



BANK OF ENGLAND

Speech

Central Clearing and Resolution – learning some of the lessons of Lehmans

Speech given by

Sir Jon Cunliffe, Deputy Governor Financial Stability, Member of the Monetary Policy Committee, Member of the Financial Policy Committee and Member of the Prudential Regulation Committee

FIA International Derivatives Expo 2018, London

Tuesday 5 June 2018

When Lehman Brothers failed in September 2008, the bank was a major player in the worldwide derivatives market. Its \$35 trillion portfolio of both cleared and uncleared derivatives represented around five percent of the global derivatives market.

Following its collapse, Lehman's uncleared derivative counterparties filed claims totalling \$51 billion in relation to its derivatives business. In the event, it was four years before the first payments were made to these uncleared derivative creditors, and claims against Lehman's are still ongoing.

The contrast with Lehman's *cleared* derivatives portfolio in CCPs is stark.

Lehman Brothers UK subsidiary had a \$9 trillion cleared interest rate derivatives portfolio at LCH, comprising over 65,000 trades. In the period of extreme market turmoil following the firm's collapse, it took three weeks, rather than four years, for LCH to hedge and close out the entire \$9 trillion position. It used only around a third of the collateral margin Lehman had deposited at the clearing house.

LCH was only one example of the ability of CCPs to dampen the shock of a major credit counterparty failure. The firm had derivative portfolios at a number of CCPs across Europe, the US and Asia. All were auctioned, liquidated or transferred to other clearing participants by the CCPs in weeks, not years. And, with only one minor exception, this was achieved without exhausting the margin collateral the CCPs held.¹

I mention this aspect of the Lehman failure because it illustrates the drivers behind two of the key regulatory reforms we have made as a result of the financial crisis.

First, incentivising and where appropriate mandating the greater use of central clearing for derivative transactions.

And second, putting in place resolution regimes to ensure banks, particularly large, highly interconnected, wholesale market players, can fail without unleashing the disruption that followed the Lehman insolvency.

I want to look today at the progress we have made in the post crisis reforms around derivatives and how we address the risks around the concentration of counterparty risk in CCPs – including what the objectives should be for a resolution regime for CCPs themselves.

And I want to look also at the progress we have made, and the next steps we need to make, in putting in place an effective resolution regime for large banks internationally and in the UK.

¹ The exception was HK Securities Clearing Corp (HKSCC) which made a loss to the CCP of approx. USD 20 mn, including cost and expenses. HKSCC announced it would claim this from LEH's estate. Source Norman, P., 2011. "The Risk Controllers: Central Counterparty Clearing in Globalised Financial Markets"

These reforms are of course interlinked. If banks depend more on CCPs to manage their counterparty credit risk from derivative exposures, they need to be sure that CCPs are resilient and can absorb default shocks, especially at times of market stress.

And CCPs – which exist to reduce risks faced by their member banks – depend on the resilience of their members. CCPs have a major interest in resolution regimes being in place that would allow their members to fail without triggering default and disruption.

Central clearing

The financial crisis exposed complex and opaque webs of bilateral derivatives contracts both between financial firms and with real economy end users. These were often poorly collateralised or not collateralised at all.

As asset prices fell sharply and concern about counterparty credit worthiness grew, bilateral margin calls acted as one of the main amplifiers of stress. Increasing and more unpredictable margin calls generated more selling pressure, further price falls and greater uncertainty. Instruments primarily designed to reduce risk, acted in the crisis as an amplifier of risk.

Greater central clearing reduces systemic risk in derivatives markets and increases the resilience of the derivatives network.

It replaces the complex web of bilateral trades with a more efficient network in which firms can offset positions to reduce the overall counterparty credit risk in the system.

It ensures the robust collateralisation of the remaining net exposures through the margin taken from participants.

And in the event of a default, any losses that exceed the defaulter's collateral margin held by the CCP are mutualised between the members.

As the Lehman experience illustrated, the centralised, rules-based management of a clearing member's default by a CCP, combined with the incentives created by mutualisation enhance the system's resilience and continuity during a stress and brings greater certainty to the default management process for market participants.

Central clearing also brings greater transparency – in the run up to the crisis and during the crisis itself, authorities had very poor visibility over the network of derivatives transactions. That made it much harder to identify risks and the connections between institutions.

Not all derivative contracts are suitable for central clearing.² Where clearing is not possible, the post crisis reforms include similar requirements to margin and report bilateral derivative contracts.

