

# Central clearing: reaping the benefits, controlling the risks

**Benoît CŒURÉ**  
Member of the Executive Board  
European Central Bank  
Chair  
Committee on Payments  
and Market Infrastructures  
(Bank for International Settlements)

*As a result of structural changes in financial markets and the introduction of mandatory central clearing obligations for standardised over-the-counter (OTC) derivatives, central clearing has expanded significantly in recent years. In parallel, public authorities have devoted greater attention to strengthening the global safeguards for central clearing, notably with the adoption of the CPMI-IOSCO Principles for Financial Market Infrastructures in 2012, a complementary CPMI-IOSCO report on recovery of financial market infrastructures in 2014, and dedicated Financial Stability Board guidance on how to apply the “Key Attributes of Effective Resolution Regimes for Financial Institutions” to financial market infrastructures in 2014. In 2015 global standard-setting bodies launched a comprehensive work plan on central counterparty (CCP) resilience, recovery, resolution and clearing interdependencies to further enhance this framework.*

*This article takes stock of the latest achievements in this area and outlines future priorities, concerning the finalisation of the CCP work plan, interactions between requirements for central counterparties and those for banks, greater granularity of central counterparty supervision and oversight, cross-border cooperation between authorities as well as macroprudential safeguards for central clearing.*

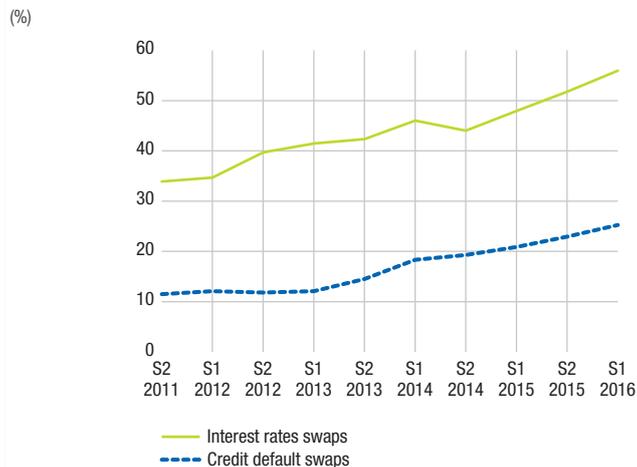
**NB: All views expressed here are the author's own and do not necessarily reflect those of the ECB, the CPMI or CPMI-IOSCO.**

Central clearing has expanded significantly in recent years as a result of both market-driven and regulatory factors. The clearing industry had already started to undergo structural changes before the financial crisis in 2007-2009 against the backdrop of globalised financial markets, regulatory harmonisation, the removal of trade barriers, and technological process reducing the cost of services provided by CCPs (CPSS, 2010).

The financial crisis subsequently underscored the benefits of central clearing in terms of systemic risk reduction through robust counterparty risk management, greater transparency and more efficient use of collateral through multilateral netting. Particular concerns regarding bilateral clearing were identified with regard to OTC derivatives markets, as the opacity of the underlying exposures, together with uncertainty regarding counterparty creditworthiness and the inherent leverage and complexity of OTC derivatives, had been a major factor, if not in triggering the collapse of Lehman Brothers and the near-default of AIG, at least in amplifying market disruptions in their aftermath. At the Pittsburgh summit in September 2009, G20 leaders committed themselves to increasing the resilience and transparency of OTC derivatives markets, including through mandatory central clearing of standardised OTC derivatives. As a result, the share of OTC derivatives cleared centrally has increased markedly, especially in the OTC interest rate and credit derivatives segments (see Chart 1). As evidenced by the Financial Stability Board (FSB), there also seems to be scope for substantial further growth in central clearing, especially for interest rate swaps (IRS) and credit default swaps (CDS) (FSB, 2016).

Inevitably, the increased share of central clearing has been associated with further risk concentration in CCPs. This in itself is not a concern. As long as CCPs are superior risk managers and act as pillars of strength rather than sources of contagion during potential crisis situations, they act as risk *poolers*, not risk *takers*, and they therefore reduce the overall level of risk in the global financial system (not to mention other benefits such as a more efficient use of scarce collateral). In this respect, they are

C1 Share of centrally cleared transactions in OTC derivatives markets



Source: FSB data, ECB calculations.

fundamentally different from banks, whose social function is to transform risk and maturity. In addition, the financial resources included in the CCP recovery waterfall provide for “built-in bail-in” of their shareholders and clearing members.

Nevertheless, in order to ensure that this is the case and that CCPs can withstand not only tail events but “tail of tail” events involving the default of multiple clearing members, policymakers have in recent years embarked on an ambitious agenda to enhance their robustness. The adoption by the CPMI and the Board of the International Organization of Securities Commissions (IOSCO) of the Principles for Financial Market Infrastructures (PFMI) (CPMI-IOSCO, 2012), related guidance on financial market infrastructure recovery (CPMI-IOSCO, 2014) and the FMI annex to the FSB’s Key Attributes of Effective Resolution Regimes for Financial Institutions (FSB, 2014) were important milestones of this work.

