

Central counterparties: what are they, why do they matter and how does the Bank supervise them?

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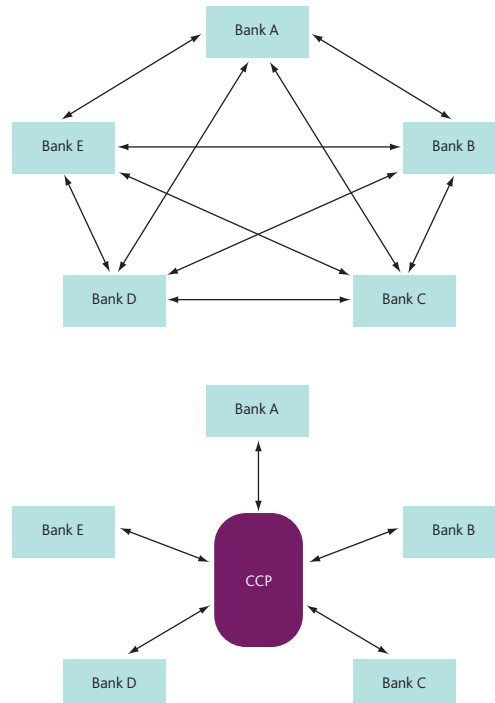
The Government introduced major changes to the system of financial regulation in the United Kingdom in April 2013, including creating the Financial Policy Committee and transferring significant new supervisory responsibilities to the Bank. As part of this, the Bank is now responsible for the supervision of central counterparties, or CCPs. This article explains what CCPs are, setting out their importance for the financial system — including the benefits they bring and some of the risks they could present if not properly managed. It also summarises the Bank's approach to supervising CCPs and describes some of the key priorities the Bank will be pursuing.

Financial market infrastructures lie at the heart of the financial system. Some facilitate the movement of cash and securities needed to settle transactions. Others intermediate exposures between market participants, guaranteeing that financial obligations are met. In essence, these market infrastructures are sets of rules, processes and operational arrangements for managing, reducing and allocating the inherent risks arising from transactions between market participants. As such, they play a crucial role in helping the economy and financial markets to function.

For these reasons, central banks have a long-standing interest in financial market infrastructures, which include payment systems, securities settlement systems, and central counterparties (CCPs). Responsibility for the supervision of securities settlement systems and CCPs in the United Kingdom transferred to the Bank of England from the Financial Services Authority (FSA) in April 2013 as part of a wider reform of financial regulation in the United Kingdom.⁽³⁾ The focus of this article is on CCPs, also known as clearing houses. It is intended as a primer on the economic functions they serve as well as the risks they carry for the financial system.

CCPs place themselves between the buyer and seller of an original trade, leading to a less complex web of exposures (**Figure 1**). CCPs effectively guarantee the obligations under the contract agreed between the two counterparties, both of which would be participants of the CCP. If one counterparty fails, the other is protected via the default management procedures and resources of the CCP.

Figure 1 A complex 'web' of bilateral exposures is reduced to a more simple network via a CCP



- (1) The authors would like to thank Pierre Antheaume for his help in producing this article.
- (2) To watch a short video explaining some of the key points from this article, see: www.youtube.com/watch?v=DC-PHNYcmr0.
- (3) This includes the microprudential supervision of banks, insurers and major investment firms by the newly established Prudential Regulation Authority (PRA); and the macroprudential regulation of the financial system as a whole through the Financial Policy Committee. See Murphy and Senior (2013).

CCPs run what is described as a 'matched book': any position taken on with one counterparty is always offset by an opposite position taken on with a second counterparty. This means CCPs do not take on market risk — an exposure to a change in the market value of the trades that they enter into — in their normal course of business.

But CCPs are greatly exposed to the risk that a counterparty defaults on outstanding contracts. This potentially leaves their book 'unmatched' and subject to market risk. CCPs manage this counterparty credit risk in a number of ways, including by taking collateral (or 'margin') from counterparties.

Clearing trades centrally means that CCPs themselves become crucial nodes in the financial network. It is estimated, for example, that almost half of all outstanding interest rate swap transactions are centrally cleared.⁽¹⁾ The systemic importance of CCPs is expected to increase further as the central clearing of standardised over-the-counter (OTC)⁽²⁾ derivatives becomes mandatory in line with commitments made by G20 leaders following the crisis. This makes it essential for CCPs to manage properly the risks they face.

This article is split into three sections. The first section describes the key functions and economic benefits of central clearing. The second outlines some of the risks CCPs could pose to the financial system. The final section describes the Bank's approach to supervising CCPs and some current policy issues.

Central counterparties: what are they and why are they used?

A key risk attached to financial market transactions is **counterparty credit risk** — the risk that one party to a contract defaults and cannot meet its obligations under the contract. This can lead to a loss for the counterparty on the other side of the contract. If those losses are severe enough, they may cause the affected parties financial distress which, in turn, can have a knock-on effect for their creditors. In this way, counterparty credit risk is an important channel for contagion and can be a potential source of systemic risk.