But the additional mutualisation and central default management benefits of central clearing, justify in my view, the authorities efforts since the crisis to move derivatives that are suitable for clearing onto CCPs.

These efforts have been successful. Reforms since the crisis have led to a very substantial increase in the use of clearing services for both exchange traded and over the counter derivatives.

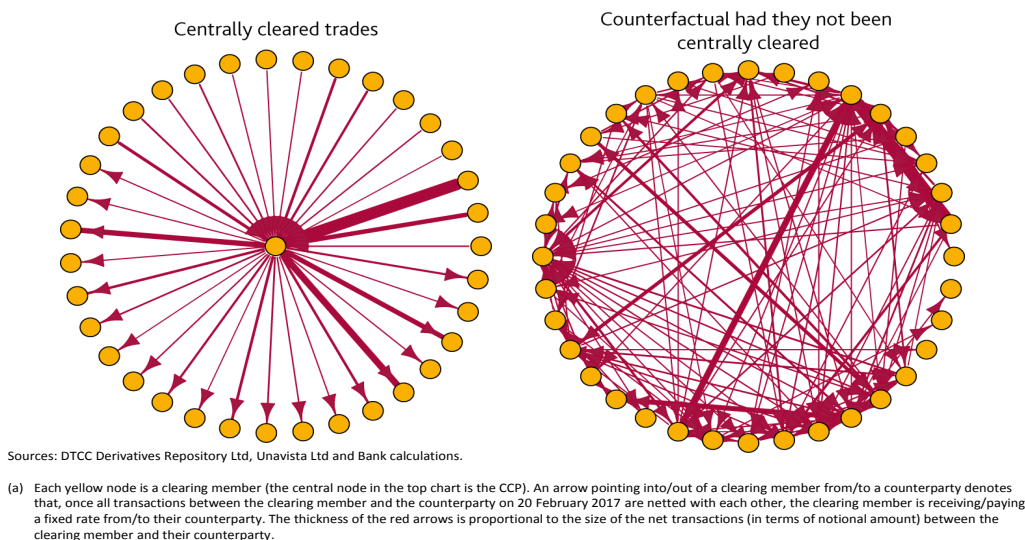
For example, a decade on from the crisis, the amount of collateral covering over-the-counter (OTC) derivative counterparty exposures of global banks has risen by over \$800 billion, and the coverage of exposures with collateral has risen from about one third to nearly two thirds.³

This has led to an increase in the amount of collateral available to absorb market moves. For example the total initial margin held by UK CCPs against derivatives positions has more than doubled over the last five years with the average level throughout 2017 standing at approximately £145bn at end-2017.⁴

And, crucially, the shift to central clearing has led to a major simplification of derivatives networks (see Figure 1).

Figure 1: ‘Multilateral netting’ at CCPs reduces aggregate counterparty credit risk and simplifies the network of exposures

Centrally cleared trades executed on 20 February 2017 in sterling interest rate swaps referencing six-month Libor (top) — and the counterfactual had they not been centrally cleared (bottom)^(a)



² This is because clearing requires an adequate degree of standardisation of a product’s contractual terms and operational processes, sufficient market liquidity to support default management in potentially stressed conditions, and reliable pricing sources to support accurate margining

³ See FBS Chair letter to the G20 (July 2017) <http://www.fsb.org/wp-content/uploads/P030717-1.pdf>

⁴ For further information see the Bank of England FMI annual report 2017.

The concomitant of these benefits has been greater concentration of risk reducing activity in CCPs. There is notable concentration amongst the largest CCPs and largest clearing members and there are clear interdependencies between CCPs and their clearing members.⁵

It would be wrong to see this as some manifestation of “unintended consequence”; it is rather the other side of the simplification coin; an intrinsic part of the overall risk reduction.

Concentration brings its own risks but may still be preferable overall to the complexity that existed before the crisis: returning to a derivatives universe that linked the international financial system together through a far more complex network of bilateral exposures, would in my view be a retrograde step.

But it would be equally wrong to ignore the risks that could arise from higher concentration. There needs to be extremely high levels of resilience at CCPs and effective recovery and, in extremis, resolution options were a CCP to fail.

So we need to have confidence in the sequential lines of defence that are in place to manage risks and absorb shocks within CCPs and in how resolution might provide a backstop.