In 2015, at the request of G20 finance ministers and governors, relevant global standard-setting bodies agreed to further strengthen the safeguards for central clearing with the adoption of the “CCP work plan” (FSB SRC/FSB ReSG/BCBS/CPMI-IOSCO 2015). The CCP work plan focuses on assessing whether existing international

requirements for CCP resilience, recovery and resolution are adequately implemented and whether additional guidance should be provided. It also provides for further exploring the interdependencies between CCPs and their participants to better understand respective contagion channels and potential vulnerabilities. Significant progress has been made in the CCP work plan in the meantime, with most deliverables expected to be finalised by mid-2017. Meanwhile, at the European Union level, the European Commission has proposed new rules for the recovery and resolution of CCPs (European Commission, 2016).

This article takes stock of recent progress in the global policy framework for CCPs (Section 1) and outlines future priorities (Section 2). Section 3 concludes.

## 11 Recent progress in the global policy framework for central counterparties

### 111 Resilience

CCPs are exposed to various types of risks, notably credit and liquidity risk, custody and investment risk, operational risk and general business risk. Robust credit and liquidity risk management is CCPs' first and foremost line of defence against potential financial threats to their viability. CCPs should be resilient in the sense that their financial resources allow them to withstand potential failures of major clearing members as well as any other extreme but plausible stress events ("non-default" scenarios, e.g. related to custody investment losses, operational and legal risk and cyber threats).

#### Box 1

### CPMI-IOSCO additional guidance on PFMI requirements

In April 2017, based on public consultation, CPMI-IOSCO expects to propose clearer and more granular guidance on the implementation of certain PFMI requirements, including on:

- explicit board responsibilities and disclosure mechanisms regarding CCPs' financial risk governance to promote both closer senior level scrutiny and involvement of relevant stakeholders;
- rigorous stress-testing on the basis of more detailed guidance for identifying relevant risks, developing extreme but plausible scenarios and treating client exposures, as well as for calculating and aggregating stress test results;
- distinguishing between credit and liquidity risks in identifying stress scenarios and determining the necessary loss-absorbing resources as well as duly considering affiliates of clearing members when gauging the largest potential exposures arising from member default;
- deeper analysis to determine whether, in view of a CCP's specific risk profile, there could be a need to go beyond the minimum coverage requirements for credit and liquidity risk set out in the PFMI;
- robust margining practices through a more granular approach reflecting the specific risks of each product, portfolio and market served; prudent assumptions regarding the assumed margin period of risk, other margin model parameters and pricing data; measures to pre-empt a potential intraday erosion of initial margin and further safeguards for portfolio margining;
- further developing the toolkit to measure and address procyclicality with respect to margin and collateral haircut policies;
- determining and exposing an appropriate amount of CCPs' own financial resources to absorb losses related to participant default, custody and investment of participants' assets and ensuring that such resources are of high quality and sufficiently liquid.

Against this backdrop and in the context of the CCP work plan, CPMI-IOSCO assessed CCPs' loss absorption capacity and liquidity coverage against the related PFMI requirements.

In a report issued in August 2016, CPMI-IOSCO (2016b) reviewed the financial risk management and recovery practices at a sample of ten CCPs – including a mix of globally active and more regionally focused ones – that provide clearing services for derivatives in nine jurisdictions. The report underlined that while CCPs have made progress in developing frameworks in line with the PFMI, there are a number of shortcomings that should be addressed, notably in the areas of recovery planning and credit and liquidity risk management. Taking into account the stakeholder feedback received, CPMI-IOSCO issued initial proposals for guidance (CPMI-IOSCO, 2016a), which is expected to be finalised in April 2017 (Box 1).

### 112 Recovery

Notwithstanding the substantial work on CCP resilience including under extreme but plausible stress conditions, it cannot be excluded that CCPs may face even more extreme market events where their existing safeguards and financial buffers may not be fully sufficient. To address such tail-of-tail risks, the PFMI require CCPs to draw up recovery plans to ensure continuity of their critical functions without intervention or support from public authorities. CPMI-IOSCO have also provided specific additional guidance on the development of recovery plans (CPMI-IOSCO 2014).

While CCP resilience requirements have been in place for several years (CPSS-IOSCO 2004), recovery planning is still a fairly new area. When monitoring the implementation of the PFMI, CPMI-IOSCO (2016b) found that a number of CCPs had not yet put in place recovery plans fully in line with the PFMI. Against this backdrop, CPMI-IOSCO (2016a, 2017) recently reiterated the requirement for CCPs to have recovery plans

in place that address both default and non-default scenarios. These need to include arrangements for comprehensively allocating potential credit losses and liquidity shortfalls as well as for replenishing mutualised default resources and capital after financial buffers for extreme but plausible conditions have been exhausted (see Cœuré, 2015a for a broader discussion of the loss-absorbing capacity of CCPs and its impact on stakeholders' incentives).

