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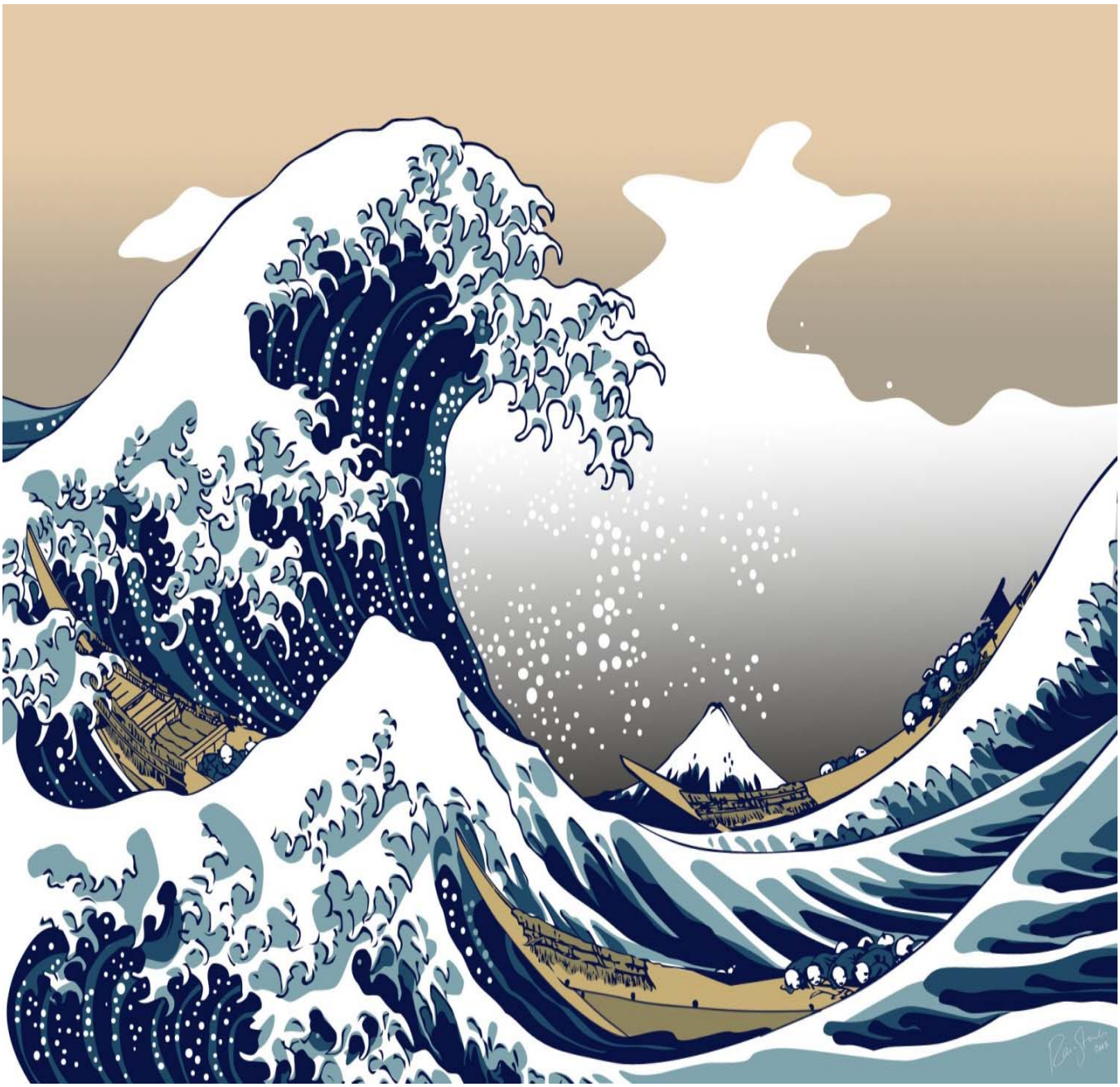

Regulatory sea change for OTC derivatives: The clearing and margining revolution

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Introduction

Over-the-counter (OTC) derivatives markets at large – and their infrastructure in particular – have been a key area of capital markets particularly affected by the regulatory reforms enacted over the past few years. In the wake of the financial crisis, global policymakers (starting with the G-20 agreement of September 2009) agreed on a series of measures designed to improve the transparency and the robustness of the OTC derivatives market. This paper highlights the major changes that have taken place to date and the significant associated changes in the way financial institutions manage the impacted businesses.

