

## To Clear or not to Clear...Collateral is the question

With the regulatory response to the global financial crisis now moving into the implementation phase, the practical ramifications of these new measures are becoming increasingly clear. The fundamental overhaul of the over-the-counter ("OTC") derivatives markets – as stipulated by the G-20 in 2009, and subsequently articulated in Title VII of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act"), the European Market Infrastructure Regulation ("EMIR"), and equivalent legislative measures in Japan, Singapore, Hong Kong and other G-20 members – is a key element of the reform process. While a great deal of attention has been focused on the operational burdens of adapting to the new market environment, there are also significant portfolio management-related issues to be both addressed and resolved. In particular, portfolio managers need to take into account the imminent material change in collateral requirements if the investment process is not to be unduly constrained, nor excessive costs incurred.

### OTC derivatives reform

The principal objectives of the new legislative measures include enhancing transparency and centralising counterparty credit risk to allow them to be managed more effectively. The leverage and opacity historically associated with the bilateral OTC derivatives model are seen to have contributed to both the transmission and amplification of credit losses across the financial system during the financial crisis, resulting in a systemic dislocation of markets, the consequences of which may be with us for many years to come.

Whether this assessment is fully or partially correct, and whether or not the subsequent reforms are an appropriate response, is not the focus of this paper. We assume that the current phase of regulatory implementation will proceed as planned and that market participants will accordingly be required to manage the transition to the new model through late 2012 and 2013. Additionally, it is important to note that many regulatory initiatives affecting this space, including the Dodd-Frank Act and EMIR, as well as the related rules under each, are not yet completely harmonised on many important matters, including which products will be in scope in each regime.

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To recap, the principal features of the post-reform OTC derivatives market include:

- the standardisation of eligible OTC derivatives contracts;
- mandatory trading of OTC derivatives on exchange or equivalent electronic platforms;
- mandatory clearing of eligible OTC derivatives through central counterparties (“CCPs”);
- the collateralisation of bilateral (i.e. uncleared) OTC derivatives trades;
- the reporting of cleared and bilateral OTC derivatives activity to trade repositories.

*“51% of the global interest rate swap market is now cleared”*

These measures are being implemented at varying speeds across the different jurisdictions. Regional variations in emphasis are evident; for example, several smaller markets will not implement trade execution rules, at least in the initial phase. The commonly adopted requirements everywhere, however, are mandatory clearing of all eligible OTC derivatives contracts through CCPs, and reporting to trade repositories.

The role of the CCP as the locus for centralising counterparty credit risk, and for ensuring that risk is properly collateralised is at the heart of the new regulatory regime, which in many respects resembles the long-established exchange-traded derivatives market. A number of existing and new CCPs have stepped up to clear OTC contracts, and market participants increasingly have a good degree of choice of CCP to clear their OTC derivative trades.

Considerable product uniformity is required for clearing to be practical. As a consequence, the pace at which OTC derivatives are being migrated to the cleared market model depends to a substantial degree on how readily OTC derivatives can be standardised. Today, interest rate swaps and credit default swaps are already widely cleared; the International Swaps and Derivatives Association (“ISDA”) reports that 51% of the global interest rate swap market (which itself makes up over 80% of the gross notional volume of the total OTC derivatives market) is now cleared (although so far this is mainly dealer-to-dealer business).<sup>1</sup>

CCPs report growing volumes across all cleared product types and continue to expand the range of contracts that are accepted for clearing. For example, CCPs are beginning to offer clearing of FX non-deliverable forwards and FX options contracts. However, many other OTC derivatives contracts are yet to be standardised and will continue to trade bilaterally. As we will discuss, this bilateral trading will also be subject to collateralisation and disclosure requirements under the Dodd-Frank Act – and will be substantially more capital-intensive relative to past experience.

### **How are institutional investors adapting?**

Today, the bulk of cleared derivatives activity involves transactions between established banks and OTC derivatives dealers. Most of these banks and derivatives dealers are members of the various CCPs. The cost and operational overhead of CCP membership makes it unlikely, in our view, that any but the very largest institutional investors transacting in OTC derivatives would contemplate direct membership of a CCP.