CCPs are financial market infrastructures that can reduce and 'mutualise' — that is, share between their members — counterparty credit risk in the markets in which they operate. Their origins as clearing houses can be traced back to the late 19th century, when they were primarily used to net payments in commodities futures markets. Clearing via CCPs initially grew through exchange-traded products including bonds, equities, futures and options contracts.⁽³⁾ During the first decade of this century, clearing became important for OTC products as well as those traded on exchanges.

The mandate for greater central clearing

The recent financial crisis served as a reminder of the impact an impaired financial system can have on the economy at large. In the early stages of the crisis in 2007–09, a lack of transparency over large bilateral positions between counterparties, combined with potentially insufficient collateral, had the effect of exacerbating other problems, such as the significant reduction in market liquidity. This was demonstrated in the market dislocation that followed the collapse of Lehman Brothers and near-collapse of AIG in September 2008, both of whom were major participants in OTC derivatives markets, including credit default swaps.

In response to the events of 2007–09, the G20 leaders mandated reform of the structure and transparency of OTC derivatives markets. Specifically, in September 2009 the G20 leaders agreed in Pittsburgh that all standardised OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through CCPs.

The markets covered by the G20 mandate are used by businesses and, through investment managers, by households to insure against a range of financial risks. The Financial Stability Board reported in April 2013 that, as at the end of February 2013, around US\$158 trillion of interest rate swaps and over US\$2.6 trillion of OTC credit derivatives were centrally cleared, representing 41% and 12% respectively of total outstanding notional amounts.⁽⁴⁾ These figures — as well as the range of products that can be centrally cleared — are expected to continue to increase, as mandatory clearing takes effect.

The key functions and benefits of CCPs

CCPs offer a number of economic and risk-reducing benefits. A key benefit of central clearing is the 'multilateral netting' of transactions between market participants, which simplifies outstanding exposures compared with a complex web of bilateral trades. Perhaps the most important benefit, however, is the role that a CCP plays in the event of one of its members defaulting: CCPs have a number of rules and resources in place to manage such a default in an orderly way.⁽⁵⁾

These benefits are explained in more detail below. In addition, the box on page 3 provides an example of a trade cleared through a CCP that is linked to economic activity. The box also lists the five CCPs in the United Kingdom that are currently supervised by the Bank.

(1) See Financial Stability Board (2013), pages 28–42.

(2) An OTC trade involves a direct transaction between two counterparties, rather than through an exchange.

(3) See Norman (2011).

(4) Financial Stability Board (2013), page 36.

(5) Some, but not all, of these default management benefits relate back to the reduced liquidity needs of CCPs' members that follow from multilateral netting.

Example of a trade cleared by a CCP

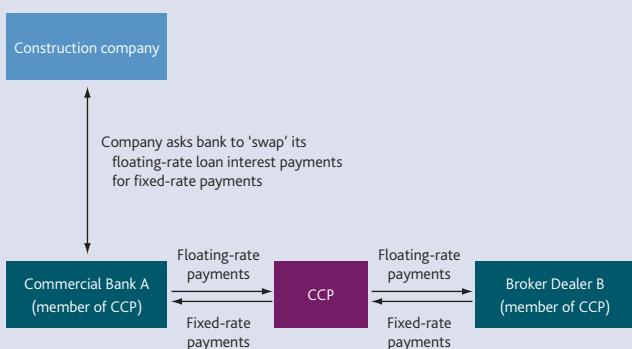
G20 leaders agreed in 2009 that all standardised OTC derivative contracts should be cleared through CCPs. This box gives an example of such a trade. It also provides information on the five Recognised Clearing Houses in the United Kingdom that are supervised by the Bank.

Trading via a CCP

An interest rate swap (IRS) is an example of an OTC derivative with important real-economy uses, and that may be centrally cleared. Consider a construction company that takes a loan from a bank for a period of three years to finance building a new housing development. This loan is a liability for the construction firm. If the interest rate charged on the loan varies in line with Bank Rate (or some other floating rate), the construction company may wish to 'swap' these variable (hence uncertain) interest payments for pre-agreed, fixed-interest payments: especially if its assets — rental incomes from residential properties, say — are also fixed over the period of the loan.

The company therefore approaches its commercial bank to arrange this interest rate swap (Figure A). The commercial bank enters into the market to find another financial institution that is willing to enter into a contract for the swap. If this transaction is cleared via a CCP then the CCP becomes the 'buyer' and 'seller' of the contract to the two counterparties. The CCP will calculate the amount of collateral ('initial margin') it requires from each counterparty — Commercial Bank A and Broker Dealer B in Figure A — and this collateral is held to mitigate against counterparty credit risk.

Figure A Example of a construction company entering into an IRS contract via a CCP



What happens if one of the counterparties default?