There are various differences in the contours of the regulatory agenda in Europe (EMIR/MiFID) vs. the US (Dodd-Frank Act and CFTC/SEC regulations) – most notably in terms of the respective timelines, but also with respect to scope, regulated entities and extent of the measures. However, the pillars of OTC derivatives regulatory reform are fairly comparable across jurisdictions and are broadly anchored to the major stated principles of i) increased transparency and ii) decreased interconnectedness of instutions trading in those markets.

In particular, all OTC derivatives contracts deemed to be standardised will have to be moved to exchanges or electronic trading platforms, and cleared through central counterparties[1]. Moreover, for those transactions that are not centrally cleared, bilateral margin requirements and higher capital charges will be in order along with a swathe of measures designed to improve the risk management and transparency of such markets.

In sum, the major objectives of improved transparency, robustness and decreasing interconnectedness are achieved through the following major pillars of global OTC derivatives reform:

- mandatory reporting to trade repositories
- exchange and/or electronic trading of standardised OTC derivatives
- mandatory central clearing for standardised derivatives
- bilateral margin requirements, higher capital charges and tightened risk management practices for non-centrally cleared OTC derivatives

To date, the end result of this OTC derivatives regulatory avalanche has been a material reduction of outstanding OTC bilateral risk, through compressions and steady migration towards central counterparty platforms, as shown in Chart 1.

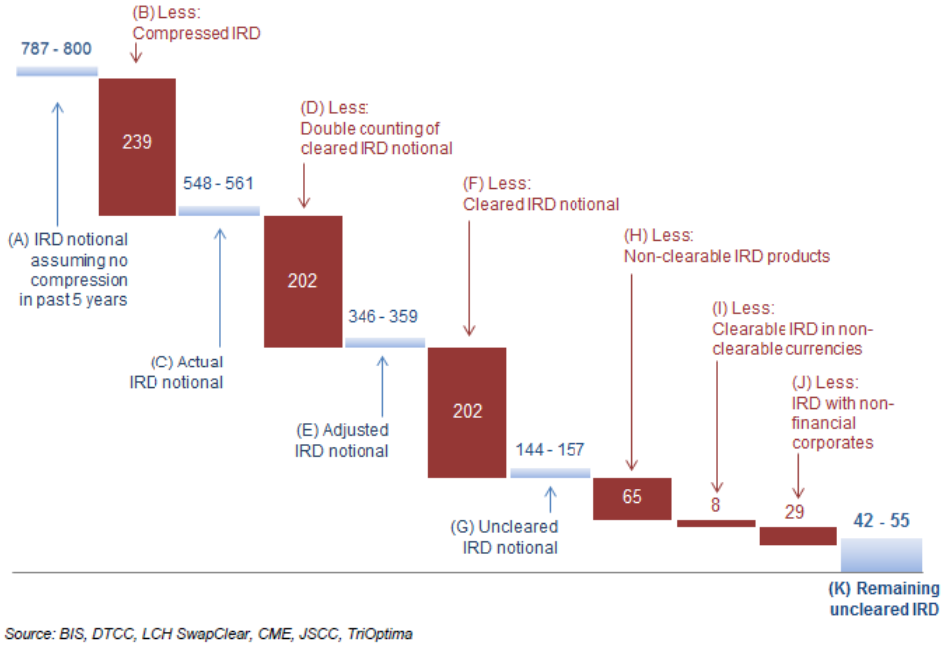

Chart 1*: A smaller, leaner OTC derivatives market*

[1] In a February 2014 paper, ISDA estimated that as of mid-year 2013, 90% of the interest rate derivatives products subject to the clearing obligation to date had been cleared.

1. Mandatory clearing

Counterparty definition

The European Market Infrastructure Regulation ("EMIR") is the European Union regulatory initiative which covers **clearing, risk mitigation and trade reporting**. In Europe, under EMIR, derivatives counterparties will be classified in three categories:

- **Financial Counterparties ("FC"):** FCs are defined as, among others investment firms, credit institutions, insurance and reinsurance undertakings, UCITS and alternative investment funds
- **Non-Financial Counterparties ("NFC")**
- **Non-Financial Counterparties** that are over a certain **"clearing threshold" ("NFC+")**: specifically, an NFC becomes a NFC+ if, on any given day, the aggregate gross notional of outstanding non-cleared OTC derivatives trades that it has in any given asset class (excluding "hedging transactions") exceeds the relevant threshold, defined as follows: EUR 1bn for each of credit and equity derivatives; EUR 3bn for each of interest rate and foreign exchange derivatives; EUR 3bn for commodity and other derivatives collectively

EMIR also defines a wide range of so-called exempt entities (such as central banks and bodies performing similar functions) which are fully exempt, while multilateral banks, EFSF, ESM and public sector entities with explicit guarantees are only subject to the reporting requirement.