Instead most institutional investors will select clearing brokers to gain access to the CCPs. While so-called “client clearing” is still in its relative infancy, some buy-side institutions have already begun actively clearing in anticipation of the mandatory requirement; others are planning for the transition to clearing and modelling the investment and operational implications of the new rules.

<sup>1</sup> ‘Response to 1st ESMA Discussion Paper on Draft Technical Standards for the Regulation on OTC Derivatives, CCPs and Trade Repositories’, AFME/BBA/ISDA, 20 March 2012, p.1.

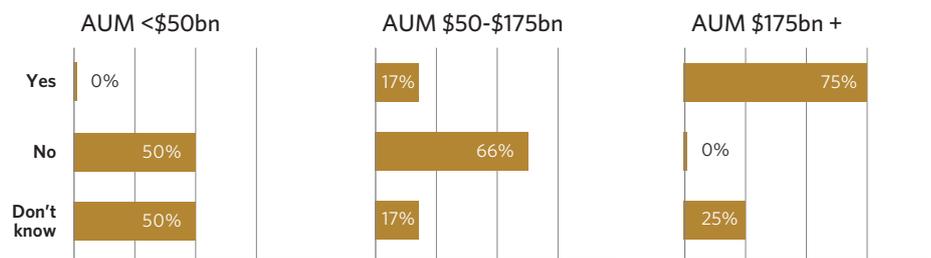
Recent evidence suggests that considerable work remains to be done by “buy-side” market participants, such as institutional asset managers, pension funds, insurance firms, hedge funds and corporate treasuries. In March 2012, Rule Financial conducted an OTC Clearing and Collateral Management survey (the “Clearing and Collateral Survey”) which looked at several issues, including how banks and dealers are planning to interact with their clients in respect of central clearing; the impact of regulatory changes on buy-side institutions and how they are adapting to those changes.

The themes which emerged from the survey responses centred on uncertainty over the timetable for implementing regulatory changes and the challenges in preparing for the transition. While survey respondents recognised the potential material impact of new collateral requirements on investment and operational processes, only 20% of buy-side respondents had finalised their target processes. This means that projects have been, or will be, as the case may be, compressed into the latter half of 2012 in order to meet regulatory deadlines.

Straw polls subsequently conducted by Rule Financial at the June 2012 Institutional Investor COO/CFO Roundtable and at the May 2012 Markit Outlook for OTC Markets event in London reiterated the findings of the Clearing and Collateral Survey. The straw polls found that with respect to the new regulations: 21% of respondents had “no clue”, 55% were “hazy”, 16% were “clear” and 8% were “crystal clear”. The June poll highlighted that small and medium-sized institutional investors in particular feel exposed in terms of their preparedness for the new market structure:

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### Is the buy-side adequately prepared?



Source: European Institute COO/CFO Roundtable, 13-14 June 2012. Electronic survey of 35 participants.

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*“Buy-side firms should approach the preparation of legal documentation with care...”*

Understandably, many buy-side parties have taken a wait-and-see approach in the face of uncertainty over the final scope and timing of the new rules and the competing demands of numerous strands of regulatory change. However, as the rules crystallise, the need to address open issues becomes pressing.

The operational and risk management challenges associated with the transition to the cleared market model are substantial; these include the preparation of legal documentation, establishment of market access and connectivity, on-boarding and account opening at clearing brokers, and the implementation and management of complex margining and collateral processes.

Increasingly, clearing brokers, tri-party collateral agents, custodians and infrastructure vendors are offering products and services to address the specific needs of their buy-side clients. Additionally, buy-side firms should approach the preparation of legal documentation with care to ensure that funds are not temporarily shut out of the market for cleared OTC derivatives.