In addition, CPMI-IOSCO are currently working on guidance to further facilitate CCPs' preparation of recovery plans by elaborating on some aspects of their 2014 report (see section 2.1).

### 113 Resolution

Recovery arrangements are in principle designed ex ante and should be comprehensive. However, since extreme – and by definition implausible – market conditions are difficult to predict, there is a remote possibility that even a very carefully designed recovery plan may ex post turn out not to be effective in returning the CCP to viability or that its implementation may give rise to unexpected risks to financial stability. Besides, expectation of a possible public bail-out would weaken risk management practices in CCPs and encourage a race to the bottom in margining and haircutting practices. A framework enabling orderly intervention by a resolution authority must therefore also be in place, especially to ensure the continuity of critical functions of the CCPs, minimise risks to financial stability and set the right incentives for CCP shareholders and clearing members so as to avoid potential reliance on public bail-out funds and related risks for taxpayers.

It should be underlined that the resolution of a CCP would not necessarily imply winding it down. There could be cases where a CCP in resolution may cease to exist as a legal entity, for example where the resolution authority may choose to sell or transfer its business. However, the economics of clearing favour economies of scale and the emergence of local monopolies, making such a

solution in many cases difficult to implement. Interoperability between CCPs may facilitate the transferability of portfolios, but it may also have unwelcome financial stability consequences (Cœuré, 2015b, and ESRB, 2016). The continuity of the CCP's critical functions should be ensured in all cases.

As noted in the introduction, the FSB Key Attributes of Effective Resolution Regimes for Financial Institutions and the respective FMI Annex have already set out a framework for CCP resolution. Under the CCP work plan, the FSB has considered the need for additional guidance on implementation in order to assist authorities in resolution planning and promote consistency in approaches across countries. Following up on an earlier consultation (FSB, 2016), in February 2017 the FSB published draft granular guidance on central counterparty resolution and resolution planning for comments (FSB, 2017, see Box 2). Related work has been led by the European Commission (2016) at the European level.

### 114 Interdependencies

In order to ensure the robustness of the central clearing landscape as a whole, measures calibrated to individual CCPs may not be fully sufficient. In particular, CCPs all rely heavily on contributions, financial resources and liquidity provided by the same major banks (as clearing members and/or financial service providers), which creates significant interdependencies between CCPs. These interdependencies may affect the robustness of CCPs especially in the case of distressed market conditions that could trigger default management, recovery and/or resolution actions in more than one CCP at a time. Recent supervisory stress test exercises in the EU and in the United States have started lifting the veil on such interdependencies (ESMA, 2016, and CFTC staff, 2016).

Against this backdrop, the Basel Committee on Banking Supervision (BCBS), the CPMI, the FSB and IOSCO established a joint study

#### Box 2

#### FSB draft guidance on CCP resolution

Key elements underlined in the draft guidance include the following:

- CCP resolution should pursue the objective of financial stability, ensure the continuity of critical functions and avoid exposing taxpayers to losses in all jurisdictions where those functions are critical. It should also maintain appropriate incentives for effective default management and recovery.
- Resolution should to the extent possible, be predictable and ensure that no creditors are “worse off” in resolution than they would have been under CCP insolvency proceedings. Resolution authorities should therefore follow the steps under the CCP recovery plan unless a departure is deemed necessary to achieve the resolution objectives and safeguard financial stability. Resolution authorities should also have the power to award compensation to clearing members contributing resources in excess of their obligations under CCP rules in the form of equity or other types of ownership.
- In defining the timing of entry into resolution, there is a need to balance predictability for stakeholders with flexibility for resolution authorities. To this end, the draft guidance sets out potential indicators for default and non-default-related losses that may inform the decision on whether to place the CCP in resolution. In addition, relevant authorities should cooperate closely in the lead-up to resolution.
- Resolution authorities should pursue prudent and consistent approaches when assessing CCPs' resolution funding. To this end, the draft guidance sets out some common minimum criteria that should be considered. Temporary public funding should only be used as a last resort and coupled with very robust ex post recovery mechanisms.
- When conducting resolution planning, authorities should carefully differentiate between potential default and/or non-default resolution scenarios and related arrangements for allocating financial losses and replenishing CCPs' financial resources.
- Oversight, supervisory or resolution authorities should be able to address material impediments to resolvability that may be identified by the resolution authority.
- To assist in the establishment of crisis management groups for CCPs that are systemically important in more than one jurisdiction, further guidance is provided on identifying the relevant CCPs and the composition of these groups.

group in July 2015 to identify, quantify and analyse interdependencies between CCPs and clearing members and any resulting systemic interdependencies. As a first step, the study group collected data from around 25 CCPs globally in order to identify CCPs' exposures to banks as direct members, clients and financial service providers. This work was complemented by an assessment of existing information on banks' counterparty and funding exposures to CCPs compiled by the International Data Hub at the Bank for International Settlements.

