Central counterparties in evolving capital markets: safety, recovery and resolution

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Capital markets – whether for raising funds or transferring risk – are a vital part of financial system. Perhaps even more so in the years ahead as banking is reregulated. The international authorities are working together to simplify the network of transactions by mandating that standardised over-the-counter (OTC) derivatives are centrally cleared. That entails a concentration of risk around central counterparties (CCPs) and so relies upon them being safe and sound. CCPs' risk management is a first line of defence: managing clearing-member positions to reduce the likelihood of default; ensuring financial mitigants to cover potential losses are adequate. Should mitigants be exhausted, CCPs need a comprehensive recovery plan, including ex ante arrangements to mutualise remaining losses amongst surviving members. In case the plan fails, the authorities must be able to resolve a CCP safely without recourse to public funds.

Capital markets are a vital part of the global financial system. As the international authorities reregulate banking, more activity will be intermediated through the capital markets. Higher capital requirements and new liquidity requirements will, over the medium term, raise the cost of holding securities, loans and trading exposures on bank balance sheets. "Originate and warehouse" is likely to be succeeded by "originate and distribute", which is how wholesale banking was meant to work in the first place. Although the role of capital markets has been smaller on this side of the Atlantic than in the United States, I suspect it will grow over the next decade or so.

This underlines the importance of capital markets themselves being safe, sound and effective. Stability is not only about banks![1]

The international community recognises that of course. Hence the measures being taken or planned on shadow banking, credit rating agencies and transparency. But, perhaps most important, the G20 leaders decided in 2009 that the derivatives markets need to be simpler, safer and more transparent. They mandated greater use of central clearing, trading on exchanges (or electronic trading platforms), and reporting of transactions to trade repositories.

1| The importance of central counterparties

The biggest change is that central counterparties (CCPs) will become a counterparty to all trades in standardised derivatives – the buyer to every seller and the seller to every buyer. This will entail a massive increase in the volume of business cleared through CCPs. Perhaps less than half of trades in the USD 250 trillion global interest rate swap (IRS) market were centrally cleared at end-2011. For the USD 25 trillion credit default swap (CDS) market, around a tenth was centrally cleared.[2] The transition is being staggered somewhat, but the direction is clear.

This is not an obscure corner of finance of interest only to technicians. In the first place, the derivatives markets covered by the G20 mandate are used by businesses and, on behalf of households, by investment managers to insure against all sorts of financial risks. More than that, second, central counterparties are increasingly involved in the cash markets – notably repo and equities. These markets are vital to the financial system and the economy.

So it matters enormously that much of the risk in the main derivatives markets and in some cash markets is becoming concentrated on the clearing houses. That simplifies the network of exposures via multilateral netting, and it can assist the management and monitoring of risk. But it is absolutely vital that the risks really are managed effectively. Having concentrated risk on the clearing house, it must be redistributed back to market participants in ways that are clear and which incentivise market discipline. Otherwise, CCPs would be too big or too important to fail.

That is not hypothetical. Markets typically cease to function if a CCP fails and closes abruptly. In 1974, the Caisse de Liquidation failed in Paris, following a default on margin calls when sugar-futures prices fell sharply. In 1983, it was the turn of the Kuala Lumpur Commodities Clearing House, when half a dozen large brokers defaulted following a crash in palm-oil futures. And, most dramatically, the Hong Kong Futures Exchange clearing house (and its guarantee corporation) failed in the wake of the global stock market crash in 1987. The Futures Exchange had to close. Traders faced margin calls on cash market equity positions but, with the futures market closed and the clearing house bust, they could not get margin moneys returned on profitable futures positions. For that and other reasons, the stock market closed too. Hong Kong's main capital market shut down. Reopening the exchanges was no small feat. Ultimately, Hong Kong taxpayers, together with the clearing banks, put up the funds to underpin the Futures Exchange. Major reforms followed.[3]

In those cases, the costs of clearing house failure were felt in the specific, local markets they served. Today – and even more so in the future – the disruption would be felt across the global financial system. That is what requiring central clearing of *global* capital markets means.

1 *See Tucker (P. M. W.) (2011): "Building resilient financial systems: macroprudential regimes and securities market regulation", International Council of Securities Associations.*
2 *Based on TriOptima data.*
3 *See the report of the Hong Kong Securities Review Committee, 1988.*

2| Central counterparties as system risk managers

Seen in that light, the role and financial integrity of CCPs becomes so central that it could be argued that they should be part of the public sector. The case against taking that radical step is, essentially, that privately owned, controlled and managed infrastructure-providers are better at innovation and operational efficiency, which matters over the long term. But the authorities do need to guard against clearing houses thinking of themselves primarily as vehicles for offering their members operational and capital efficiency. Too many clearing houses drifted into that mindset in the decade or so leading up to the current crisis.