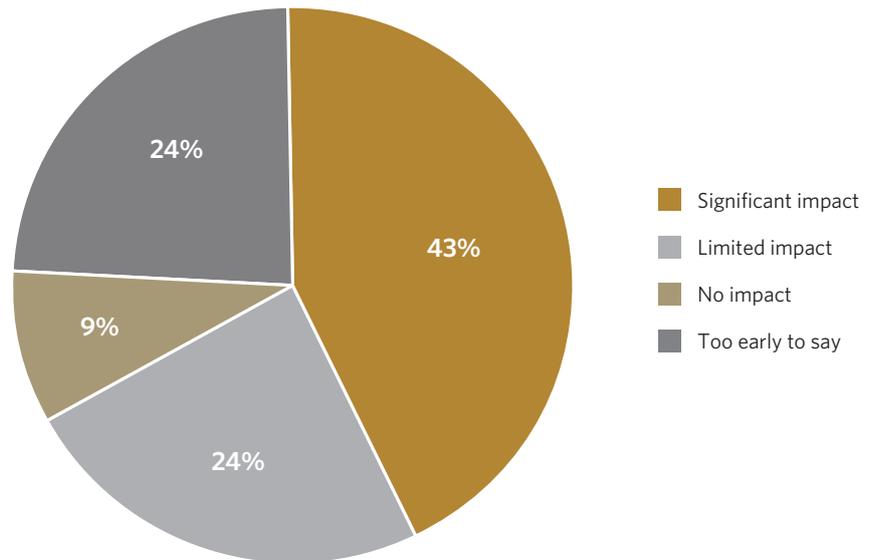
Investment professionals should take the lead in establishing a clearing and collateral strategy as the impact of the new market model on the portfolio management process will also be substantial. In particular, current and anticipated future investment requirements should drive the selection of CCPs to clear derivatives. Buy-side firms will need to evaluate the relevant collateral and capital requirements associated with central clearing since there could be potentially significant effects on investment strategy and day-to-day portfolio management.

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Since current industry views on the materiality of collateral charging on investment returns are mixed, we believe that some institutions have yet to fully quantify the impact and to adapt their investment processes accordingly:

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### Buy-side expectations of impact of collateral charging on returns



Source: Rule Financial OTC Clearing and Collateral Management Survey, March 2012.

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### The collateral challenge

In many respects, the clearing of OTC derivatives through a CCP offers benefits to institutional investors. In theory, valuation and pricing should become more transparent, liquidity should improve and the potential for systemic market disruption should be diminished. In the derivatives clearing process, CCPs manage the credit risk through a range of controls and methods, including a margining regime that imposes initial margin and variation margin requirements on parties to cleared transactions, and the establishment of a default fund.

The CCP will call for initial margin to cover its potential future exposure; this is the potential cost of closing out the positions of a defaulting clearing member under “normal” market conditions. Clearing members are also required to make contributions to the CCP’s default fund, which stands as a further line of defence against multiple counterparty failures in stressed markets. The CCP’s pool of initial margin, default fund contributions from clearing members and the CCP’s own capital together act as a buffer to absorb potential credit losses associated with the failure of one or more clearing members.

Market participants who trade exchange-traded and bilateral OTC derivatives should be familiar with variation margin, which covers mark-to-market exposures. It is expected that CCPs will not only make end-of-day variation margin calls but also intra-day margin calls as well.

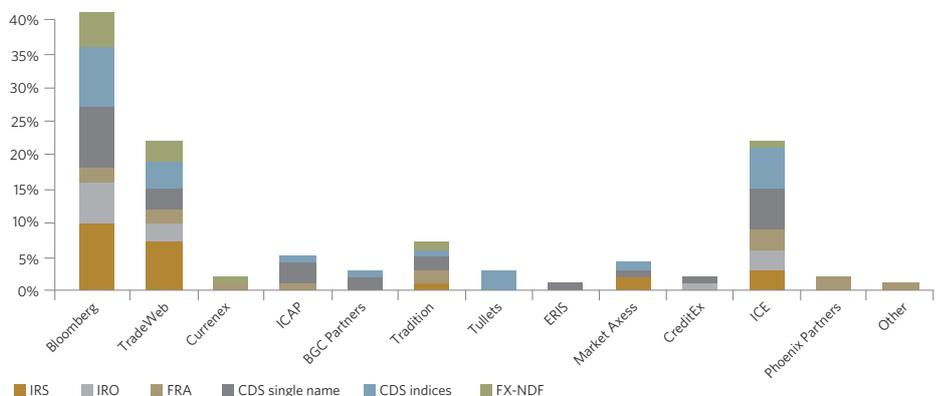
Initial margin requirements will challenge buy-side OTC derivatives users for three reasons.