## 21 Future priorities

### 21.1 Completing the CCP work plan

The CCP work plan is currently being finalised.

While, as regards **CCP resilience**, final guidance on CCPs' risk management practices is expected to be issued in April 2017, CPMI-IOSCO have in the meantime also begun exploring the scope for *supervisory stress-testing* as a complement to CCPs' in-house stress testing. The rationale for supervisory stress-testing is twofold, namely to (i) support authorities' review of individual CCPs' stress tests and to (ii) make it possible to test the collective response of CCPs to shocks affecting them simultaneously. Given the latter rationale, supervisory stress-testing of CCPs has an inherently macroprudential dimension. The development of supervisory stress-testing is a project with a longer-term horizon, given the related data requirements and analytical challenges in terms of building relevant scenarios and identifying contagion channels across CCPs and (from and to) their clearing members. However, CPMI and IOSCO, also building on existing experience (as noted above), have recently taken a major step forward by launching the development of a basic conceptual framework to guide authorities in the construction and execution of multi-CCP supervisory stress tests.

Concerning **CCP recovery**, one important area still under discussion relates to safeguards for effective *interaction between CCP recovery and resolution*.

There are at least three reasons why recovery and resolution plans have to be consistent. First, recovery planning provides the presumed starting point for resolution and may therefore limit the options available to the resolution authority. Second, recovery takes place in the shadow of resolution, implying that resolution plans shape stakeholders' incentives in recovery. Third, resolution should obey the "no creditor worse off" principle, for which recovery provides a relevant benchmark.

Since different types of authorities are involved, with supervisors and overseers reviewing CCPs' recovery plans and resolution authorities conducting CCP resolution planning, good coordination is of the essence.

Potential risks for effective CCP resolution arising from the interplay with CCP recovery plans are not a remote theoretical possibility. CCP recovery plan provisions regarding requirements for participants to make additional contributions in cash to CCPs in the event of financial shortfalls ("cash calls") are an important case in point.

Cash calls are recognised as an essential element of resolution authorities' toolkit for allocating financial losses, notably in view of their measurability. Indeed, while clearing participants can fully prepare for cash calls if they are contractually defined and capped ex ante (e.g. in relation to clearing members' guaranty fund contributions), potential exposures arising from alternative measures, such as gains-based haircutting of variation margins (VMGH) or partial tear-up may be difficult to predict and prepare for as they depend on open positions and market movements at an uncertain point in the future. The ability of clearing members to measure and manage their potential exposures in CCP resolution is an important aspect not only from a bank supervisory perspective but also from a broader financial stability angle, as it clearly

has an impact on the credibility of resolution funding. However, based on a stocktake of public information on the rules of ten major global CCPs for allocating participant-default-related losses, the ECB found that half of those CCPs provide for only *one* cash call in their recovery plans. Therefore, if resolution authorities of those CCPs were to favour the use of cash calls over alternative loss allocation tools such as VMGH, they would be restricted in their ability to act accordingly: they could either be stripped of this tool (if they intervene after CCPs have already used the call) or, in order to make use of the cash call embedded in the CCP's rulebook, they would need to intervene immediately after the exhaustion of the prefunded waterfall, thereby entirely short-cutting recovery, which could also be unwarranted. Unless applicable statutory regimes provide the concerned resolution authorities with a dedicated resolution cash call on CCP participants, they may have to require amendments to the recovery plan to ensure adequate flexibility for their actions.

CPMI-IOSCO are also considering potential additional guidance for *non-default-related recovery events*, notably regarding loss allocation. As set out in the 2014 recovery guidance, losses arising from non-default risk are first and foremost the responsibility of CCPs and their owners, especially with regard to general business and operational risk. However, CCPs may provide for the involvement of participants in the allocation of custody and investment losses in a manner proportionate to participants' involvement in the respective risk governance.

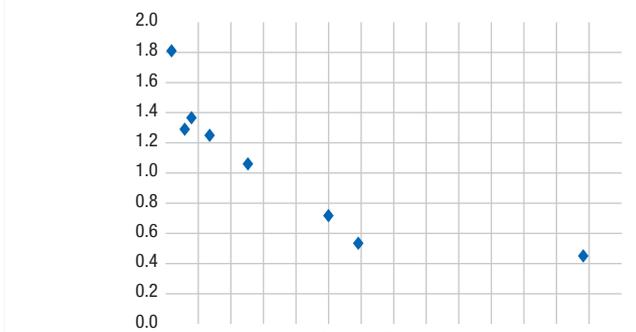
An issue that may warrant further consideration in the medium term is the *calibration of CCPs' own defences against non-default losses*. Under the PFMI, CCPs are required to hold liquid net assets funded by equity equal to at least six months of current operating expenses to absorb general business losses. It must be underlined that this is a minimum requirement only. First, given that capital is calibrated in relation to normal operating conditions, it may not be sufficient for large-scale or recurring business losses in a highly distressed

market environment. Second, potential losses will depend on the type of risk to which a CCP may be exposed. For instance, while losses arising from a small operational outage would be limited, substantial investment losses could arise in case of sharp and sudden market movements. Against this backdrop, consideration should be given to examining whether CCPs should be explicitly required to pursue an appropriately differentiated and prudent approach when calibrating their capital defences for non-default recovery scenarios.