The authorities have, therefore, reframed the regulatory, supervisory and resolution regimes for clearing houses. Globally, the key measures are the "Principles for financial market infrastructures" (PFMIs), issued by the Basel Committee on Payment and Settlement Systems (CPSS) and the International Organization of Securities Commissions (IOSCO); and on resolution, the Financial Stability Board's (FSB) Key Attributes of Effective Resolution Regimes for Financial Institutions. In the European Union, the core regulatory measure is the European Market Infrastructure Regulation (EMIR), which is due to be followed over the next few years by a resolution directive for non-banks and infrastructure providers, including CCPs. In the United Kingdom, where prudential supervision of post-trade financial infrastructure is being transferred to the Bank of England, we have set out our planned approach to supervising CCPs.[4] Taken together, these measures amount to the authorities putting in place a framework for determining how resilient a clearing house should be, and what happens if one fails. That is a legitimate and proper role for the authorities, acting in the wider public interest, given the spillovers and social costs of CCP distress. Moreover, the package reflects international agreements, in the interests of fostering a level playing field supportive of capital markets remaining global and integrated.

The driving principle is that CCPs need to do more than just look after their own risks in a narrow way. Their technical policies – for margining, collateral – set the terms of trade in the markets they serve. This is reflected in the CPSS/IOSCO Principles, which require CCPs to act in support of the stability of the broader financial system.[5] In other words, as well as ensuring their own safety and effectiveness, they are, in effect, system risk managers. Twenty-five years ago, the best of them thought like that. They need to do so again.[6] As the Hong Kong Securities Review Committee concluded in the wake of the 1987 crash: "*When everything else is stripped away, the most pressing issue is the management of risk. The focus of this is increasingly… the central clearing houses – indeed [their] prudent operation is perhaps the single most important objective for the market authorities and regulators.*"

2|1 Governance and culture

This means that sound risk management, for themselves and for the system, must be ingrained in the culture of CCPs. To that end, the incentives and reward policies for clearing house executives should not prioritise profit or market share over effective risk management. And the equity of the clearing house must be exposed to a degree of risk.

Where a CCP is part of a vertically integrated group centred on an exchange, the CCP's risk managers must be appropriately insulated from the commercial imperatives that these days can all too easily dominate profit-maximising strategies of the boards of publicly quoted groups. Strong user representation – meaning senior risk managers and others from clearing members – is essential given the mutualisation of risk. Independent directors on boards and risk committees are important too.

4 *The Bank of England's approach to the supervision of financial market infrastructures, December 2012. See* http://www.bankofengland.co.uk/publications/Documents/news/2012/nr161.pdf

5 *See CPSS/IOSCO (2012): "Principles for financial market infrastructures". For example, Principle 2: Governance –* "An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders".

6 *See Tucker (P. M. W.) (2011): "Clearing houses as system risk managers".*

2|2 Absorbing the default of a clearing member

Enough of CCPs' importance and role – how are they to deliver?

CCPs are unusual principal risk takers in that, by definition, they run a matched book: they do not take market risk *directly* via their clearing activities. They are, however, exposed to counterparty credit risk in a big way; and thus to market risk if their members fail. These risks are real because the authorities are committed to not standing behind the solvency of banks and dealers: new resolution regimes will ensure that losses can and will be placed on creditors, which can include CCPs. Clearing houses are, therefore, in the business of reducing the likelihood of a counterparty default and of containing the impact of any such defaults.

In brief, they manage access to their services, and set rules – in the form of contracts with members – that redistribute risk back to their members. To reduce the *probability* of clearing member failure, membership of a CCP depends on financial strength, risk management capability and operational capacity. Once a firm has been given access, the clearing house management must monitor and respond to the risks it brings to the CCP, including large client positions, concentrations, etc. More widely, as required by the CPSS/IOSCO standard, CCPs must contain risks related to tiering arrangements, involving major players clearing through general clearing members.[7]

But the failure of a clearing member can never be ruled out. When that happens, the cost to the CCP of replacing its positions with the defaulting clearing member is uncertain. Until the trades can be replaced or closed out, the CCP will, contrary to its normal mode of operation, be running market risk positions. The failure of a big firm is likely to dislocate markets, so managing those positions will not always be easy. That is why CCPs collect initial margin from members; rebalance at least each day to maintain the required initial margin levels as markets move; keep the required level of margin under review, adjusting as necessary; maintain a default fund in case margin levels prove insufficient; and set rules on the distribution of any losses that outstrip even the default fund's capacity. (The international standards in this area are set out in Principles 4 to 6 of the CPSS/IOSCO PFMIs.)