- Many institutional investors have not historically been required to post initial margin in respect of bilateral OTC trades conducted under ISDA Credit Support Annex (“CSA”) agreements, and therefore, unlike hedge funds generally, have not had to accommodate initial margin obligations in the portfolio management process. This will likely change under the new rules, irrespective of whether OTC derivatives trades are cleared or not.
- CCPs generally have restrictive eligibility criteria for determining acceptable margin collateral. Most CCPs accept high-quality government and agency bonds or cash for initial margin, and cash alone for variation margin. The recent Basel Committee on Banking Supervision-International Organisation of Securities Commissioners (“BCBS-IOSCO”) consultative document on margining of non-cleared derivatives discusses a broader range of eligible asset categories including high-quality corporate bonds, main-index equities and gold.<sup>2</sup> The most recent European Securities and Markets Authority (“ESMA”) Technical Standards specify parameters against which eligibility should be assessed, leaving the specification of eligibility criteria in the hands of the CCPs.<sup>3</sup> Although there is clearly market pressure for CCPs to broaden their margin eligibility policies, we nevertheless expect most CCPs to maintain conservative collateral standards.
- The amount of initial margin that has to be sourced can be substantial. A typical initial margin obligation for a 5-year vanilla interest rate swap might be equivalent to 1-3% of the notional value of the contract. Long-dated or complex contracts, on the other hand, may require substantially more collateral because of the greater potential future exposure; perhaps 10% of notional for a 30-year and 15% of notional for 50-year tenors. Posting of initial margin can create acute problems for institutional investors since they generally establish directional positions. OTC derivative dealers are more likely to run matched books and therefore face much more modest initial margin commitments due to the benefits of netting.

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The severity of the collateral shortage is also a function of the evolution of the CCP market. The market appears to be moving from a relatively consolidated structure, in which a small number of large CCPs hold dominant positions in particular regions and contract types, to a much more competitive structure in which existing and new CCPs clear equivalent contract types. This fragmentation was reflected in buy-side respondents’ expectations of future OTC derivatives execution and clearing activity in the Clearing and Collateral Survey:

### Buy-side’s predicted execution venues

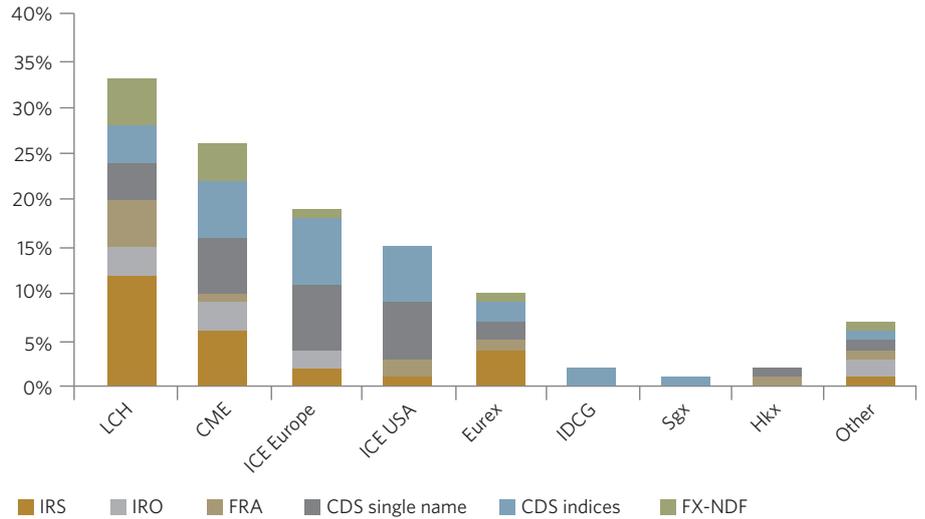


Source: Rule Financial OTC Clearing and Collateral Management Survey, March 2012.

