in operations infrastructure, allowing them to increase their focus on core business activities. With more than 50 years of experience, our infrastructure underpins proxy voting services for over 90 percent of public companies and mutual funds in North America, and processes more than $4.5 trillion in fixed income and equity trades per day.

Broadridge Securities Financing and Collateral Management Solutions offer global, multi-asset systems designed to enable global investment banks, asset managers and service providers to optimize their regional and global collateral management, repo and securities funding operations. Used together, or as standalone solutions, traders and collateral managers have real-time access to collateral inventory positions, and can easily navigate screens and enter information for quick deal entry, collateral allocation and transaction maintenance. Advanced reporting and workflow options provide users with a streamlined approach to managing large amounts of complex data. From collateral optimisation to master netting and messaging, additional product enhancement modules create a complete platform for securities financing and collateral management teams.

For more information about Broadridge and our proven securities financing and collateral management solution, please visit our website.

CloudMargin

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Company description

CloudMargin was formed in 2013 to offer a full-featured alternative to the over-priced and overly complicated collateral management technology offered by "traditional" technology companies. CloudMargin identified that over 90% of asset managers, hedge funds, pension schemes, insurance companies and corporates relied on spreadsheets to manage this critical process and had been priced out of having a sophisticated, dedicated collateral platform. CloudMargin was created to change this.

CloudMargin offers:

- Low-cost, high-performance collateral management.
- Prices starting from a little over £1,000 per month all-in
- Cross-product collateral management – Securities Lending, Repo, OTC and listed Derivatives, Re-Insurance and more
- Optimised, exception-based workflow
- Real-time data visualisation
- Accessed securely over the internet, no hardware or software costs, low-touch on boarding
- 30 day risk-free trial

DATALEND
OUR INNOVATION. YOUR ADVANTAGE.

DataLend

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Company description

DataLend is the securities finance data services division of EquiLend, providing the market with global data across all asset classes.

This offering extends EquiLend's position as the standard of excellence in the securities finance industry.

DataLend builds on EquiLend's strengths in technology and benefits from its economies of scale. EquiLend, as a regulated trading platform, is a trustworthy repository for sensitive securities finance data.

Our innovative approach enables our clients to have a direct hand in shaping the evolution of the securities finance industry by producing market data that is best suited to serve the needs of industry participants.

The DataLend mission is to be the leading provider of securities finance market data.

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Company description

EquiLend is a leading provider of trading services for the securities finance industry.

EquiLend facilitates straight-through processing by using a common standards-based protocol and infrastructure, which automates formerly manual trading processes. Used by borrowers and lenders throughout the world, the EquiLend platform allows for greater efficiency and enables firms to scale their business globally.

Using EquiLend's complete end-to-end services, including pre- and post-trade, reduces the risk of potential errors. The platform eliminates the need to maintain costly point-to-point connections while allowing firms to drive down unit costs, allowing firms to expand business, move into different markets, increase trading volumes, all without additional spend. This makes the EquiLend platform a cost-efficient choice for all institutions, regardless of size.

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Company description

Eurex Clearing is one of the leading central counterparties globally—assuring the safety and integrity of markets while providing innovation in risk management and clearing technology. We clear the broadest scope of products under a single framework in Europe—both listed and OTC—including derivatives, equities, bonds, secured funding, securities financing.

We at Eurex Clearing stand between the buyer and the seller, which makes us the central counterparty for all your transactions. We mitigate your counterparty risk and maximize delivery management with an industry leading risk management—to keep you clear to trade. Eurex Clearing serves more than 150 Clearing Members in 16 countries, managing a collateral pool of around EUR 50 billion and processing gross risks valued at almost €8 trillion every month.

Eurex Clearing pioneers the market by offering Europe's first central clearing service for the securities lending industry. It not only supports the safety and efficiency of the market but also combines it with the flexibility of the special bilateral relationship structure.

Together with Eurex Exchange, the International Securities Exchange (ISE), the European Energy Exchange, Eurex Bonds and Eurex Repo, Eurex Clearing forms Eurex Group. Eurex Group is part of Deutsche Börse Group.