EMIR requirements

In line with the G-20 mandated general principles discussed above, EMIR introduces three primary regulatory constraints on OTC derivatives for the financial institutions it regulates:

- **Mandatory clearing of all eligible OTC derivatives,** which applies to FCs and NFC+ only and will be in force from the end of 2014
- **Initial margin requirements and improved risk management metrics for those OTC derivatives that are not centrally cleared.** These risk mitigation techniques includes measures applicable to FCs and NFC+ only (such as daily mark to market or the exchange of collateral and adequate capital to cover non-cleared transactions) and measures applicable to FCs and all NFCs (such as timely confirmation, portfolio reconciliation and compression, dispute resolution)
- **Obligation to report all derivatives transactions to trade repositories,** which applies to FCs, all NFCs and certain exempt entities, as described above

Counterparty type		Trade reporting	Clearing	Risk mitigation *	Daily valuation	Collateralisation of non-cleared transactions
Central banks and member state bodies performing similar functions		Exempt	Exempt	Exempt	Exempt	Exempt
Multilateral banks, European Financial Stability Fund, European Stability Mechanism, and explicitly guaranteed public sector entities		Listed and OTC derivatives	Exempt	Exempt	Exempt	Exempt
FC	All FC	Listed and OTC derivatives	As and when a product becomes subject to mandatory clearing	Non-cleared OTC derivatives	Non-cleared OTC derivatives	Non-cleared OTC derivatives
	Pension schemes	Listed and OTC derivatives	3y temporary exemption	Non-cleared OTC derivatives	Non-cleared OTC derivatives	Non-cleared OTC derivatives
NFC		Listed and OTC derivatives	Exempt	Non-cleared OTC derivatives	Exempt	Exempt
NFC+		Listed and OTC derivatives	As and when a product becomes subject to mandatory clearing	Non-cleared OTC derivatives	Non-cleared OTC derivatives	Non-cleared OTC derivatives

*risk mitigation ex- daily valuation and collateralisation of non-cleared transactions

Table 1*: EMIR requirements by type of trade and type of counterparty*

EMIR vs. Dodd-Frank

As described above, EMIR for European institutions and the Dodd-Frank Act in the US share in part the same objective of strengthening the regulatory framework around the trading, risk management and overall transparency of OTC derivatives.

In particular, the objective to enforce mandatory reporting, mandatory collateral and capital requirements for non-cleared derivatives is shared between Europe and the US. Additionally, non-domestic central counterparties will be recognised, which means cross-border clearing of OTC derivatives should be greatly facilitated.

There are however, numerous differences between the set of rules, which are themselves a source of potential future issues, as the playing field between institutions in different jurisdictions is no longer levelled.

First, with regard to timing, while the clearing and risk mitigation requirements under EMIR are going to be introduced progressively throughout 2014 and early 2015 (the clearing mandate itself is only expected to come into force towards the end of 2014 – following the first CCP authorisation in March 2014), the core requirements under the Dodd-Frank Act have been in force since January 2013. However, since February 2014 this year, the reporting obligation is now an active mandate in both regions.

Second, with respect to the treatment of non-financial counterparties, whereas EMIR explicitly allows for NFC exemptions within certain limits, derivatives regulation under the Dodd-Drank Act applies to all users of OTC derivatives, without distinction of type. There is, however, the possibility for a counterparty to elect to use the clearing exception i) if the counterparty is not a financial entity and ii) the counterparty is using OTC derivatives transactions to mitigate a commercial risk.

Third, with respect to reporting requirements, whereas EMIR applies to both listed and OTC derivatives, the Dodd-Frank Act mandates such reporting for OTC derivatives only. Reporting under Dodd-Frank is expected to be "real-time" while EMIR allows for end-of-day reporting.