<sup>2</sup> ‘Consultative Document: Margin requirements for non-centrally-cleared derivatives’, BCBS IOSCO, July 2012, p.22

<sup>3</sup> ‘Consultation Paper: Draft Technical Standards for the Regulation on OTC Derivatives, CCPs and Trade Repositories’, ESMA, 25 June 2012

**Figure 3a - Buy-side's predicted CCP activity**

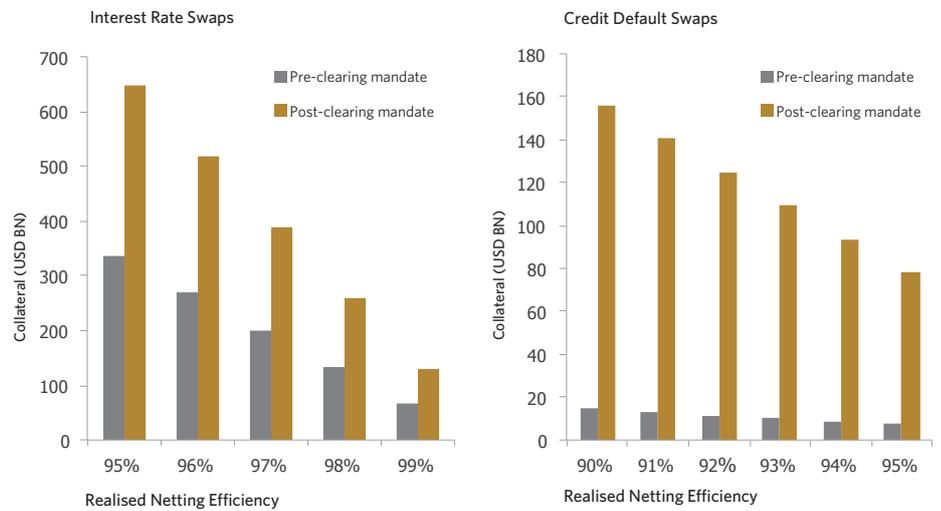


Source: Rule Financial OTC Clearing and Collateral Management Survey, March 2012.

In the long run, we expect a degree of consolidation amongst CCPs. However, in the short term clearing activity will likely fragment and the benefits of multi-lateral CCP netting will be diminished. Analysis by the Bank of England of the Interest Rate Swap and Credit Default Swap markets illustrates that a diminution in realised netting efficiency sharply increases the collateral burden:

*“The impact of proposed EMIR requirements for collateralisation of OTC derivatives trades was calculated to result in an annualised yield drag of 2% for pension funds and 2.5% for insurance funds.”*

**Interest Rate Swaps/Credit Default Swaps**



Source: Bank of England Financial Stability Report, Issue 31, June 2012.

Research carried out by the Investment Management Association (“IMA”) identified as ‘not unusual’ the requirement for CCP-eligible collateral equivalent to 20% of the investment value of test portfolios in order to be able to meet initial and variation margin obligations on typical OTC derivatives strategies under mandatory clearing.<sup>4</sup>

The impact of proposed EMIR requirements for collateralisation of OTC derivatives trades was calculated to result in an annualised yield drag of 2% for pension funds and 2.5% for insurance funds, due principally to the allocation of 10-20% of portfolio assets to cash or

<sup>4</sup> ‘IMA response to European Commission public consultation on Derivatives and Market Infrastructures’, Investment Management Association, July 2010, p.14 and Annex A

near-cash to meet potential variation margin calls. The compounded effect on portfolio assets over time is clearly very material.

The Bank for International Settlements published a detailed analysis of the incremental initial margin impact of derivatives dealers in March 2012.<sup>5</sup> The impact on non-dealer market participants was also acknowledged. The BIS calculated incremental collateral requirements for interest rate swaps of \$250 billion, \$470 billion and \$700 billion under low, medium and high stress scenarios, respectively. The incremental collateral requirements for credit default swaps were calculated to be \$25 billion, \$168 billion and \$319 billion under low, medium and high stress scenarios, respectively.

Additionally, the margin requirements associated with cleared FX products and all bilateral OTC derivatives under the new laws and regulatory requirements point to an incremental collateral requirement under reasonable assumptions of between five hundred billion and one trillion U.S. dollars.

### Sourcing CCP-eligible collateral

How can the collateral sourcing problem be addressed? The potentially distorting effects on portfolio structure of carrying additional CCP-eligible securities or cash could be severe enough. However, some funds will be unable to hold eligible collateral at all, because of mandated restrictions. For example, a corporate bond fund that uses credit default swaps must source eligible collateral if the fund wishes to continue to participate in OTC derivatives markets.