Suppose Broker Dealer B defaults before the end of the three-year contract, so is unable to make good its outstanding obligations to offer fixed-rate payments in return for floating-rate ones. The CCP must manage this exposure. For example, it may use an auction process to find another

counterparty to take on the swap contract. In this event, the collateral pledged to the CCP by Broker Dealer B could be used to cover losses the CCP might incur while arranging this. If this collateral proves insufficient to cover the losses, the CCP has access to a number of other financial resources, summarised by the 'default waterfall' shown in Figure 3 of the main text.

Central counterparties in the United Kingdom

There are currently five CCPs in the United Kingdom that are supervised by the Bank of England as Recognised Clearing Houses under the Financial Services and Markets Act 2000. Table 1 provides some information on those CCPs, including the main markets they serve, which include markets for equities, commodity derivatives, repos and interest rate swaps. The column on the right-hand side lists the number of members of each CCP.

Table 1 UK CCPs supervised by the Bank as at June 2013(a)(b)(c)

Clearing house	Main products cleared	Number of members
European Central Counterparty (EuroCCP) Ltd	European equities.	24
CME Clearing Europe Ltd	OTC commodity derivatives and interest rate swaps.	18
ICE Clear Europe Ltd	Energy and commodity contracts and European credit default swap transactions.	69
LCH.Clearnet Ltd	Clears a range of asset classes including interest rate swaps, repos, equities and commodities.	170
LIFFE Administration and Management	Exchange-traded interest rate products, equities, index and commodities derivatives, currently through an outsourcing agreement with LCH.Clearnet Ltd, though it is due to transfer clearing to ICE Clear Europe in Summer 2013.	46

(a) The London Metal Exchange Ltd has also made public its intention to establish a UK CCP, aiming to commence clearing in September 2014. Trades in its exchange are currently cleared through LCH.Clearnet Ltd.

(b) EuroClear UK & Ireland Ltd is also a Recognised Clearing House (RCH) under the Financial Services and Markets Act 2000 but does not offer central counterparty clearing services.

(c) A list of RCHs can be found at www.bankofengland.co.uk/financialstability/Pages/fmis/supervised_sys/rch.aspx#13.

A number of CCPs incorporated in overseas jurisdictions currently operate in the United Kingdom as Recognised Overseas Clearing Houses (ROCHs). The ROCH regime will continue for these CCPs until a decision on their application for authorisation under European Market Infrastructure Regulation is taken. That authorisation process will be led by the relevant national supervisory authority for EU-incorporated CCPs, and by the European Securities and Markets Authority for CCPs incorporated outside the EU. In the meantime, the Bank will continue the existing model of close co-operation with the home supervisor, together with annual reporting to the Bank by the ROCH in question. As at 1 June 2013, CCPs with ROCH status in the United Kingdom are: Cassa di Compensazione e Garanzia SpA; Eurex Clearing AG; European Multilateral Clearing Facility NV; ICE Clear US Inc.; LCH.Clearnet SA; SIX x-Clear Ltd; and the Chicago Mercantile Exchange.

Multilateral netting

CCPs can reduce **counterparty credit risk** by netting exposures across their members: that is, offsetting an amount due from a member on one transaction against an amount owed to that member on another, to reach a single, smaller net exposure. When trades are centrally cleared, the original counterparties' contracts with one another are replaced or 'novated' — with a pair of equal and opposite contracts with a CCP. Hence the CCP becomes the buyer to the original seller, and the seller to the original buyer.⁽¹⁾

Figure 2 provides a simplified example of this. Bank A enters into a contract that requires it to pay £8 million to Bank C; Bank C has a contract requiring a payment of £10 million to Bank B; and Bank B has a contract with Bank A where it must pay Bank A £6 million. The arrows in the top panel of **Figure 2** represent the gross exposures on these bilateral trades when these are not cleared centrally.

Following novation of trades, the CCP sits between the buyer and seller of each bilateral transaction (middle panel). This allows gross exposures to be 'netted' (bottom panel), reducing exposures in the event of default. For example, Bank B is exposed to potential losses of £10 million if trades are not cleared, but clearing means it has a single net exposure of £4 million to the CCP. The CCP also holds collateral, known as 'initial margin', to mitigate against the risk of default. This is explained further in the following subsection.

The netting of the payment obligations can also reduce the **liquidity needs** of members arising from those contractual obligations. Whether payment obligations arise only on a single settlement date or over the life of a contract, the CCP can calculate a single, net amount due from (or to) each member. So using the example in **Figure 2**, Bank A is obligated to make a gross payment of £8 million and receive a payment of £6 million if trades are not cleared. But with central clearing and net settlement, this is reduced to a single net payment obligation of £2 million.