When it comes to covering investment risk, the size of the initial margin could be an important metric to determine the size of losses that may crystallise. As set out in Chart 2 below, an internal ECB stocktake of the capital held by eight major EU CCPs, based on publicly available information, showed that capital amounts to less than 2% of initial margin holdings. This appears rather low in view of the prospectively very significant market movements during a CCP recovery situation and also considering the highly demanding requirements for taking into account large-scale market movements when calibrating CCPs' financial resources for default-related losses.

C2 Initial margins and capital at selected EU CCPs

(x-axis: total initial margins in EUR billions, y-axis: total CCP capital/total initial margins in %)



Source: CPMI-IOSCO public disclosures ; financial statements.

With respect to *CCP resolution*, the FSB is currently considering stakeholder feedback on its draft guidance issued in February 2017, with the objective of issuing final guidance by mid-2017. As set out in the draft guidance, one issue that will continue to be assessed with a longer-term horizon is *CCP resolution funding*. Robust requirements to ensure the availability of adequate funds to allocate financial losses in resolution and to replenish CCPs' financial resources are critical given that a key objective of CCP resolution is to avoid exposing taxpayers to losses. However, the determination of appropriate funding arrangements raises some complex issues.

On the one hand, there is a burden of proof on CCPs that the available funding credibly ensures the continuity of their critical functions, including in the event of very severe market conditions going beyond the scenarios covered under CCP stress-testing. In such circumstances, resolution funding that relies entirely on ad hoc funding could raise challenges as funds would need to be increased at the height of market stress, which could in itself further exacerbate market disturbances and may simply not work. Temporary public funding could be difficult to recover from the private sector in a comprehensive and timely manner. Especially in the case of global CCPs with members dispersed across multiple jurisdictions, there could be challenges in enforcing purely contractual obligations on a cross-border basis over a longer-term horizon, including in view of potential changes in the CCP landscape following the resolution of a CCP.

On the other hand, funding arrangements should be proportionate to the "tail-of-tail" nature of CCP resolution risks and should not weaken incentives for CCPs and their members to contribute to effective ongoing risk management and recovery. Funding arrangements should not become so costly so as to call into question the business case for CCPs, thereby thwarting the central clearing objective or adversely impacting market liquidity. Finally, it is difficult to accurately predict funding needs for extremely unlikely events that are, by

definition, more severe than extreme but plausible market conditions.

Balancing these different considerations will require further analytical support. The work on CCP interdependencies, multi-CCP stress-testing as well as practical experience in actual CCP resolution planning under the forthcoming FSB guidance are expected to provide significant input in this regard. Against this background, the FSB intends to determine by the end of 2018 whether additional guidance for CCP resolution funding may be needed.

### 212 Addressing interactions between CCP and banking rules

CCPs and major financial institutions are highly interdependent. Global banks account for the bulk of centrally cleared business and provide critical services to CCPs, e.g. as investment agents, settlement banks, custodians and liquidity providers. The robustness of CCPs therefore depends on the ability of their participants and critical service providers to meet all ongoing obligations under CCPs' rules and arrangements (e.g. margin calls, contributions to default management and recovery, liquidity arrangements) in an effective and timely manner.

Robust CCPs are equally important for banks. Given the large share of banks' counterparty exposures concentrated in CCPs, any CCP failure or delay in its payment and delivery obligations to its members will imply significant risks for its members. Banks also entrust CCPs with large amounts of high-quality collateral and depend on CCPs for services ancillary to central clearing, such as securities lending and settlement facilities.

Given that the safety of banks and that of CCPs are closely interrelated, respective regulatory requirements are, in principle, mutually reinforcing. For example, progress on bank capital, liquidity and resolution significantly reduces the risk that CCPs will face the potential default of one of their largest members. Similarly, progress in reducing

the inherent procyclicality of CCPs' margin and collateral policies makes it less likely that banks may be exposed to sudden and steep increases in collateral requirements and related liquidity strains in tightened market conditions. However, given that banks and CCPs are quite dissimilar in terms of their risk profile, risk controls and balance sheets, the regulatory tools applied to them are different. For instance, while banks mitigate credit risk in their banking books with capital calibrated in relation to their risk-weighted assets, CCPs always maintain balanced positions and rely on mutualised default resources to absorb potential losses in case of member default. As already mentioned, assuming that they are properly managed under the PFMI, CCPs are fundamentally *risk poolers*, not *risk takers*. In addition, central clearing is by nature a more concentrated business than banking. These differences need to be taken fully into account when designing CCP and banking rules to avoid unwarranted cross-sectoral externalities.