One option is to use the repo or securities lending markets to raise cash or eligible assets. However, some institutional investors may not have the in-house facility to access these markets; and again, modifications to investment mandates may be required.

Furthermore, CCP-eligible assets are expensive to borrow. These assets are already used intensively in the secured lending markets for funding and liquidity management purposes, will become increasingly in demand by institutions facing Solvency II Directive and Basel III capital and liquidity requirements, and are much sought after by investors under current market conditions.

The outcome will likely be the so-called “collateral crunch”, whereby the intensity of demand for the highest quality collateral-eligible securities results in low (and in some case, negative) yields on those assets. This is why estimates for the value of liquid assets required to satisfy the incremental demand for CCP-eligible collateral extend into the trillions of dollars.

The efficient sourcing and deployment of CCP-eligible collateral assets therefore becomes critical if anything like current levels of activity and returns are to be sustained.

Collateral upgrade – or “transformation” – could be an alternate route for obtaining CCP-eligible collateral for those firms that cannot, or prefer not to, enter the securities financing markets directly. Collateral upgrade or transformation may be available through clearing brokers or custodians. The collateral transformation process allows customers of a clearing broker to swap lower-rated securities that do not meet CCP-eligibility standards for government bonds, high quality securities, or cash that can then be passed to the CCP.

Collateral transformation, however, will be a capital-intensive process for the clearing broker and our sense is that only preferred clients will be supported in this way, leaving others to seek alternatives.

*“The collateral transformation process allows customers of a clearing broker to swap lower-rated securities that do not meet CCP-eligibility standards for government bonds, high quality securities, or cash that can then be passed to the CCP.”*

<sup>5</sup> ‘Collateral requirements for mandatory central clearing of over-the counter derivatives’, BIS Working Paper No. 373, Bank of International Settlements, March 2012 pp.26-8.

Two other issues are apparent. First, the effect of incremental haircuts as a fund borrows securities and then delivers transformed collateral to the CCP could result in substantial over-collateralisation. This might be problematic in the event that the fund's clearing member falls into bankruptcy, as the CCP could return the final form of collateral that it received. This illustrates neatly the problem that risk cannot be totally eliminated from the financial market processes, but instead merely redistributed.

Second, collateral transformation, whether performed directly or through an agent, introduces additional costs in the form of fees and operational overhead which must be borne by the fund.

The performance drag implied by the new collateral requirements has led some market participants to lobby for exemptions, with some success. European pension funds will not be required to comply with mandatory clearing of OTC derivatives under EMIR for at least three years, for example. This, inevitably, is not the end of the story though, since the influence of parallel strands of regulatory change must also be considered.

### **Basel III**

One such strand is the Basel III capital adequacy standard, which reinforces the prevailing capital requirements associated with counterparty credit risk and, among other things, introduces new capital charges that apply to derivatives exposures generally and mark-to-market counterparty losses through a Credit Valuation Adjustment ("CVA") process specifically. Buy-side OTC derivatives users should be aware of the impact of the new capital requirements on their OTC derivatives counterparties, as the treatment of trade exposures and posted collateral will make a substantial difference to the cost of their OTC derivatives activity.

Clearing members of a qualifying CCP must apply a flat 2% risk weight to trade exposures for the purposes of calculating their counterparty credit risk capital charge. CCP default fund contributions must also be reflected in capital.

*"Buy-side OTC derivatives users should be aware of the impact of the new capital requirements on their OTC derivatives counterparties, as the treatment of trade exposures and posted collateral will make a substantial difference to the cost of their OTC derivatives activity."*

A bank accessing a qualifying CCP as a client of a clearing member faces the same 2% risk weight if account segregation and portability requirements are met; that is, if arrangements are in place to transfer the client's positions and associated collateral to another clearing member of the CCP in the event that the client's original clearing member defaults or becomes insolvent, and certain legal review requirements are met.