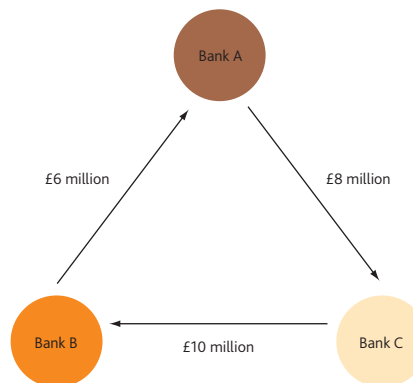
For some financial products, members' net payment obligations to or from the CCP are settled on a daily basis (or more frequently if there are large movements during the course of the day) to prevent the build-up of large exposures. Payments that become due because of changes in financial market prices are known as '**variation margin**' payments.⁽²⁾

Managing defaults in an orderly way

In taking on the obligations of each side to a transaction, a CCP has equal and opposite contracts. That is, payments owed by the CCP to a member on one trade are exactly matched by payments due to the CCP from the member on the matching trade. But if one member defaults, the CCP needs resources to draw on to continue meeting its obligations to surviving members.

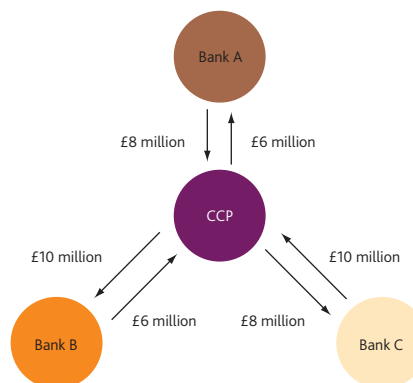
Figure 2 Netting efficiencies of central clearing

Non-cleared, bilateral trades...

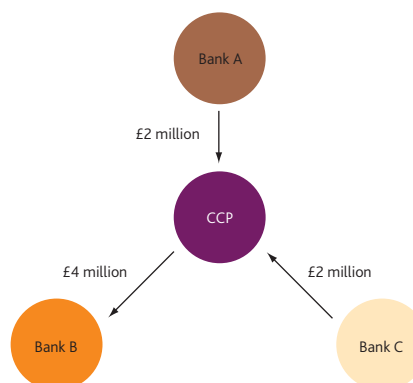


Note: Arrows and figures represent the direction and size of financial obligations from one bank to another.

...are centrally cleared using a CCP...



...allowing gross exposures to be netted.



CCPs have rules, arrangements and resources to ensure that they can respond in an orderly and efficient way to a member defaulting. For example, it might seek to find new counterparties to take on the positions of the defaulting member and return the CCP to a matched book of contracts.

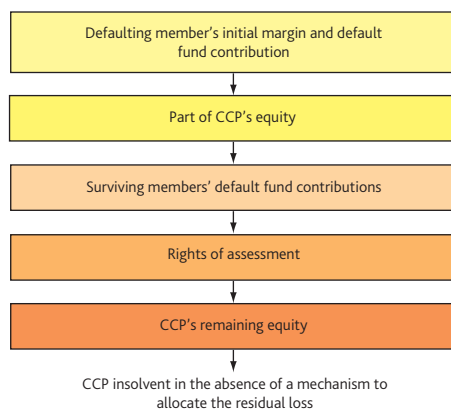
(1) Some CCPs become counterparties to trades via an open-offer system, whereby the CCP is automatically and immediately interposed in a transaction at the moment the buyer and seller agree on the terms. But the outcome is the same as novation.

(2) Members whose contracts have declined in value are obligated to pay the CCP an amount equal to this change in market value. Meanwhile, the CCP is obligated to pay those whose contracts have increased in value (Pirrong (2011)).

This is sometimes achieved through an 'auction' of the defaulter's positions among surviving members. In terms of resources to cover its obligations, CCPs typically have access to financial resources provided by the defaulting party, the CCP itself and the other, non-defaulting members of the CCP. The order in which these are drawn down helps to create appropriate incentives for all parties (members and CCPs) to manage the risks they take on.

These funds are collectively known as the CCP's 'default waterfall': **Figure 3** illustrates the resources — and the order in which they are called upon — for a typical waterfall.

Figure 3 A stylised CCP default waterfall



Collateral (or 'initial margin')

The first line of defence is collateral provided by the defaulting member. CCPs require a pre-set amount of collateral — referred to as 'initial margin' — to be posted to the CCP by each party in a transaction. In the event of default, the defaulting member's initial margin can then be used (or liquidated) to cover any losses or obligations that are incurred (top row of **Figure 3**). In addition, the 'variation margin' payments mentioned previously are important in limiting the build-up of exposures arising from changes in market prices over the life of the contract. This is done by the CCP calculating the gains and losses on each client member's portfolio — either on a daily basis or, sometimes, more frequently.