Clearing members themselves are the first line of defence

CCPs are not risk-taking entities. Rather, they are mechanisms for the management and for the mutualisation of their members’ credit counterparty risk. Their greatest, though not only, vector of risk is the default of one or more of their members.

Ensuring that those members are able to continue to meet their obligations to CCPs is clearly the first line of defence.

There has been a very substantial increase, since the crisis, in the resilience of the systemically important banks that are the main members of the largest CCPs.

⁵ A recent FSB survey found that exposures to CCPs are concentrated among a small number of institutions. And clearing member affiliates are also important providers of other critical services required by CCPs such as liquidity and credit providers or custodian and settlement banks. A small number of entities tend to dominate each resulting network. These concentrations suggest that shocks to one central element of each CCP network would likely have significant consequences for the rest of the network. FSB report ‘Analysis of central clearing interdependencies’, July 2017.

I do not want to go into this in detail today. But we should not lose sight of the fact that reforms to the banking system, particularly substantially stronger capital and liquidity requirements have bolstered, albeit indirectly, the resilience of the CCPs.⁶

Equally, if not more important, the resolution regimes now being implemented in major jurisdictions are intended precisely to ensure that a major bank can fail, without the disruptive systemic impact of insolvency and default - including default to the clearing house. The objective is that debt holders can be bailed in and liquidity provided to restore the bank to solvency enabling it to continue to meet its obligations.

I will return later to the question of how we can have assurance that bank resolution will operate effectively. The point I want to stress here is that if a major bank fails, effective resolution should prevent default to the CCP occurring in the first place.

The CCP's own defences

Stronger banks and effective resolution regimes reduce significantly the risks that CCPs face from member default. But they do not eliminate it.

Like banks, CCPs need to hold resources to absorb default losses. But unlike banks the great majority of these resources are not the capital of the owners. It is the resources of its members because it is the counterparty risk of the members that is being managed.

These resources comprise first the margin collateral of the defaulting member, then some of the CCPs' own capital (their 'skin in the game') and then the mutualised loss absorbing capacity of the default funds to which all members contribute.

These resources are considerable. In 2017, in addition to the £145 billion of initial margin, default funds held by UK CCPs totalled around £10 billion. As a very broad comparison, at the height of the financial crisis the UK Government had to make an initial injection of £37 billion of public funds into RBS and Lloyds.

As I noted at the outset, in the Lehman case, the margin held by CCPs was sufficient to enable the CCP to liquidate, auction or transfer all of the defaulted contracts in a few weeks.

We would need to go much further into the tail of the probability distribution of very bad events to exhaust a CCP's prefunded resources against default than would be necessary to exhaust a bank's capital. If bank

⁶ The largest cross-border banks are considerably stronger than during prior episodes of market stress. Common equity requirements are seven times the pre-crisis standard for most banks. For global systemically important banks (G-SIBs), they are more than ten times higher. <https://www.bankofengland.co.uk/-/media/boe/files/speech/2016/redeeming-an-unforgiving-world.pdf?la=en&hash=7B7AC35CC3017FCD8EF5BE7D5F2D0C4EA22C7E05>

resolution failed, and defaults occurred, it would take the failure of more than the CCP's two largest clearing members in extreme but plausible market conditions to lead to the exhaustion of the default fund – this is a scenario, in the tail of the tail, which would almost certainly be more severe than those we have seen historically, including in the crisis.

The crisis has, of course taught us, that we need to think about events in the very tail of the probability distribution. So we do need to ask what happens when prefunded loss absorbency is exhausted and insufficient to cover losses.

Unlike banks, if prefunded resources are insufficient to absorb losses, the CCP does not become insolvent.

CCP's rulebooks, to which all members agree in advance, allow a further series of recovery actions, in a prescribed sequence. A CCP could require its members to contribute more resources, it could reduce its liabilities to some of its members, and ultimately it could “tear –up” (i.e. cancel) all or some of its contracts – in effect the closure of the clearing service.

The sequence of ever more draconian actions, reflect the fact that CCPs are not independent risk takers. In fact, they should not be risk takers at all. They are services that, for a fee, manage the risks of derivative counterparty default that their members would otherwise face directly and at far greater cost.

Again, the comparison with banks is instructive. Writ large, the objective of recovery and resolution are the same for systemically important banks as they are for CCPs – to ensure the maintenance of critical economic services during stress. But the similarity pretty much stops there.

The main challenge with a bank that has exhausted too much of its prefunded loss absorbing resources – ie its capital - is to be able to bail in resources and to reduce its liabilities.