A case in point is the treatment of clients' cleared derivatives transactions under the Basel III leverage ratio framework, which provides that clearing members are not able to offset the initial margin posted by their clients against their potential future exposure to that client. This treatment could weaken the business case for providing client clearing services, thereby limiting the scope for indirect access to CCPs and ultimately reducing hedging opportunities for end users. It could also give rise to disincentives for using CCPs and increased recourse to bilateral clearing, which would be associated with greater systemic risk, including for banks. In addition, the prospective further concentration of client clearing business in a smaller number of clearing members would further increase the respective financial risk concentration and could limit the ability to port client positions and collateral in case of member default, heightening potential systemic spill-over risks. The consequences of the Basel III framework for the incentives to clear OTC derivatives and other products centrally therefore need to be carefully monitored.

Similar problems could be associated with the potential inclusion of banks' exposures to CCPs under the large exposure framework. The large exposure regime, which applies quantitative limits to banks' exposures to individual counterparties, is in principle difficult to reconcile with the nature of the CCP industry. Even high hard limits may not be workable for products where only one CCP provides relevant services, and could conflict directly with mandatory central clearing obligations. Banks could also be forced to move to a greater extent into bilateral clearing, which would also be undesirable in view of the recognised greater safety of central clearing.

Such cross-sectoral frictions should be addressed in a manner that appropriately balances the prudential objectives of banking supervisors, the concerns of CCP supervisors and overseers, and the shared interest in an overall safe and efficient clearing landscape. The FSB as coordinator of the CCP work plan could play an important role in this regard, notably by supporting joint ex ante and ex post impact assessments of prudential changes by the affected standard-setting bodies. In this context, it would be important to also consider possible qualitative changes in market structures that could give rise to new systemic vulnerabilities and that may be difficult to subsequently control or reverse.

### 213 Making CCP supervision and oversight more granular

Increased central clearing and improved safeguards for CCPs contribute not only to the safety but also to the efficiency of the financial system, given the benefits of central clearing in terms of greater collateral efficiency and market transparency. However, more stringent CCP rules come at a cost to CCPs, clearing members and the financial system as a whole. It is also true that while CCPs are, in principle, systemically relevant in the markets served, each CCP is different in terms of its cross-jurisdictional risk implications and resulting impact on global financial stability.

It is therefore important to keep the regulatory requirements for CCPs strictly proportionate to the risks incurred.

To this end, CCP supervision and oversight should increasingly evolve towards a more granular calibration of requirements in line with CCPs' specific risk profiles. The PFMI already provide the basis for such a differentiated approach with their emphasis on minimum requirements and more demanding coverage requirements for more wide-ranging or complex CCPs. Recent additional guidance on CCPs' in-house stress-testing, the development of supervisory stress-testing as well as the enhanced understanding of CCP interdependencies could make it possible to move, in the medium term, towards an approach to CCP supervision and oversight that would combine standardised minimum requirements for CCPs with "Pillar II" entity-specific requirements reflecting individual risk in a proportionate way. Such requirements would derive from a supervisory review process, including regular supervisory stress-testing, similar to what is now in place for banks.

Such an enhanced framework would require far-reaching changes to the existing frameworks (such as, in the EU, an overhaul of the European Market Infrastructure Regulation), but it would have several merits. On top of allowing for more proportionate supervision and oversight, it could also help to reduce some of the open questions regarding recovery and resolution funding. While it will never be possible to fully predict events that are by definition implausible, a more granular approach to CCP supervision and oversight could help to reduce the "unknown unknowns" of central clearing and to better gauge and address residual vulnerabilities.

### 214 Ensuring effective cross-border cooperation

The introduction of mandatory central clearing obligations for eligible OTC derivatives has increased the role of CCPs with cross-border systemic risk implications, given the global

nature and high degree of concentration of OTC derivatives markets.

Against this backdrop, the FSB (2012) identified effective cooperation of authorities as a critical safeguard for global clearing, including the existence of (i) cooperative oversight arrangements between relevant authorities, both domestically and internationally and on either a bilateral or multilateral basis, that result in robust and consistently applied regulation and oversight of global CCPs and (ii) resolution and recovery regimes that aim to ensure that the core functions of CCPs are maintained during times of crisis and that consider the interests of all jurisdictions where CCPs are systemically important.

These concerns were reflected in both the PFMI and the FSB *Key Attributes of Effective Resolution Regimes for Financial Institutions*. "Responsibility E" of the PFMI provides for cooperation between relevant authorities that is commensurate with a financial market infrastructure's systemic importance across jurisdictions for both normal times and crisis situations. Under the FSB Key Attributes, crisis management groups (CMGs) should be maintained for all financial market infrastructures that are systemically important in more than one jurisdiction for resolution planning and execution purposes.