An intermediate risk weight of 4% is applied if the client is exposed to loss in the event of the joint default or insolvency of both the clearing member and other of the clearing member's clients, but is otherwise protected. Alternatively, if the client is exposed to loss if either the clearing member or one of the clearing member's clients default or become insolvent, the client's exposure must be treated as a bilateral trade, leading to a substantially higher capital charge.<sup>6</sup>

In general, equivalent counterparty credit risk capital charges also apply to collateral posted by a client to a clearing member, or by a clearing member to a CCP. Client collateral posted to a clearing member or CCP is not subject to a counterparty credit risk capital charge if it is held in such a way that it remains bankruptcy-remote from the clearing member or CCP, for example at a custodian.<sup>7</sup>

In addition to the default risk capital requirements for derivatives counterparty credit risk determined under the standardised or advanced approaches for credit risk, banks must also add capital charges to address the risk of mark-to-market losses on CVA risk to OTC derivatives. The new CVA capital charge will apply only to exposures arising from OTC derivatives trades not cleared through a qualifying CCP; trades with a qualifying CCP are exempt. These changes can therefore be seen as an incentive to encourage the migration of OTC derivatives activity from the bilateral to the centrally-cleared model.

When a fund approaches a dealer to execute a bilateral OTC derivative trade, the increase in the capital (or the cost of establishing the mitigating hedge) that the bank will be required to set aside will be reflected in the pricing of the trade. The precise impact will vary depending on the type of trade, whether collateral is provided, the incremental impact of the trade on the fund's overall OTC derivatives portfolio (the dealer's overall counterparty exposure could be reduced) and on the perceived riskiness of the fund as a counterparty. The impact could be material, especially where large notional values are being transacted. The derivatives users most exposed to widening bilateral OTC derivatives spreads are those that need to execute trades that are not eligible for clearing and that have long tenors. Many institutional investors and corporate treasuries fit this description.

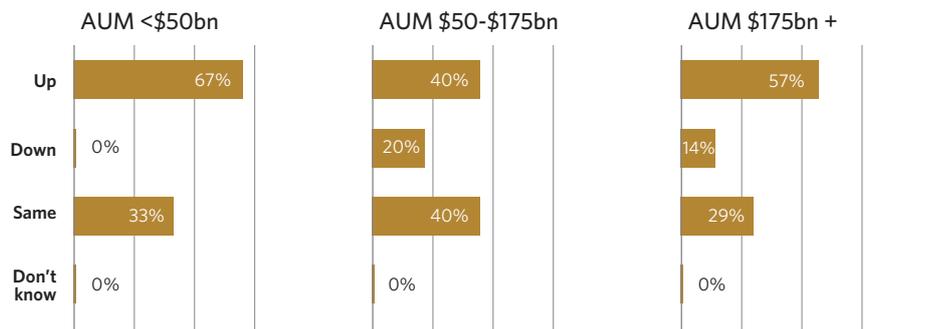
### What now?

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What avenues, then, are open to institutional investors facing these collateral management challenges? It is possible to simply take the view that the appropriate response is a reduction in OTC derivatives activity. In extremis, an institution could simply cease to use OTC derivatives, whether cleared or on a bilateral basis; this appears to be the position taken by Berkshire Hathaway.<sup>9</sup>

However, the popularity of OTC derivatives illustrates their usefulness in implementing investment strategies and hedges; and OTC derivatives are critical to many investment products, such as liability-driven mandates or synthetic ETFs. Rule Financial's most recent survey work indicates that a clear majority of buy-side market participants expect OTC derivatives activity to remain stable or increase:

#### How do you expect your OTC volumes to change?



Source: European Institute COO/CFO Roundtable, 13-14 June 2012. Electronic survey of 35 participants.

Banks, facing comparable challenges, are investing in collateral optimisation projects that seek to maximise the efficiency with which assets are sourced from across the firm to meet collateral obligations. The applicability of collateral optimisation is diminished for institutional investors because of the fragmentation of assets under management into discrete portfolios. However, a more proactive approach to sourcing eligible assets is appropriate to limit the cost impact of the step-change in the collateral burden.

<sup>6</sup> 'Capital requirements for bank exposures to central counterparties', Basel Committee on Banking Supervision, 1 July 2012, p.5-6, para. 114-116.