Lastly, the definition of what constitutes a standardised contract for mandatory clearing purposes remains relatively fluid:

- The EMIR rulebook adopts so-called "*bottom-up*" and "*top-down*" approaches. In the bottom-up approach, the European Securities and Markets Authority (ESMA) may recognise as eligible classes of OTC derivatives that a given authorised CCP is already clearing or has received authorisation to clear from a competent authority. In the top-down approach, ESMA may of its own accord move (based on factors such as, among others, the relative market standardisation of contractual terms and operational processes for that particular class of products) to notify relevant authorities that a particular class of OTC derivatives for which no CCP has received authorisation should still be subject to the clearing obligation
- In US markets, Dodd-Frank's Title VII defines the clearing obligation, but the determination as to whether a class of derivatives will be standardised and therefore subject to clearing requirements is made by the CFTC, based on submissions made to it by a Designated Contract Market (DCM) or a Swap Execution Facility (SEF). Once a swap is subject to the clearing obligation, it must also be executed on a DCM/SEF

On top of these differences, there remains some uncertainty as to how EMIR is going to be applied to derivatives transactions taking place between EU and non-EU counterparties. Similarly, while it is expected that EU branches of non-EU entities will be subject to the regulatory regime of their home country, this has yet to be fully clarified at the time of writing.

As can be seen from the above, adding to the cost and the burden to implement the changes mandated by these new rules, there is a significant amount of uncertainty about how the competitive field in the impacted markets will look like when rules are in place.

2. Central Counterparties (CCP)

While they have been an important participant in capital markets for a long time, central counterparties (or CCPs) have taken a much more prominent role at the centre of OTC derivatives regulatory reform, as those OTC markets transition from ones where transactions used to mostly occur on a bilateral basis between financial institutions to an infrastructure where the clearing house plays an increasingly important risk intermediation part.

In its most schematic representation, the CCP mitigates the mutual default risk within the network of counterparties (the clearing house members) at centre of which it sits. We provide an illustration of such a network in Chart 2 below, where the central counterparty is represented along with clearing house members[2], end-users (non-members who intermediate trades with the clearing house via the help of a member institution) and the various layers of protections that exist to insulate the CCP from the default risk of its members.

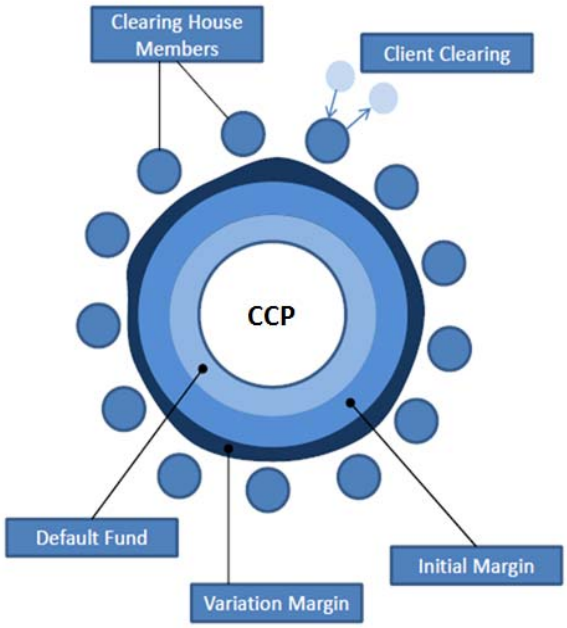

Chart 2*: Schematic representation of the central counterparty model*

The CCP fulfils many operational roles within this network of counterparties:

- The CCP determines the settlement prices on the trades it clears
- The CCP sets the methodology for, calculates and collects the initial and variation margin requirements imposed on all clearing house members in order to provide protection against the default of one of the members
- The CCP is charged with managing the default of any of its members should such an event occur[3]

While the stated aim of this policy-mandated change in the role of the clearing house in the marketplace is to ensure the stability of the financial system by increasing transparency (via the reporting mandate) and strengthening derivatives infrastructure (using the CCP as a buffer), these changes also bring with them a number of challenges.

As the set of products under the mandatory clearing mandate expands, CCPs may experience a rapid extension of their product coverage, with all the associated pressure on risk management, pricing

[2] In the context of this article, we will be mostly concerned with the relationship between the CCP and its members. The secondary network of client clearing relationships brings with it a wide range of additional issues (omnibus vs. individual client segregation, excess margin and collateral use, porting, documentation risk and master agreements) which are beyond the scope of the present paper.