CCPs set margin policies and requirements such that the probability of sums owed by a defaulting member to the CCP on its cleared positions exceeding the amount of margin held is very small. CCPs seek to achieve this by setting initial margin to reflect their estimate of the riskiness of the underlying transaction. For instance, they typically charge higher margins on instruments with more volatile prices and on less liquid instruments that are expected to take a CCP longer to auction or 'close out' in the event of a default. Hence a defaulting member provides the initial margin as collateral to cover the first tranche — and ideally all — losses faced by the CCP should that member default.

The experience of UK CCPs following defaults such as those of Lehman Brothers and MF Global has been that initial margin provided by those firms was sufficient to cover losses.

The default fund and use of the CCP's equity

If the collateral posted by the defaulter to the CCP is insufficient to meet the amount owed, the CCP can then draw on the defaulting party's contribution to the CCP's 'default fund'. Usually, all members are required to contribute to this fund in advance of using a CCP. A key feature of CCPs is that losses exceeding those initial sums provided by the defaulter are effectively shared (mutualised) across all other members of the CCP.

Before using the default fund contributions of surviving members the CCP may contribute some of its own equity resources towards the loss (shown in the second row of **Figure 3**). This incentivises the CCP to ensure that losses are, as far as possible, limited to the resources provided by the defaulting member rather than being passed on to other members.

If the CCP's own contribution is fully utilised, the CCP then mutualises outstanding losses across all the other (non-defaulting) members. First, the CCP draws on default fund contributions from non-defaulting members (third row of **Figure 3**). If these loss-absorbing resources (which up to this point are all pre-funded) are exhausted, many CCPs may call on surviving members to contribute a further amount, usually up to a pre-determined limit. This is sometimes termed 'rights of assessment' (fourth row in **Figure 3**).

In the absence of a mechanism to allocate any further losses among its members, the CCP's remaining equity then becomes the last resource with which to absorb losses, though this is often quite a small sum when compared with initial margin and the default fund. If losses exceed this remaining equity, the CCP would become insolvent.

Historically, there have been few incidences of CCPs failing, but when this has happened, the impacts on financial markets have been significant. In 1974, the Caisse de Liquidation failed due to trades put forward by members without the consent of their clients and high volatility in the Paris White Sugar Market, leading to large margin calls that participants were unable to meet. More recently, the Kuala Lumpur Commodity Clearing House failed in 1983 after large defaults on palm oil contracts following a market squeeze. The Hong Kong Futures Guarantee Corporation failed in the aftermath of the stock market crash of 1987 which led to the closure of stock and futures exchanges in Hong Kong for four days.⁽¹⁾

(1) See, for example, Hills *et al* (1999).

To avoid insolvency and ensure the continuity of critical services, CCPs should also have explicit rules and procedures that allocate losses left uncovered after drawing on initial margin and the default fund. Some of these issues are discussed in more detail in the final section of this article.

In summary, **the reduction (through netting and collateralisation), the mutualisation and the orderly distribution of losses are the key differences between trades that are centrally cleared compared to non-cleared transactions.** The netting benefits reduce the size of exposures at default, and also the liquidity demands on traders during what could be stressed market conditions. Losses in excess of collateral provided by the defaulters are mutualised and allocated in a transparent and orderly fashion, reducing some of the uncertainty that would otherwise arise in the event of a firm's failure.

Risks associated with CCPs

Despite the economic benefits of central clearing, CCPs could also pose significant risks to the stability of the financial system if not properly managed. This section summarises some of the key systemic risks associated with CCPs. The final section then sets out how these risks are being addressed, including through establishing recovery and resolution frameworks for CCPs.

Systemic impact of a CCP failing

A consequence of central clearing is that CCPs themselves become crucial links in the financial network, especially where an individual CCP is the sole or dominant clearer for a particular market.⁽¹⁾ A large CCP that fails could act as a channel of contagion. The markets for the products it clears may even need to close for a period, hence the importance of establishing effective recovery rules and resolution regimes to minimise the disruption to clearing services that are critical to the financial system.

Past instances of CCP failures have typically been triggered by the default of one or more members. As described in the default waterfall in **Figure 3**, absent fresh injections of capital or other funds (or resolution actions by the authorities), a CCP without other loss-allocation arrangements becomes insolvent after all available financial resources have been exhausted, forcing the CCP to default on its own obligations to other members. CCPs may also fail for other reasons, for example, due to losses on investment of collateral, or the failure of a payment bank (used for collecting and distributing margin on the CCP's behalf) to which it has unsecured exposures. In these instances, the CCP would only be able to use its own capital to absorb losses, and not other parts of the default waterfall, since initial margin and the default fund are usually only available to cover member default.

CCPs as amplifiers of other shocks

In some instances, CCPs actions may have 'procyclical' effects by exacerbating other stresses in the financial system. For example, CCPs typically adjust initial margin demands in response to changes in market conditions. This is important for their own risk management. But if sufficiently large, these margin changes could have a destabilising impact on the CCPs' members.