Nevertheless, progress towards the actual establishment of cooperative arrangements in line with Responsibility E and of CMGs has been slow. CPMI-IOSCO found in their report on jurisdictions' implementation of the responsibilities for authorities under the PFMI (CPMI-IOSCO, 2015) that there was not yet sufficient evidence on Responsibility E-type arrangements to assess the practical outcomes of the respective cooperation across jurisdictions and called upon authorities to continue to establish or refine those arrangements. Similarly, an internal FSB stocktake of the resolution regimes in its member jurisdictions in 2015 highlighted that CMGs (or equivalent arrangements) and systematic resolution planning processes were not in place for several of the largest CCPs.

In this context, the CPMI, IOSCO and the FSB have taken action to increase the momentum for cross-border-cooperation. CPMI and IOSCO have developed criteria for identifying CCPs that are systemically relevant in more than one jurisdiction and have also launched a review of whether further guidance on the implementation of Responsibility E could be helpful. As part of its February 2017 draft guidance on CCP resolution, and based on a consultation by CPMI-IOSCO of CCPs' home and host authorities, the FSB has clarified the CCPs for which CMGs should be established and has also issued further guidance on the composition of CMGs.

An important additional priority in the future will be to ensure effective and consistent cross-border cooperation for major cross-border CCPs throughout their potential lifecycle. In particular, given the close linkages between CCP resilience, recovery and resolution, it will be essential for a core group of authorities to be able to assess the robustness of the CCP throughout its normal risk management, recovery and resolution planning processes as well as to prepare for close communication and coordination in emergency situations. Accordingly, authorities responsible for major cross-border CCPs should not only operate CMGs but also establish cooperative arrangements in line with Responsibility E (the composition of which does not have to fully coincide with that of CMGs), and for this purpose they should use multilateral information-sharing to the extent possible.

### 215 Enhancing the macroprudential safeguards for central clearing

Given the central role of CCPs in the financial system, it is critical to ensure that CCPs are not only robust on a stand-alone basis, but that their potential wider systemic risk externalities are also understood and mitigated.

Macroprudential safeguards for CCPs should, at a minimum, prevent CCPs from acting in a *procyclical* manner. This implies limiting potential contagion

effects across the wider financial system in the event of a CCP emergency that may arise from the high degree of risk concentration in CCPs as well as interdependencies between CCPs and major financial institutions. Another, more ambitious, objective would be to act in a *countercyclical* manner by preventing the excessive build-up of risk in good times and smoothen the impact of CCPs' financial risk management during the economic cycle, similar to what is already pursued in the banking sector (ECB, 2016), but of course operationalised in a way that is appropriate to the specific nature of central clearing. Cœuré (2016) discusses the former objective, while Constâncio (2016) discusses the latter.

Macroprudential safeguards for central clearing were already established under the PFMI and the *Key Attributes* and have been further enhanced under the CCP work plan.

- The PFMI require CCPs to adopt stable-through-the-cycle margin and collateral haircut practices to avoid sudden and steep increases of related requirements during an economic downturn. The forthcoming CPMI-IOSCO guidance on CCP resilience will further strengthen the requirements for non-procyclical behaviour by requiring CCPs to adopt a holistic approach in addressing these issues, using quantitative metrics and considering this aspect during the model validation process.
- The PFMI emphasis on stress-testing CCPs' liquid and mutualised default resource has made CCPs' risk management much more forward-looking than in the past. The forthcoming CPMI-IOSCO further guidance on stress testing as well as expected progress towards supervisory stress-testing are designed to introduce additional caution in preparing for stressed market conditions.
- Under the PFMI, CCPs with cross-border systemic relevance or a more complex risk profile need to comply with more stringent coverage requirements for their credit and liquidity

exposures so as to ensure that their financial buffers will be commensurate with their wider systemic risk implications. Measures to spur the establishment of cooperative arrangements in line with Responsibility E as well as of CMGs will provide important checks and balances for the risk management, recovery and resolution planning of cross-border CCPs and will be essential in supporting effective cooperation between authorities. This will help to ensure that a potential CCP emergency can be addressed in a swift, orderly and comprehensive manner, thereby limiting potential wider systemic contagion effects.

One area where further progress is still needed relates to the enhanced consideration of interdependencies between CCPs and major financial institutions in identifying cross-sectoral vulnerabilities and contagion channels. It would seem useful to develop the recent stock-take of central clearing interdependencies into a regular global data collection in order to ensure effective monitoring of related exposures over time. In the medium term, subject to further progress on supervisory stress-testing, it would seem useful to conduct top-down (model-based) stress-testing of the central clearing network and potential risk implications for the wider financial system.

### 31 Conclusion

The recent review of CCP resilience, recovery and resolution under the CCP work plan has confirmed that the safeguards established by the PFMI and the *Key Attributes for Effective Resolution of Financial Institutions* are adequate. Additional guidance on the application of these requirements will promote further rigour and consistency in CCPs' approaches as well as enhanced cooperation between authorities. The main priority at this juncture is to finalise that guidance and to then ensure its full and timely implementation.