Judging a prudent level for initial margins is not easy in any circumstances. Reliance on modelling also gives CCPs considerable discretion. And competitive pressures could give CCPs incentives to shade margin requirements to the low side. In that, CCPs are not dissimilar from banks and dealers.

The stakes are high – all the more so because adjustments in CCP margin requirements affect market dynamics. Succumbing to market pressure to relax margin requirements during periods of exuberance and apparent buoyant liquidity, only to tighten them sharply when conditions deteriorate, amplifies swings in market conditions and can exacerbate a crunch. Pro-cyclicality in margining practices is not in the interests of the wider system or, indeed, of CCPs themselves. Maintaining prudent margin levels through benign conditions can reduce the need to tighten requirements as conditions deteriorate. For that reason, the international authorities are establishing frameworks for setting margin requirements for, respectively, CCPs and uncleared trades.[8] Beyond that, there is an important question of whether macroprudential authorities should be able to require adjustments in minimum margin requirements to lean against overly exuberant market conditions. In the United Kingdom, the Bank of England's Financial Policy Committee plans to address this once the global and European Union regime for margining is clear.[9]

Margining is not the be all and end all. The second line of defence available to CCPs is a prepaid default fund, contributed by clearing members. This effectively mutualises the tail risk in the CCP, creating healthy incentives for members to monitor the CCPs' risk management. CPSS/IOSCO have specified a framework for determining the minimum size of such funds. Firms' contributions are effectively "capital" in the clearing house, and so cannot at the same time support tail risks in the banks and dealers themselves. If a clearing member loses their contribution to a CCP's

7 *CPSS/IOSCO PFMI Principle 19.*
8 *For the former, see Principle 6 of the CPSS/IOSCO PMFIs. For the latter, see BCBS and IOSCO (2012) consultative document: "Margin requirements for non-centrally cleared derivatives".*
9 *See the* Record *of the interim Financial Policy Committee's meeting on 16 March 2012.*

default fund, the financial system will be at greater risk if they have used the same capital to lever up their own business and balance sheet. The regulatory regime should reflect that.

All that applies to each CCP in isolation. But over recent years CCPs have been entering into so called interoperability agreements. The authorities must not allow this to give rise to a complex network of exposures amongst CCPs, obscuring the distribution of risk and impeding effective risk management. More work is badly needed on that. Some of it is underway in the European Securities and Markets Authority (ESMA).

3| Recovery of a distressed clearing house

What happens when all those measures prove inadequate? Regulation and supervision cannot focus solely on minimising the *probability* of distress at a CCP. That was one of the mistakes made by supervisors of banks and securities dealers in the years leading up to the crisis that broke in 2007. Infrastructure supervisors are learning from those mistakes.

It is vital that each CCP has a comprehensive recovery plan to ensure that they can maintain continuity of clearing services in the event of multiple member defaults overwhelming their normal defences.

Banks also need such Living Wills of course. But, in contrast to banks, a CCP's recovery plan can be, and should be, written into its rules – into the contract with its members. It must have a set of explicit rules and procedures that allocate losses left uncovered after drawing on the defaulting members' initial margin and the common default fund. That obviously needs to include a well-defined obligation for surviving members to top up the default fund – a specific number of times – after it is exhausted. But even that cannot be enough: even if clearing members were to accept an uncapped obligation, they will not always be able to fulfil those obligations. So CCPs' rules need to give them a richer set of tools, including their being able to apply a haircut to their variation margin obligations, and possibly to the initial margins of survivors. In case those measures proved insufficient, they probably also need rules that permit tear-up of contracts. In the United Kingdom, CCPs will be required, as part of the conditions for authorisation, to have loss allocation rules. Legal regimes need to be configured to ensure that such rules can be enforced.

By making it clear up front that surviving members are on the hook when a CCP's primary loss-absorbing resources prove inadequate, market discipline is enhanced. It should be in clearing members' interests to ensure that CCPs have prudent risk management policies and procedures; and also to judge whether their peers are running dangerous positions through the clearing house. CCP risk management policies and practices must, therefore, be clear to their members.

All of that revolves around maintaining a CCP's solvency in the face of clearing member defaults. But managing recovery in such circumstances will most likely also require liquidity. The need could be significant. CCPs therefore need either prearranged funding lines from banks or a portfolio of resiliently liquid assets that they can use in the money markets.