By contrast, if pre-funded resources at a CCP are insufficient to absorb losses, the CCPs is able to bail in more resources from its members to absorb losses. If that is insufficient, unlike banks, it is able to reduce its liabilities – ultimately to zero.

All of this would happen outside insolvency. And it would be “orderly”, in the sense that it would be a prescribed sequence of action that has been pre-agreed between the members of the clearing house and within contractual arrangements between clearing members and their clients.

Given the scale of the loss absorbing resources held by and available to CCPs and the fact that their rulebooks provide ultimately for their wind down outside insolvency, some have argued that while resolution is relevant for banks, it is simply not a relevant concept for CCPs.

I see some force in this argument. Certainly, as far as loss absorbing resources are concerned I do not believe that it is likely to be justified to require CCPs to hold an extra shot, in the form of bail in debt – to enable them to replenish their own resources.

If, following the default of more than two major wholesale financial market institutions in stressed market conditions, the margin held by the CCP, the default fund, and further cash calls on the membership have been insufficient to meet the losses, we will have gone considerably further into the tail of systemic stress events than we have experienced before or that we require banks to withstand.

In those circumstances, a reload of the CCP's resources by bailing in debt is unlikely to resolve the problems.

On the other side of the ledger, holding bail in debt would be of no other use to a CCP but could put up materially the cost of clearing. All else equal, this would be passed onto the users of clearing, reducing incentives to use the risk reduction that clearing offers.

Resolution, however, is about more than access to extra loss absorbing resources. Its objective is to ensure that when systemic financial institutions get into trouble, financial services critical to the real economy are maintained.

The latter stages of a CCP's recovery plan that terminate, in the tearing up of contracts, would probably be "orderly" only in the sense that it would be a prescribed sequence of pre-agreed actions.

Given the likely circumstances in which it would be occurring the tearing up of derivative contracts and winding down of a major clearing service could be a significant shock to the system.

In those circumstances, I see a number of reasons why a resolution regime is necessary to provide public sector authorities with the option to step in – if necessary before the CCP has come to the end of its pre-agreed recovery and wind down actions.

In such circumstances, where the actions or inaction by the CCP run the risk of amplifying a systemic problem, it is appropriate that a public authority be capable of intervening to manage that systemic risk and to thereby protect public funds from needing to be used.

In contrast to CCP management who will owe fiduciary duties first and foremost to their shareholders, a resolution authority will have powers and duties that require and enable it to act in the interests of financial stability.

The benefits of stepping in to stabilise the situation could take a number of forms.

For example, if ‘voluntary’ measures such as auctions were failing and there was a serious risk of financial contagion from margin gains haircutting, the resolution authority could decide it was better to intervene quickly to tear-up a subset of contracts earlier than would otherwise be permitted under the rulebook.

Doing so would return the CCP to a matched book before losses escalated further and before the damage became irreparable.

Losses from the tear-up of positions would still be expected to be allocated in the order contractually agreed in the rulebook without discrimination between counterparties. But the discretions exercised by the resolution authority, such as the scope and price of the partial tear-up or the speed of replenishment of the depleted default fund would be taken with objectives to protect financial stability and subject to public law safeguards.

In taking these actions the resolution authority would have the advantage of being able to coordinate and exchange information with other domestic and foreign authorities and with the wider market in a way that the CCP would not. This ability to coordinate could be crucial to the orderly management of a systemic event particularly if defaults were impacting multiple CCPs.

An important aspect of stabilising the CCP and the wider market would be to maintain sufficient certainty around the losses that could be incurred in the resolution.

A CCP’s rulebook provides its members with assurance ex ante about the point at which and the extent to which they will be exposed in the event of a clearing member default. It protects them from discrimination in the allocation of losses.

Resolution authorities should similarly respect the CCP rulebook in the allocations of loss. If, in extreme circumstances, it proves necessary for the resolution authority to deviate from the rulebook, CCP members should be compensated for losses borne in excess of what would have been incurred had the rulebook been followed.

This concept of “no creditor worse off” (NCWO) is a central tenet of resolution regimes for banks. Resolution powers can interfere with property rights and the NCWO protection is needed to constrain use of these powers by the authorities.

In the case of a bank, the test is that no creditor should be worse off than if the bank had gone into insolvency. For the reasons set out above, the insolvency counterfactual needs to be modified for CCPs; to assume that in insolvency the pre-agreed order of losses in the rule book would be followed.