In this context, one important priority is to ensure a sufficient level of granularity in the approaches

of both CCPs and the relevant authorities. The respective global rules are minimum requirements only. Enhanced CCP in-house stress-testing as well as progress in supervisory stress-testing should be used to assess more closely if and to what extent some CCPs, depending on their specific risk profile, may need to move beyond that. In the medium term, it is worthwhile considering an approach that would combine standardised minimum requirements with entity-specific ones based on a supervisory review process, including supervisory stress-testing. Greater granularity of CCP supervision and oversight will also help to better calibrate CCPs' defences for potential recovery or resolution scenarios.

Authorities should step up their efforts to enhance cooperation with regard to major cross-border CCPs and should ensure that the frequency and depth of cooperation is in line with the systemic risk implications of CCPs. Cooperation should also reflect the significant overlaps and interactions between potential default management, recovery and resolution scenarios and ensure that a core group of authorities from the most affected jurisdictions will be able to assess a CCP's defences throughout its potential lifecycle in a consistent and coherent manner. In addition, cooperation between authorities in charge of CCP supervision and oversight on the one hand, and resolution on the other, should ensure the consistency of recovery and resolution plans, the alignment of stakeholder incentives down the recovery waterfall and beyond, and the effective application of the "no creditor worse-off" principle.

Finally, authorities should work to further enhance the robustness not only of individual CCPs, but of the central clearing landscape as a whole. To this end, it would seem useful to move in the medium term towards a structured framework for the ongoing monitoring of central clearing interdependencies and multi-CCP stress testing. In addition, potential cross-sectoral spillover effects of CCP and banking rules should be carefully assessed when considering prudential changes.

## References

### CFTC staff (2016)

*Supervisory stress test of clearing houses*, November.

### Cœuré (B.) (2015a)

“Ensuring an adequate loss-absorbing capacity of central counterparties”, special invited lecture at the Federal Reserve Bank of Chicago 2015 Symposium on Central Clearing, Chicago, 10 April.

### Cœuré (B.) (2015b)

“The international regulatory agenda on CCP links”, speech at the ESRB workshop on CCP interoperability arrangements, 2 November.

### Cœuré (B.) (2016)

“Towards a macroprudential framework for central counterparties”, introductory remarks at a policy panel discussion on the progress with new macroprudential instruments at the ESRB international conference on macroprudential margins and haircuts, Frankfurt am Main, 6 June.

### Constâncio (V.) (2016)

“Margins and haircuts as a macroprudential tool”, remarks at the ESRB international conference on the macroprudential use of margins and haircuts, Frankfurt am Main, 6 June.

### Committee on Payments and Market Infrastructures (CPMI) – International Organization of Securities Commissions (IOSCO) (2012)

*Principles for financial market infrastructures*, April.

### CPMI-IOSCO (2014)

*Recovery of financial market infrastructures*, October.

### CPMI-IOSCO (2015)

*Implementation monitoring of PFMI: Assessment and review of application of Responsibilities for authorities*, November.

### CPMI-IOSCO (2016a)

*Resilience and recovery of central counterparties (CCPs): Further guidance on the PFMI – Consultative Report*, August.

### CPMI-IOSCO (2016b)

*Implementation monitoring of PFMI: Level 3 assessment – Report on the financial risk management and recovery practices of 10 derivatives CCPs*, August.

### CPMI-IOSCO (2017)

*Resilience of central counterparties (CCPs)*, April.

### Committee on Payment and Settlement Systems – CPSS (2010)

*Market structure developments in the clearing industry: implications for financial stability*, report of the Working Group on Post-trade Services, November.

### CPSS-IOSCO (2004)

Recommendations for Central Counterparties, November.

### European Central Bank (2016)

“Topical issue: the ECB’s macroprudential policy framework”, in: *Macroprudential Bulletin*, Issue 1/2016.

### European Commission (2016)

*Proposal for a regulation of the European Parliament and of the Council on a framework for the recovery and resolution of central counterparties and amending regulations (EU) No 1095/2010, (EU) No 648/2012, and (EU) 2015/2365*, November.

### European Securities and Markets Authority (2016)

*EU-wide CCP stress test report 2015*, 29 April.

### European Systemic Risk Board (2016)

ESRB report to the European Commission on the systemic risk implications of CCP interoperability arrangements, January.

**Financial Stability Board – FSB (2012)**

*Overview of progress in the implementation of the G20 recommendations for strengthening financial stability. Report of the Financial Stability Board to G20 Leaders, 19 June.*

**FSB (2014)**

*Key attributes of effective resolution regimes for financial institutions, October.*

**FSB (2016)**

*Essential aspects of ccp resolution planning – discussion note, August.*

**FSB (2017)**

*Guidance on central counterparty resolution and resolution planning – consultative document, February.*

**FSB SRC/FSB RESG/BCBS/CPM/IOSCO (2015)**

*CCP work plan, April.*