For instance, a CCP may increase initial margin requirements in response to high price volatility. This could occur if initial margin had previously been set at too low a level when market conditions were benign, necessitating a big adjustment when conditions deteriorate. This increased burden may force the CCP's members into liquidating positions or else attempting to access other sources of funding to meet margin calls. Given that these events may occur at a time when financial markets are already illiquid (and credit conditions are tight), this can exacerbate price volatility.⁽²⁾ A better solution is for margins to remain at higher levels in good times even if this may be above the minimum level required by regulation.

Access to central clearing

In order to manage risks effectively, a CCP must place strict requirements upon its members. These relate to members' creditworthiness (solvency); their ability to meet margin calls within short periods (liquidity); and their operational reliability. This is important due to the role members play in the mutualisation of risks by CCPs. Clearing trades via a CCP is therefore limited to members with adequate financial and technical resources. Firms that are not members of CCPs (including non-financial institutions) can nevertheless benefit from central clearing as **clients** of clearing members. Client clearing is becoming an increasingly important part of central clearing.

How does the Bank supervise CCPs?

If CCPs are operated only in the private interests of their managers, owners, or even their members, they may underinvest in the mitigation of risks to the wider system. The Bank's role as supervisor is to ensure that these infrastructures are managed in a way that is consistent with the public interest, which includes reducing systemic risk. The Bank's aim is to establish a framework that creates incentives for the operators of CCPs and other financial market infrastructures (FMIs) to manage and mitigate systemic risk.

Responsibility for the supervision of central counterparties sits alongside the Bank's responsibilities for the oversight of payment systems and securities settlement systems in the

(1) For a discussion of the risk-reducing benefits in single CCPs versus multiple CCPs, see Duffie and Zhu (2010).

(2) It is similar for variation margin: members suffering large losses following a large price shock may struggle to liquidate positions in order to meet margin obligations. See Committee on the Global Financial System (2010).

Financial Stability Directorate of the Bank. **Table 1** in the box on page 3 provides a brief overview of the existing CCPs in the United Kingdom that are supervised by the Bank.

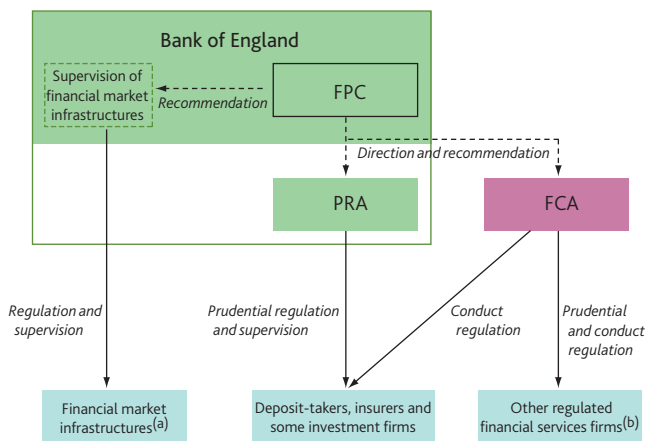
The framework for supervision

The Bank exercises its supervision of CCPs within the framework of a UK legal regime⁽¹⁾ that itself sits within directly applicable EU regulations.⁽²⁾

These regulations, in turn, follow global standards drawn up by the Committee on Payment and Settlement Systems (CPSS) and the International Organization of Securities Commissions (IOSCO). The 'Principles for financial market infrastructures' (hereon, the Principles) published by CPSS-IOSCO in April 2012 consolidate previous requirements and raise minimum standards, reflecting the increasing systemic importance of CCPs.⁽³⁾ These Principles form a keystone for the Bank's supervisory approach.

The Financial Policy Committee (FPC), established in April 2013 to monitor and take actions to reduce the build-up of systemic risk in the financial system, may also make recommendations in relation to supervision of FMIs. **Figure 4** shows how this fits in with the wider changes to the UK regulatory framework for the financial system.⁽⁴⁾

Figure 4 The Bank's role in the new framework for financial regulation in the United Kingdom



(a) Excludes regulation of trading platforms, which is the responsibility of the Financial Conduct Authority (FCA).
 (b) Includes asset managers, hedge funds, exchanges, insurance brokers and financial advisers.

Conducting supervision

Risk assessments

Supervised institutions themselves have primary responsibility for meeting the minimum standards of the CPSS-IOSCO Principles and regulatory requirements. Consistent with that, the Bank expects CCPs to complete their own self-assessments against the Principles, and provide these to the Bank. CCPs will be expected to review their self-assessment at least annually.

Self-assessment does not, however, mean self-regulation. The CCP's self-assessment does not replace the Bank's own

judgement, but is used as one input to its supervision. The Bank seeks to reach forward-looking judgements on whether a CCP's governance, operational design, policies or actions pose unacceptable risks to financial stability. Where the Bank judges such risks unacceptably high, it expects the FMI to take action to reduce them.