[3] This process may also involve a default managemement committee comprised of the surviving clearing members

methodologies, model validation, default management – especially in light of the fact that as the central arbiter of price within the system, the CCP will need to create a consensus on pricing and margin setting methodologies acceptable to all its members.

Further, as the recipient and custodian of very significant amounts of collateral under its own margining procedures, the CCP will need to manage the sometimes conflicting objectives of its commercial mission (which will lead it to seek returns on the cash posted to it) and the prudent risk management practices required by its newly enhanced role as provider of a market infrastructure that mitigates systematic risk.

Moreover, from the clearing member perspective, while the CCP mitigates a range of issues arising from the treatment of uncollateralised bilateral trades under the new counterparty risk regulatory environment, that exposure to the CCP itself introduces a series of factors the institution will need to manage, including among others the measurement and monitoring of the CCP creditworthiness, the management of its margin position vis a vis the CCP or its indirect exposure to other members through the default waterfall (Chart 3).

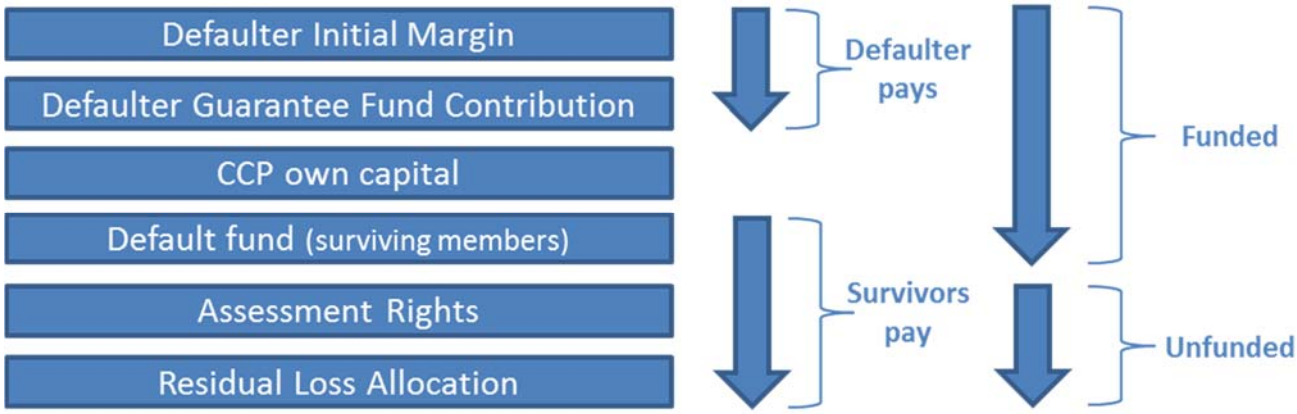

Chart 3*: The typical CCP waterfall structure*

Capitalisation of central counterparty exposures

The introduction of the CCP as a new central point in the OTC derivatives trading infrastructure leads to the definition of new capital charges – to reflect the fairly complex way counterparty exposures are distributed in the waterfall structure (as described above) which determines contingent payments and exposure priority.

Under the recently finalised set of rules[4], the total capital charge – expected to take effect from January 2017 – reflecting the exposure of a clearing member to the CCP (in this context defined as a Qualifying CCP, or QCCP) will be the sum of two components, namely: i) the capital charge against the prefunded default contribution and ii) the capital charge against trade exposures (including exposure to the CCP, to potential clearing clients, as well as the treatment of certain forms of collateral posting).

Default fund contribution

Under the final CCP capital rules, the capital charge a clearing member 'i' will have to apply to their default fund contributions will reflect the capital resources of the CCP, the counterparty credit risk exposures of the CCP and the availability of resources under the waterfall mechanism upon a clearing member default. It is computed as follows:

$$K_{CM_i} = \max\left[\frac{K_{CCP}}{DF_{CCP}+DF_{CM}^{pref}} * DF_i^{pref}, 8\% * 2\% * DF_i^{pref}\right]$$

Where:

- K_{CCP} is the hypothetical capital requirement for the CCP and is determined by multiplying the CCP's total exposure at default (across all members, and including both the member's trades and the client trades guaranteed by the member as well as taking into account available collateral) under the SA-CCR by a risk weight of 20% and the standard 8% capital ratio, i.e.:

$$K_{CCP} = \sum_i EAD_i * 20\% * 8\%$$

[4] BCBS, "Capital requirements for bank exposures to central counterparties - final standard", April 2014