Lombard Risk

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Company description

Lombard Risk (London Stock Exchange: LRM) is a leading provider of integrated collateral management and liquidity, regulatory and MIS reporting solutions – enabling firms in the financial industry significantly to improve their approach to managing the risk in their businesses. Founded in 1989 and headquartered in London, Lombard Risk has offices in Cape Town, Hong Kong, Luxemburg, Mumbai, New York and New Jersey, Shanghai, Singapore and Tokyo.

Our clients include banking businesses - 30 of the world's "Top 50" financial institutions - almost half of the banks operating in the UK, as well as investment firms, asset managers, hedge funds, fund administrators and large corporations worldwide.

Lombard Risk's COLLINE is a state-of-the-art, web-based solution designed by experienced business practitioners for end-to-end, enterprise wide collateral management (OTC derivatives, Clearing, Repo, Securities Lending and ETFs).

COLLINE provides a consolidated solution for mitigating credit risk, providing cross product collateral management, aggregation and optimization. Through its functional flexibility, COLLINE enables clients to manage their own requirements according to individual priorities and regulatory obligations:
COLLINE OTC—market leading functionality including legal agreement repository supporting CSA, SCSA and umbrella agreements, flexible margin calculation and configurable workflow, reporting and reconciliation.
COLLINE REPO and SEC LENDING Module supports front-to-back margin operations for all of an institutions REPO and SEC LENDING agreements including optional mark-to-market calculation and exposure profiling.
COLLINE CCP/Clearing Workflow—supporting both house and client clearing requirements. Validation of CCP and broker calculations with configurable margin process definition and cash flow management to support multiple clearing house models on a single platform.
COLLINE Optimisation provides configurable technology to enable real-time algorithmic calculations, according to user-defined rules, goals and evolving priorities.

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Company description

Consultancy services

Markit provides performance benchmarking, exposure calculations and structural analysis for securities lending programmes.

The consultancy team has many years of consulting and practitioner experience in securities finance and program analysis. The team draws on the most globally comprehensive daily stock loan database available dating back to 2002. It tracks $2 trillion on loan from a pool of $15 trillion of securities in the lending programmes of over 20,000 institutional funds.

Securities finance consulting provides fully independent research and advice to institutions already active, or considering becoming active, in the securities finance market. This includes repo, securities lending and prime brokerage activities.

With a reporting infrastructure built around the unique securities finance data set, the consulting team have a proven track record in providing:

- Performance benchmarking, covering periodical securities lending performance compared against a predefined, comparable peer group
- Programme evaluation, including indemnities, exclusives, fee splits and compliance
- Exposure reports, spanning counterparties, loan/collateral matching and peer group comparisons
- Collateral reviews and spotlight surveys

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Company description

Data services

Markit is the leading provider of securities lending data, tracking short selling and institutional flow across all global markets.

Through its history spanning over 10 years the company has brought transparency to the market, helping beneficial owners and custodians benchmark the effectiveness of their securities lending activities. Our analytics are used by lenders and borrowers to assess rates, availably, squeeze risk and make better informed investment decisions. Content is sourced directly from market participants including prime brokers, custodians, asset managers and hedge funds.

The database covers:

- Over 3 million intraday transactions with $2 trillion on loan
- $15 trillion of securities in the lending programs of over 20,000 institutional funds
- Over 10 years history

The service is available through datafeeds, an API, web applications and an Excel toolkit with integrated datasets including Markit's dividend forecasting and ETP and US dollar Repo data. The securities lending data is available on the major market data platforms including Bloomberg, FactSet, S&P CapitalIQ and Thomson Reuters.

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17 offices located in EMEA, Asia Pacific and the Americas.

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Company description

Leveraging on 30 years of experience, Murex is a leading provider of integrated trading, risk management, processing and post-trade solutions for sell- and buy-side financial institutions. Our multi-award winning MX.3™ platform offers unrivalled best-of-breed capabilities front-to-back and unparalleled asset class coverage.

MX.3™ for collateral management and securities finance overcomes the challenges of segregated functions, activities, and trading desks, and offers a comprehensive cross-activity margin management and collateral inventory solution for cash and securities, supporting optimisation and regulatory compliance.