Key policy areas

The Bank of England has identified certain areas that it considers to be important and will focus on these as part of supervision. Some key topics are considered below. For more detail, see Bank of England (2013).

Governance

CCPs have considerable scope and discretion to influence how risk is managed in the markets they serve through their margin requirements and other binding rules; in effect they are systemic risk managers. A CCP should demonstrate that its governance and decision-making processes reflect the risk management purpose of the institution. This means having adequate regard not only to the management of microprudential risks to the institution itself, but also the interests of the financial system as a whole.

A strong user representation in the FMI's governance and the inclusion of independent directors, on both the board and the risk committee, is one way to help to ensure that the approach to managing risks is suitably broad in scope.

Financial risk mitigants: loss absorbency

Given that competitive incentives may result in pressure to lower margin requirements, the Bank carefully supervises where and how discretion is used in the modelling of margin requirements.

To mitigate credit risk, all UK CCPs are required to hold sufficient resources to cover the simultaneous default of their two largest members.

In addition to minimum standards in relation to credit risk, FMIs are also required to meet minimum standards in relation to liquidity risk. The Bank requires FMIs to demonstrate that they hold liquid resources above certain thresholds (as set out by EMIR and the Principles) in order to withstand extreme but plausible stresses. They must also have rules and procedures for allocating any liquidity shortfalls among their participants, should these resources prove insufficient.

(1) CCPs are regulated under Part 18 of the Financial Services and Markets Act 2000 (FSMA) and are subject to the UK 'recognition requirements' as Recognised Clearing Houses.
 (2) Specifically, the European Regulation on OTC derivatives, central counterparties and trade repositories, commonly known as the European Market Infrastructure Regulation (EMIR).
 (3) Committee on Payment and Settlement Systems and International Organization of Securities Commissions (2012).
 (4) See Murphy and Senior (2013).

Recovery and resolvability

While CCPs must hold a prudent level of pre-funded resources, it remains possible these will be insufficient, threatening the viability of the CCP itself if there are no plans to manage and to recover from this situation.

Given that many markets rely on the services of CCPs, a high priority is attached to CCPs demonstrating that they have plans to ensure the continuity of critical services should risks to the CCP crystallise. This will in part hinge on the clarity, credibility and comprehensiveness of plans to distribute any uncovered credit losses — that is, losses that remain after pre-funded resources in the default waterfall and any assessment rights have been exhausted — among CCP members in a way that means that service closure can be avoided.

The Principles require explicit rules and procedures on how any losses in excess of pre-funded resources would be allocated. The Bank has set out how it will assess the suitability of these arrangements. These include principles relating to clarity and transparency; awareness of the impact of loss-allocation rules on the incentives of members during other parts of the default management process (for example, participation in an auction); and that any provisions to close a service or 'tear up' contracts — that is, to cancel contracts (but to compensate for this via a 'cash sum' payable from one party to another) should be very much a last resort. These criteria are set out more fully in the *Bank of England Financial Stability Paper* on central counterparties and loss-allocation rules.⁽¹⁾

Should these recovery plans prove inadequate, the Bank must be able to resolve the FMI in a way that prevents or limits systemic disruption without calling on public funds. The Financial Services Act 2012 amends the Banking Act 2009 to establish a resolution regime for CCPs in the United Kingdom, as part of which the Bank is the resolution authority for CCPs. But further changes are required internationally to ensure that failing CCPs can be resolved safely and effectively,⁽²⁾ and the Financial Stability Board and CPSS-IOSCO are leading further work on this.

Transparency and disclosure

Transparency is important to enable CCP participants and other stakeholders in the stability of the financial system to assess risk exposures. All FMIs' plans for managing risk must be suitably transparent to those that rely on the FMIs' services, including members, indirect participants, the authorities and the general public. The Bank attaches importance to public disclosure by FMIs so that market discipline can reinforce internal and regulatory incentives for effective risk management.

More detail on all of these policy areas, and other aspects of supervision in the United Kingdom, can be found in 'The Bank of England's approach to the supervision of financial market infrastructures'.⁽³⁾

Co-operation with overseas authorities

Some CCPs operate across borders, reflecting the global nature of many financial markets. A single CCP operating across multiple jurisdictions and currencies can provide efficiencies and reduce risk through multilateral netting of exposures across counterparties in different jurisdictions. Conversely, fragmentation of business across multiple CCPs is likely to result in greater costs and greater liquidity demands for market participants. Relevant overseas authorities from those jurisdictions, including relevant central banks and market and prudential supervisors, are important stakeholders in oversight and supervision. This is recognised both under the Principles and in the detailed 'college' arrangements established under EMIR.⁽⁴⁾ Further, the Financial Stability Board has identified four safeguards as key to establishing a resilient and efficient global framework for CCPs. These are summarised in the box on page 9.