- K_{CM_i} is the capital requirement on the default fund contribution of member 'i'
- DF_i^{pref} and DF_{CM}^{pref} are the prefunded default fund contribution of the member 'i' and the total prefunded default fund contributions of all members, respectively
- DF_{CCP} is the total CCP's own contribution, to the extent that this own contribution to the waterfall is either junior to or pari passu with prefunded member contributions

Together, the DF_{CCP} and DF_{CM}^{pref} terms represent the total prefunded size of the default fund. To the extent that this prefunded amount is large compared to the hypothetical capital requirement of the CCP (i.e. the default fund is larger than the hypothetical K_{CCP}), the factor that multiplies DF_i^{pref} will be small and the capital charge arising from a given clearing member's default contribution may be a limited percentage of the size of such contribution – albeit floored at the equivalent of a 2% risk weight.

Such a mechanism should theoretically ensure adequate incentives for clearing members to ensure sufficient participation of a CCP in the guarantee fund by contributing larger amounts of own resources, in order to keep the capital cost of its own contribution low.

Trade exposures

The final capital rules have seen policymakers return to the flat capitalisation at the 2% RW level for all trade exposures from a clearing member to the CCP that arise from OTC derivatives (i.e. a combination of i) current exposure to the CCP – likely a small intra-day amount, ii) potential future exposure to the CCP and iii) any amount of initial margin that is not bankruptcy-remote, with bankruptcy-remote IM such as that posted in a e.g. segregated account attracting a 0% risk weight).

The member's exposure to the CCP arising from the member's obligation to repay a clearing client for any losses in transaction values upon a CCP event of default will also be facing a risk weight of 2%.

Compared with previous iterations of this rule however, the exposure amount for such trades exposures (mostly through the potential future exposure component) will be computed according to internal model methods if the bank is approved for centrally cleared products, or through the new standardised method recently set forth by the Basel Committee[5] (the SA-CCR).

[5] BCBS, "The standardised approach for measuring counterparty credit risk exposures", March 2014

3. Non-cleared Derivatives

Introduction of the 2-way margin model in bilateral OTC derivatives trading

While the move towards central clearing for a wide range of so-called standardised OTC derivatives has so far been the most visible change from regulatory initiatives and the one that has preoccupied financial institutions the most, a possibly even larger change looms in the non-cleared segments of derivatives markets, as regulators seek to align trading and risk management behaviour in exotic and non-cleared segments to that of standardised and centrally cleared derivatives products.

After a couple of consultation rounds, the Basel Committee (BCBS) and the International Organisation of Securities Commissions (IOSCO) has proposed a series of measures in its final policy paper published in September last year[6], with respect to the margin requirements for non-centrally cleared derivatives.

The key central measure introduced by the document is the introduction of two-way margin for all non-cleared derivatives (with the exception of a limited number of products, such as physically settled FX forwards and swaps, or the FX component in cross-currency swaps), including, like in the centrally cleared / CCP infrastructure model:

- Variation margin (i.e. collateral as protection against the build-up of exposure to a counterparty)
- Initial margin (i.e. initial overcollateralisation to cover for variation margin shortfalls in case the counterparty defaults)

Exemptions

A €50m threshold, applied on a portfolio and consolidated group counterparty basis, has been defined under which IM is not mandatory. More generally, institutions that have less than €8bn of total non-centrally cleared OTC derivatives (i.e. gross notional outstanding) will be exempt from the initial margining rules.

In line with their exemptions from clearing requirements and based on the stated principle that such entities pose little to no systematic risk, sovereigns, central banks and multi-lateral development banks are exempted from both collection and posting of collateral. Likewise, non-financials entities which are deemed non systematically important are not covered by the uncleared OTC rules, to the extent that they are generally exempt from central clearing mandates.

Preserving collateral transparency, liquidity and accessibility

Moreover, drawing lessons from the collateral troubles experienced by the financial system immediately after the Lehman Brothers bankruptcy, policymakers have agreed to an overhaul of collateral rules which is explicitly intended to ensure that collateral posted to and by financial institutions is "*(i) accessible when needed and (ii) provided in a form that can be liquidated rapidly and at a predictable price even in a time of financial stress*". This is in turn achieved through materially strengthened collateral rules, both in terms of eligibility and of the restricted ability of financial institutions to rehypothecate the collateral posted by and to them as part of the margining process.