Key features include:
- Complete collateral lifecycle processing
- Real-time enterprise inventory
- Collateral optimisation engine and integration APIs
- IM calculation engine
- Embedded collateral eligibility, concentration rules and limit control
- Packaged interconnectivity
- OIS/CSA OTC pricing/valuation

Omgeo

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Company description

Omgeo, a wholly owned subsidiary of the Depository Trust & Clearing Corporation (DTCC), automates trade lifecycle events between investment managers, broker-dealers and custodian banks. The firm enables 6,500 clients and 80 technology partners in 52 countries to seamlessly connect and interoperate. By automating and streamlining post-trade operations, Omgeo enables clients to accelerate the clearing and settlement of trades, and better manage and reduce their counterparty and credit risk. Omgeo's strength lies within its global community and its ability to create solutions to enable clients to realise clear returns on their investment strategies, while responding to changing market and regulatory conditions.

Omgeo's robust collateral management platform, Omgeo ProtoColl, offers a holistic view into a firm's exposure while enabling automated straight-through-processing in order to manage margin and collateral calls across the entire trading operation. The automation of the collateral management lifecycle reduces manual intervention, thus enabling firms to increase operational efficiency while making smarter, more effective use of their collateral and subsequently reduce counterparty risk. Omgeo ProtoColl's rules-based approach to collateral management allows clients to build custom algorithms supporting risk mitigation by:
- Optimizing assets for delivery
- Automatically evaluating delivered collateral for eligibility
- Routing transactions for validation and settlement
- Highlighting high-risk transactions for approval

With Omgeo ProtoColl, firms can fundamentally change the way they manage their collateral and its associated risks, without the need to create costly, manually intensive operating models. Its rules-based approach is simple, yet powerful, providing clients with a cost effective, automated approach to risk management. Omgeo and the DTCC remain committed to providing automated collateral management offerings to facilitate straight-through-processing solutions to help our clients meet their regulatory requirements.

For more information please visit: www.omgeo.com/protocoll

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Company description

Rule Financial is a specialist global consulting firm focused on delivering management consulting, programme and project management, user experience design, technical strategy and implementation services for financial services firms. Headquartered in London, we support our clients from London, New York, Toronto and Boston and deliver technical design, implementation and support services from our nearshore facilities in Poland, Spain and Costa Rica.

Rule Financial specialists provide advisory, execution and support services to the world's leading financial institutions. Our domain specialisms include: securities finance, prime services, risk management, trading, legal and compliance and operations. Our delivery specialisms include: advisory and execution services in system development, user-centric design, software development, integration, testing, on-going support and IT outsourcing.
We offer our clients end-to-end solutions that solve their complex business and IT issues. Our specialists have a deep understanding of the pressures faced by financial organisations and many of our recent engagements have included strategic consultancy around OTC derivatives regulation and the implications of central clearing on integrated systems and collateral management processes.

Rule Financial is part of the GFT Group, a global technology partner and one of the world's leading IT solution providers in the banking sector.

Securities Services

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Company description

SIX Securities Services provides a comprehensive range of post-trade solutions. This includes pan-European clearing, International and Swiss custody services, a broad range of exposure management solutions in the form of tri-party collateral and Repo services. SIX Securities Services is one of only three CSD-type institutions in Europe with proven cross-border experience.

SUNGARD®

Company description

Apex Collateral was specifically built to centralise the trade, management, and optimisation of collateral assets on a single platform thus overcoming silos, reducing the cost of funding collateral and improving revenues through proactive collateral trading. Robust and flexible operations tools respond to the regulatory imperatives that have transformed collateral management.

A modular structure allows customers to pick and choose the elements of the platform that best fit their requirements. Six key innovations set Apex Collateral apart:

- Lean Operations provides a highly efficient process platform to help cope with the increased collateralisation volume, complexity and regulatory requirements operations teams must handle.
- Enterprise Inventory provides a single, consolidated, real-time view of the avaliable collateral inventory and liquidity requirements across the enterprise
- Collateral Optimisation is the key driver for change in the collateral management infrastructure within many institutions. Apex Collateral is unique in using numerical optimization techniques to solve the twin problems of optimization: complexity and scale.
- Initial Margin Optimisation helps calculating, validating and minimising VaR based initial margin requirements an institution will have to post for centrally cleared and bilateral trading.
- Collateral Analytics holistically models the risk in the collateralisation programme to changes in underlying market conditions, prices, credit ratings and beyond.
- Collateral Transfer Pricing facilitates the calculation and allocation of the funding cost of collateral of the underlying trading activity.

SunGard provides the only solution to manage, trade and optimise assets on a single platform.

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