For UK-based CCPs that serve global markets, the Bank accepts particular responsibility for ensuring effective co-operative oversight. As well as ensuring that the regulatory colleges required under EMIR for CCPs yield all intended benefits, the Bank will also involve authorities from beyond the EU in co-operative oversight of relevant CCPs. The Bank is convinced of the benefits of working with the relevant international authorities and will actively seek their input, going beyond the minimum levels of co-operation set out in the Principles. This contributes to the effectiveness of supervision of UK CCPs by ensuring other authorities can contribute insights, challenge assumptions and influence outcomes in ways that reduce risks. The Bank also stands ready to contribute to co-operative arrangements established by other authorities for FMIs in their jurisdictions.

CCPs that are part of group companies

Some CCPs supervised by the Bank also form part of groups that include other FMIs, other regulated financial institutions or indeed non-regulated firms.

An individual FMI entity remains responsible for meeting the standards and regulations applicable to its particular function. But the Bank needs to understand how the institutions that it supervises relate to the rest of any group of which they form a part.⁽⁵⁾ This will help to ensure that critical UK CCP services are not at risk of contagion from disruptions in other parts of the group and can meet all applicable regulatory requirements on a standalone basis.

(1) See Elliott (2013).

(2) See Tucker (2013).

(3) See Bank of England (2013).

(4) 'College' refers to a working group of relevant authorities (including central banks and supervisors) which enhances the consolidated supervision of an international financial institution.

(5) A number of existing UK CCPs form part of a group which also includes a Recognised Investment Exchange that is supervised by the Financial Conduct Authority (FCA). The Bank co-operates closely with the FCA, under a published Memorandum of Understanding, available at www.bankofengland.co.uk/about/Documents/mous/moumarket.pdf.

International policy work

The G20 commitment on central clearing of standardised OTC derivatives has increased recognition of the importance of the role of CCPs in the financial system.

As part of ongoing international efforts to enhance the resilience of the financial system, the Financial Stability Board has identified four safeguards as key to establishing a resilient and efficient global framework for CCPs within which the G20 commitment can be met. These are:

- i. **Fair and open access** by market participants to CCPs, based on transparent and objective criteria.
- ii. **Co-operative 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. This is enshrined in Responsibility E in the CPSS-IOSCO Principles. Co-operative arrangements are also an important part of CCP regulation under EMIR.
- iii. **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 the CCP is systemically important. CPSS-IOSCO published a consultation document on recovery and resolution of financial market infrastructures in July 2012. In the United Kingdom, a specific resolution regime for UK CCPs has been introduced under the Financial Services Act 2012.

- iv. **Appropriate liquidity arrangements** for CCPs in the currencies in which they clear.

In addition, CPSS and IOSCO are also working on a disclosure framework for FMIs, including CCPs. The Committees released a disclosure framework in 2012 and continue to work to develop requirements on key quantitative information to be provided by FMIs. This is intended to enable all stakeholders to evaluate the systemic importance of FMIs in the markets they serve, as well as the risks they might bring to these markets and the risks associated with being, or becoming, a participant.

The Bank will work in consultation and co-operation with other authorities to ensure that UK-based CCPs, and the supervision of UK CCPs, satisfy all four safeguards as well as the other agreed international principles and standards.

Enforcement

The Financial Services Act 2012 confers on the Bank a set of powers to ensure it can deliver on its supervisory responsibilities for UK CCPs, known as Recognised Clearing Houses (RCHs). These include both tools for intervention and for sanctions in the event that RCHs fail to satisfy supervisory requirements. This provides a more graduated 'sliding scale' of options to enforce supervisory requirements than was previously available to the FSA. The powers fall into four main areas: information gathering; imposing requirements and rules; powers of direction; and sanctions and warning notices. The Bank may also gather information from qualifying parent undertakings and has a power to direct them in defined circumstances.

The Bank aims to supervise with the support of CCPs and their participants, having clearly explained the risk rationale for its supervisory priorities and actions. The Bank's supervision is, however, conducted in the shadow of the powers granted by Parliament, and these powers will be used where necessary to effect change.

Conclusion

By enabling transactions to be settled smoothly, financial market infrastructures are a key ingredient to the stability of the financial system. Central counterparties — one type of financial market infrastructure — sit between the buyer and seller of a trade, taking on the obligations of each counterparty. In the event that one counterparty fails, CCPs can reduce counterparty credit risk, through the default management procedures and resources of the CCP as well as the 'netting' of exposures that would arise from a world of non-cleared trades.

As a consequence of clearing trades centrally, however, CCPs themselves become crucial points in the financial network. For this reason, it is important for CCPs to manage properly both risks to themselves and risks stemming from their activities to the markets they serve; and for supervisors to ensure that CCPs are managed and operated effectively in a way that takes account of their systemic importance.

Since 1 April 2013, the Bank of England has had new responsibilities for the supervision of CCPs as well as securities settlement systems — one part of a wider reform of financial regulation in the United Kingdom.

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