The first part of this mandate (accessibility of collateral) is addressed through a vastly restricted rehypothecation of collateral, so that in an event of default, initial margin may be immediately identified and used against the shortfalls in the positions of the defaulted counterparty. Twelve conditions govern the ability for a financial institution to re-use the collateral pledged to it by a customer, including, among others: express client consent, client notification, third-party asset segregation, no fourth-party rehypothecation further down the chain and disclosure to authorities, among others). Variation margin on the other hand may be re-pledged.

With respect to the second part of this dual objective (preserving liquidity and optimal realisation of collateral in times of high stress), policymakers have recommended that, with room left open for the idiosyncracies of certain local markets, national supervisors should strictly limit the type of collateral eligible to fulfil margin requirements to liquid and high quality instruments, with the appropriate haircuts to take into account rate, FX or credit risk.

Timeline

As it currently stands, regulators have decided to phase in those new non-cleared derivatives requirements

[6] BCBS, "Margin requirements for non-centrally cleared derivatives", September 2013

throughout 2015-2019, with mandatory variation margin applying to all new contracts from December 2015 onwards, while initial margin is to be introduced in staggered manner throughout 2015-2019, starting with the counterparties with the highest notional of such trades outstanding, and moving towards including smaller entites towards the back end of this period. All changes will be subject to ongoing monitoring, with possibility that the rules may be further refined along the way.

Regulatory consistency, market consensus on internal models and other challenges

These sweeping changes in the way financial institutions are expected to conduct their most sophisticated OTC derivatives businesses pose numerous issues:

- The consistency of the margining rules with other regulatory requirements is expected to be a key challenge. The combination of margining rules and the liquidity coverage ratio for example is likely to compound the collateral pressure
- The alignment of initial margin measurement between institutions with sometimes very different models and approaches may prove to be problematic. Given the fall-back option of relying on the fairly unattractive standardised formula (a percentage of total notional) is likely to be too punitive for many market participants, industry solutions will need to be found to harmonise internal models for IM purposes. Industry initiatives such as ISDA's Standard Initial Margin Model[7] (SIMM) will be a first step in resolving this crucial issue
- In the same vein, the industry and respective regulators will have to address the treatment of cross border discrepancies, whereby for instance intra-group internal models have to undergo different approval processes depending on the jurisdiction in which the trades or the business are taking place
- The procyclicality of the new rules is another important issue; while transparency and prompt monetisation of collateral are useful tools upon the realisation of a credit event, it can be argued that the new requirements may increase collateral pressure ahead of such event (and therefore accelerate its occurrence)

[7] ISDA, "Standard Initial Margin Model for Non-Cleared Derivatives", December 2013

Conclusion

The introduction of mandatory clearing for a wide range of derivatives products, and the associated rise of the central counterparty model as a main intermediary of business in these markets is the source of potential new risks that market participants will need to assess and monitor.

Additionally, the large collateral requirements arising from the compulsory risk mitigation measures for non-cleared OTC derivatives will mean the management of collateral, and the optimisation of its use, are likely to be primary concerns of financial institutions in the near future.

As both the range of standardised products and the clearing house product offering expand, the move towards central clearing will continue to gain traction, allowing multiple transactions with various counterparties to be consolidated into a single counterparty (allowing multi-lateral netting), with its associated margin, capital and operational relief.

For more exotic, less liquid and bespoke products, the market will likely continue to operate on a non-cleared basis, as the risk management and operational treatment of such instruments do not match the standardisation requirements of the central clearing model.

Such drastic changes – across both vanilla and complex products – will have a large range of business consequences that will need to be addressed well ahead of final implementation deadlines, mainly around the following issues:

- Capital, liquidity, credit risk and – as a result of the tradeoff between reduced CCR requirements and increased funding requirements – collateral management and optimisation
- Processes, systems and models especially with respect to the risk management of non-cleared business
- Data management and trade reporting

When viewed through the lens of the additional costs they introduce for financial institutions (not only operational costs, but also real ones via the capital and collateral impact on the larger institution), the new OTC derivatives rulebook is bound to be a very important driver of further consolidation of businesses in the longer run: larger, sophisticated banks will seek to rationalise their presence (compression and novation of trades, strong adherence to higher capital hurdles for new business) while institutions with limited market share and revenues will need to investigate whether to continue competing in this area altogether.

The endgame, as was likely the intent of the policymakers, is likely to be a smaller, leaner OTC derivatives marketplace – but also a significantly more concentrated one as smaller entities drop out, and the importance of the CCP rises.

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