Non default losses

Finally, it is important to emphasise that I have been talking throughout about losses at a CCP following default of a clearing member.

This, as I said at the outset, is the main vector of risk for a CCP. But it is not the only one. Non-default losses can arise for a number of reasons, particularly operational failures, including following cyber attack, or losses arising from the investment of the collateral held by CCPs.

In such cases, CCPs do not generally have recourse to the resources of their members. Losses need to be absorbed by the capital of the firm and if that is insufficient the CCP faces insolvency like any other firm.

Operational risk has become a much greater concern for CCP supervisors and regulators in recent years and we increasingly need to see higher standards of resilience in the face of operational and cyber risk.

Recovery and resolution regimes for CCPs need to take more account of threats to CCPs from this direction. Whether this should mean more loss absorbing capital at CCPs, access to member resources in the event of non-default losses or some combination of the two is a matter of ongoing discussion.

But given the role CCPs play in the financial system, we need to think more about how we would resolve a CCP that had suffered a major operational failure, without entry into insolvency. Similar issues arise in the context of the resolution of systemically important banks.

Having published guidance on resolution strategies for CCPs in 2017, the Financial Stability Board's FMI Cross Border Crisis Management group is now focused on two issues that remained outstanding; namely the adequacy of financial resources for resolution and the treatment of equity in resolution.

Bank resolution

The Lehman Brothers episode with which I started today exposed brutally that insolvency is not an option for large cross-border banks that perform critical economic functions.

One of the main objectives of the post crisis reforms has been to put in place bank resolution regimes that enable the authorities to stabilize a failing bank by bailing in its debt holders to restore solvency and regulatory capital. The aim, as I have said, is to enable the bank's critical economic functions to continue, without taxpayer support, while it is being resolved.

A great deal has been achieved.

We now have agreed international standards covering the design of resolution regimes, the amount of 'bail-inable' resources banks must hold, and agreement with industry participants to 'stay' termination rights by counterparties in derivative and repo transactions if resolution is in train. Alongside this we also have international guidance on how to ensure continuity of access to FMI as well as on the mechanics of executing a bail-in.

The UK now has in place a comprehensive and effective bank resolution regime that implements the EU's Bank Recovery and Resolution Directive (BRRD) and the international standards.

The Bank of England has been established as the UK's resolution authority with a wide range of powers to 'bail in' shareholders and creditors of failed banks. The biggest UK banks have begun to issue bail-inable debt at scale and are well on their way to meeting the target for loss absorbing resources in resolution.⁷

Key policies and guidance to firms have been issued, notably on operational continuity and on the internal distribution of loss absorbing resources. Last October the Bank, with the publication of the Purple Book, the Bank set out in detail its approach to resolution and how it would tackle a failing bank.

There is more we need to do, I will turn to that in a moment. And we should be clear that resolution will not be some painless magic bullet. No matter how well prepared in advance, the resolution of a major bank, if it happens, would be a painful, protracted, and probably litigious, affair.

But we now have made means that we have options today to deal with a failing bank that we simply did not have 10 years ago. The choice is no longer solely between a disruptive insolvency that damages critical economic functions or bailing out the bank's creditors at taxpayer expense.

A large part of a bank's losses must now be borne by shareholders or creditors. This penny seems to have dropped with investors in the larger banks – the implicit public subsidy that the large "too big to fail" banks enjoyed in the price of their debt has been eroded and rating agencies no longer assume that UK banks will get public support if they get into trouble.⁸

It is essential that the resolution regime is fully credible - to those investing in banks but also to counterparties to banks, including CCPs and to the public at large.

If investors in bank debt know that they will be bailed in if the bank fails, the pricing of that debt will exert discipline on risk taking.

⁷ The major UK banks on average now have total loss absorbency of around a quarter of their risk-weighted assets (RWAs) compared to an average end-state requirement of around 28% (including buffers).

⁸ While no measure is perfect, a range of market-based estimates suggest the implicit 'too big to fail' subsidy has fallen sharply since the crisis. Estimates suggest that the value of the implicit subsidy has fallen from around £45bn in 2010 to less than £5bn now – down around 90% <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/treasury-committee/capital-and-resolution/written/69208.pdf>

If counterparties have confidence that resolution will stabilise a bank so that it can continue to meet its obligations, they will not accelerate actions that could frustrate a resolution to the detriment of all parties.