But we cannot rule out that there will be a shortfall of liquidity, endangering the wider system's stability. To cater for that, central banks will ensure that there are no technical obstacles in the way of their providing liquidity to a solvent and viable CCP at short notice.[10] Central banks are absolutely not committing to provide such support. Private sector liquidity absolutely *must* be the first port of call, and so CCPs should *not* rely on central bank funds in their liquidity planning. There may, however, be extreme circumstances where the amount of liquidity available on the market proves insufficient. Central banks will, therefore, need to be comfortable with a CCP's risk management and its recovery plan but also, crucially, with the available resolution mechanisms. Central banks will not be comfortable lending to a CCP if they have no idea what would happen if it goes into an insolvency procedure.

4| Resolution

In the past, supervisors – whether of banks, dealers or financial infrastructure – did not instinctively like to contemplate insolvency: its occurrence means that their prophylactic efforts and recovery plans have

10 *See Financial Stability Board (2012): "OTC Derivatives market reforms",* Third Progress Report on Implementation*, 15 June 2012, page 48.*

proved insufficient. But the authorities have a duty to ensure that they do not run out of road; they need some control over events rather than just watching as chaos breaks out due to a CCP's insolvency and consequent entry into a standard liquidation procedure.

To be clear, resolution is an alternative to liquidation and, as such, is a last resort. Unlike liquidation, its objective should be to maintain continuity of clearing services or, if that is not possible, to withdraw services in a way that is as orderly as possible, with contained spillovers to capital markets and the rest of the financial system.

CCPs themselves have a big role to play in ensuring that they are resolvable. But, ultimately, resolution planning has to be the responsibility of the resolution authorities. That is because resolution of a CCP involves, in its essence, a reconstruction by the resolution authority of a failed infrastructure-provider – its capital structure, liabilities, operations and management.

To be able to do that, the resolution authority needs a rich set of powers bestowed upon them by a clear statutory framework. The benchmark is set out in the Financial Stability Board's Key Attributes, an international standard endorsed by G20 leaders that jurisdictions must meet. With more systemically relevant activity going through clearing houses, jurisdictions must take early steps to ensure that their resolution regimes also cover CCPs effectively, and soon.

At a minimum, resolution authorities need the power to take control of a CCP that is no longer viable (or doomed to become unviable) and where there is no reasonable prospect of its recovery. At that point, if for whatever reason the CCP's own loss allocation rules have not been exercised in full, it may be enough for the resolution authority to complete that process. The right to effect the CCP's rules should also extend to any outstanding contractual obligations to tear-up contracts or to replenish default funds.

If even those measures are insufficient to cover the CCP's losses and restore it to viability or wind it down in an orderly way, the resolution authority must have other options. Otherwise, liquidation would beckon.

As with other financial institutions, the resolution authority should have the legal power to transfer some or all the assets and liabilities associated with a particular CCP service to a solvent third party which would maintain the provision of those clearing services. If a solution of that kind is not immediately available, the transfer might need to be to a "bridge company", while a more permanent purchaser is sought. The statutory transfer must take effect immediately and without the need to obtain consent from the CCP's counterparties, creditors, members, owners or managers. Work is needed to operationalise this type of resolution strategy.

Another route will be to write down the liabilities of the CCP to a level where it is again solvent and viable. The liabilities of a CCP are typically different in kind from those of a bank – for example, initial and variation margin rather than deposits and bonds. But the principles are the same. This would be the application of what has become known as "bailin" to a CCP. That way, the clearing house may be resurrected.

Whatever resolution tools are employed in a particular case will depend on the circumstances. But any obstacles to effective resolution will need to be removed. For example, one such obstacle is the risk that counterparties exercise termination rights in derivatives and repo contracts. A mass abrupt close-out would be very disruptive, risking contagion to the system through fire sales. Removing that obstacle to orderly resolution will, in the European Union, require amendment to the Financial Collateral Arrangements Directive (FCAD). The Directive was framed before anyone in Europe was thinking about designing resolution regimes to cope with systemically important financial institutions or infrastructure such as CCPs. The draft Recovery and Resolution Directive currently going through the European Parliament cures this problem for banks. It could, and in my view should, be used to cure the problem for resolution of CCPs. The timetable for strengthening resolution regimes must keep pace with the timetable for the mandatory central clearing of standardised derivatives.

5| Conclusion

The reforms of global capital markets put clearing houses at centre stage. The system will not be resilient unless the CCPs themselves are safe and sound and capable of orderly resolution. Globally and in the European Union, steps are underway to deliver just that. They are vitally important. The reform programme cannot be, and is definitely not, just about banks.