<sup>7</sup> 'Capital requirements for bank exposures to central counterparties', Basel Committee on Banking Supervision, 1 July 2012, p.6, para. 117-119.

<sup>8</sup> 'Basel III: A global regulatory framework for more resilient banks and banking systems', Basel Committee on Banking Supervision, 1 June 2011, p.31 para. 97.

<sup>9</sup> '2011 Annual Report', Berkshire Hathaway Inc, p.17.

Assuming that regulatory exposure is understood, the following are additional steps portfolio managers may take:

*“There is of course an opportunity here for those institutional investors that are natural holders of CCP-eligible collateral. These assets, as we have seen, will be subject to intense demand from banks and other institutional investors for technical as well as fundamental reasons.”*

- 1. Review OTC derivatives strategy to establish which cleared contracts will be used.** This in turn determines which CCPs need to be accessible, and informs the choice of clearing broker(s). It is worth considering all derivatives activity since we expect some CCPs to offer netting across listed and cleared OTC derivatives in the near future.
- 2. Model the initial margin requirement of the current or projected OTC derivatives portfolio.** This can be done with the support of a clearing member or the CCP itself. This analysis can be extended to establish the portfolio liquidity profile required to meet potential variation margin calls.
- 3. Identify all incremental costs under the new rules.** How does a clearing broker pass through the costs of their CCP default fund contributions? What is their expectation of the impact of the CVA capital charge on bilateral OTC derivatives pricing? What costs are associated with collateral transformation services? What is the cost of credit lines used to guarantee liquidity to meet intra-day margin calls? How will the operational costs of OTC derivatives clearing be absorbed?
- 4. Consider strategic and tactical changes to the investment process.** It may be that acceptable compromises emerge that limit the collateral burden and diminish the cost impact. For example, it may be possible to make greater use of standardised cleared OTC derivative products in place of highly bespoke bilateral contracts.
- 5. Evaluate service offerings that can mitigate costs.** For example, if a mandate is delegated to multiple managers, consider consolidating the collateral management function centrally to make sure any available netting benefits are captured. An outsourced collateral management service provider could be beneficial here. Tri-party collateral management services offer an efficient means of managing different exposures that require collateralisation if the securities lending market is used to raise CCP-eligible collateral. Finally, explore how collateral may be posted bankruptcy-remote from CCPs and clearing brokers to take advantage of the 0% counterparty credit risk weight.

Accordingly, as a matter of priority institutional investors should be engaging with their clearing brokers and custodians to evaluate alternative sources of collateral – and, where necessary, agreeing on changes to investment mandates and counterparty documentation to make sure that all potential benefits are realised.

There is of course an opportunity here for those institutional investors that are natural holders of CCP-eligible collateral. These assets, as we have seen, will be subject to intense demand from banks and other institutional investors for technical as well as fundamental reasons. The ability to lend such assets, subject of course to adequate risk controls, could therefore be a means of offsetting some of the costs of compliance with the new rules as well as augmenting depressed yields. Indeed, many buy-side institutions that shied away from the securities lending markets in the aftermath of the crisis in 2008 are now cautiously re-entering the market in search of incremental returns.

Without question, the fundamental post-crisis regulatory reform of the OTC derivatives markets will have a profound impact on all users of OTC derivatives. For institutions subject to the Dodd-Frank Act, EMIR and equivalent rules, the requirements for executing, clearing, collateralising and reporting OTC derivatives trades pose substantial business and operational challenges. One impact from a portfolio management perspective is the increase in collateral that must be provided to support OTC derivatives activity, whether cleared or not. The danger is that the perceived benefits of central clearing are overwhelmed by the unintended consequence of the costs of compliance being passed through to the policy holder and pension scheme member, for example, whether in the form of constrained, sub-optimal portfolio decisions or the direct costs of adapting to the new market structure.

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We offer our clients end-to-end solutions that solve their complex business and IT issues. Our specialists have a deep understanding of the increasing regulatory pressures faced by financial institutions and a number of our recent engagements have included strategic consultancy and solution delivery around OTC derivatives regulation and the implications of central clearing on integrated systems and collateral management.

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**We invite you to visit [www.rulefinancial.com](http://www.rulefinancial.com) for additional information.**

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