And the public needs to have confidence that we have learned the lessons of the crisis: that we have acted to ensure that we have an alternative to the previous crisis where we had privatisation of bank profits in good times and the socialization of bank losses when things go wrong.

For that reason, the Bank committed to Parliament in April 2017⁹ and in the Purple Book last October that from 2019 we would implement public reporting of banks' resolution plans and our assessment of their effectiveness.

This marks an important transition in the implementation of full resolvability in the UK.

For resolution to have maximum effectiveness, banks not only need to be able to meet the policy standards and have sufficient loss absorbing capacity. They need also to have the capabilities to be ready to implement a resolution, the legal and operational arrangements in place to avoid disruption to customers. It needs to be possible to restructure a firm so that it can be made viable post-resolution.

So the next phase of work will focus on ensuring that major banks have and are able to demonstrate that they have the systems, documentation, assurance and controls necessary to support their resolvability.

We intend to consult at the end of this year on the detail of this reporting and assurance framework. We envisage that it will require major UK banks to conduct a self-assessment of their resolvability – measured against the policies and standards that have been established nationally and internationally.

In line with our commitment to Parliament, we would then publish our assessment of resolvability for the major UK banks, providing greater transparency over the key judgments of the Bank as Resolution Authority.

In a similar vein the Bank envisages we may require that elements of firms' self-assessments are made public – this would enable firm-specific progress on resolvability to be made more transparent.

It is important to emphasise that this is the next step in the natural evolution of the resolution regime in the UK.

The Bank has been formally assessing the resolvability of UK firms since 2014. We do not intend start over again nor that firms should do so. The majority of policies and standards are in place and firms have made

⁹ Bank of England's submission to the TSC capital enquiry
<http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/treasury-committee/capital-and-resolution/written/69208.html>

good progress in their implementation.¹⁰ We intend that firms should build on the work they have already done.

We will take a proportionate approach to the framework for assurance on resolvability, focusing first on the major systemic UK firms.

We propose to ask these firms to submit the first round of self-assessments from 2020. The timing is intended to allow full consultation on the framework and for the first assessments to reflect changes to firms' structures that are required for EU withdrawal and ring-fencing.

Self-assessment and transparency should begin at home.

For this reason, the Court of the Bank of England asked the Bank's Independent Evaluation Office to review the Bank's work so far to put in place the UK resolution framework and its plans to make the resolution framework fully operational by the target date of 2022.

The IEO report published today acknowledges the international leadership the Bank has given on resolution policy and that we are also leading the way in implementation.

The IEO's findings support the direction of travel I have outlined here for assessing implementation of the resolution framework. It includes a number of important recommendations to ensure that we are best equipped to take forward the next stage of the work, including how the Bank as resolution authority can gain the greatest leverage possible by using the supervisory machinery of the PRA to ensure firms prepare for resolution while respecting statutory obligations requiring structural separation of supervision and resolution functions.¹¹

Conclusion

This transparency and public assurance should help in one other key respect. Effective resolution of a globally systemic bank will require cooperation and coordination between a range of authorities in a number of jurisdictions.

These need to have confidence that an effective resolution - and one that treats all jurisdictions fairly - can be carried out by the home resolution authority. Absent that, they may need to take action that would frustrate a successful resolution for the bank as a whole.

¹⁰ Two further major pieces of the framework will be published shortly – our statement of policy setting out the requirements for internal MREL, and our final policy on valuations.

¹¹ BRRD (DIRECTIVE 2014/59/EU) – Article 3 – states that there should be “Adequate structural arrangements ... in place to ensure operational independence and avoid conflicts of interest” between the supervisors of firms and the resolution authority of firms when the two functions are carried out by same public authority.

The post crisis international reforms established machinery to enable all relevant authorities to agree and track the implementation of the resolution plans of systemic banks.

Public reporting and assessment of resolvability should act to strengthen further confidence of other jurisdictions in the resolution plans of banks that operate in their jurisdictions. Confidence that an effective resolution of a clearing member can be effected will support a CCP and its supervisor 'staying' the default of that member, in line with the international guidelines.

The Lehman episode with which I started is also an example of what can happen without such cooperation and confidence and when there is no resolution option available. The effectiveness with which Lehman's default was managed by clearing houses was perhaps the only bright spot in a very sorry tale.

I hope I have been able to set out today why the reforms we have put in place on clearing and the progress we have made on resolution learn the lessons of that tale and make the financial system today a substantially more resilient place.