

## Box 6

### CENTRAL CLEARING FOR DERIVATIVES

Financial derivatives play an important role in the financial system. They allow financial and industrial corporations to hedge their risk exposures in a customised way – thereby facilitating risk-taking that is integral to economic growth. They also, however, present specific risk management challenges insofar as this market is inherently complex, given the heterogeneous nature of derivatives, their inherent degree of leverage, more limited liquidity and the significant role of non-linear risks.

The global financial crisis highlighted additional risks in over-the-counter (OTC) derivatives markets that arise from the limited development of financial market infrastructures. In view of also the bilateral and bespoke nature of OTC derivatives, counterparty risk management and transparency have proved to be insufficient.<sup>1</sup> Against this background, the G20 agreed in 2009 to strengthen the infrastructure for OTC derivatives through mandatory reporting, electronic trading and central clearing obligations.

Policy-makers recognise centralised clearing platforms (i.e. central counterparties (CCPs)) as a key tool to enhance counterparty risk management with a view to ensuring the application of robust and consistent margin requirements, multilateral netting and risk-sharing. Given the fragmented nature of OTC derivatives markets, the use of CCPs for these products is considered particularly beneficial. Recent research supports the arguments for an increased role for CCPs in three ways.

First, in determining the positions of their members, CCPs take into account all transactions cleared. In addition to the improvement of transparency, this also redresses a basic externality in financial markets, namely the fact that whenever a party enters into a new transaction, this affects existing transactions, but is inadequately reflected in the new transaction as the newcomer is unaware of prior transactions. A CCP can counter this externality.<sup>2</sup>

1 See D. Russo, “OTC derivatives: financial stability challenges and responses from authorities”, *Financial Stability Review*, No 14, Banque de France, July 2010.

2 For more on this externality, see C.A. Parlour and U. Rajan, “Competition in loan contracts”, *American Economic Review*, Vol. 91, No 5, December 2001, and V.V. Acharya and A. Bisin, “Counterparty Risk Externality: Centralized Versus Over-the-counter Markets”, *NBER Working Papers*, No 17000, National Bureau of Economic Research, April 2011.

Second, given that CCPs have a more complete picture of exposures than individual counterparties, it can provide a more accurate assessment of exposures, which supports both better risk management and a better allocation of capital. Combined with the CCP's role in multilateral netting, this can also free up substantial amounts of collateral.<sup>3</sup> Furthermore, the CCP's role in applying robust and consistent margin requirements does not only offer protection against default, but – just as importantly – the threat of losing collateral improves incentives to avoid default in the first place.<sup>4</sup> By enforcing margin calls, a CCP also avoids bilateral disputes about such calls, as witnessed in the financial crisis.<sup>5</sup> Clearly, the design of margin requirements is complex. Poorly designed margins may lead to underinvestment in socially optimal but privately costly protection against default insofar as they are viewed as perfect insurance for transacting parties. Furthermore, margins may be potentially destabilising since the selling of assets to comply with a margin call can depress prices, leading to a downward revision of asset values that requires a further margin call, and so on.<sup>6</sup> However, CCPs can mitigate such risks by applying forward-looking margin models to reduce potential pro-cyclical effects.

Third, the nature of CCPs as independent clearing agents enables them to provide effective insurance against counterparty risk. By pooling risks, a CCP can exploit the law of large numbers to make insurance payments to some, using the insurance fees of others. However, care needs to be taken that the “mutualisation” of risk does not lead to moral hazard. Insurance against the aggregate component of one's own risk requires finding counterparties with little exposure to this aggregate component (say from another industry or economic region). But incentives to perform such “due diligence” suffer when parties are fully insured. Hence, a CCP must provide incentives (e.g. through margin requirements and default fund contributions proportionate to the specific risks of each clearing member) for private parties to still search for sound counterparties that enhance the risk-bearing capacity of the entire system.<sup>7</sup>

While a stronger role for CCPs offers many benefits in terms of financial stability, it is not without risk. First and foremost among these risks is the fact that a CCP is, by definition, a systemically important institution that can easily become “too big to fail”. This presents a clear case for the tight regulation, supervision and oversight of these entities. In the same vein, recovery and resolution arrangements for CCPs are important in order to mitigate the potential risk of moral hazard.

Furthermore, there are a number of issues specific to the effective implementation of centralised clearing – relating to e.g. the breadth, governance and the market structure – that need to be given due consideration.

With respect to breadth, since one of the main benefits of centralised clearing is the mutualisation of risk, clearing may have to be mandatory in order to be effectively implemented. The incentives

3 On such “netting efficiencies”, see D. Duffie and H. Zhu, “Does a central clearing counterparty reduce counterparty risk?”, *Review of Asset Pricing Studies*, Vol. 1, Issue 1, December 2011.

4 For more on the economics of optimal collateral in the context of derivative contracts (i.e. margins), see B. Biais, F. Heider and M. Hoerova, “Risk sharing or risk-taking? Counterparty risk, incentives and margins”, *Working Paper Series*, No 1413, ECB, January 2012.

5 See, in particular, the disagreement between AIG and Goldman Sachs about the margin calls on their credit default swap positions in “Testy conflict with Goldman helped push AIG to the edge”, *New York Times*, 7 February 2010.

6 On such downward spirals, see M.K. Brunnermeier and L.H. Pedersen, “Market Liquidity and Funding Liquidity”, *Review of Financial Studies*, Vol. 22, Issue 6, June 2009.

7 See B. Biais, F. Heider and M. Hoerova, “Clearing, Counterparty Risk, and Aggregate Risk”, *IMF Economic Review*, Vol. 60, Issue 2, July 2012.

for individual parties to join a CCP are greatest when many others join as well. As long as only few other members have joined, the benefits of central clearing may be outweighed by its costs from the perspective of individual participants, which may lead to a coordination failure and hamper the establishment and use of CCPs. This fundamental problem was an important consideration underlying the G20's mandatory clearing mandate for OTC derivatives.

With regard to governance, organising a CCP as a cooperative or mutual undertaking, the users of which are its owners, could be beneficial in terms of risk mutualisation. However, cooperatives are often limited in scope and scale. A for-profit CCP owned by external shareholders can be more efficient, but should be supervised and overseen as the objective of making a profit and that of providing for appropriate risk mitigation may not always be fully aligned with one another.

Finally, as regards the market structure, it is important to appropriately balance efficiency and safety considerations. On the one hand, competition between CCPs reduces the economies of scale inherent in the pooling of risks, and may also entail the risk that the optimal amount of the public good in question (clearing) is ultimately not provided.<sup>8</sup> On the other hand, concentration on central clearing, although it may maximise netting efficiencies, raises other financial stability concerns in terms of excessive risk concentration and obstacles both to the effective risk management and to the appropriate oversight and supervision of such entities, especially in cases where they operate on a cross-border basis. In view of the risks arising from global clearing, action should be taken in parallel to promote interoperability between CCPs (subject to appropriate safeguards) and to ensure that competition between CCPs does not lead to a reduction of risk management standards.

<sup>8</sup> Such standard economic reasoning may not hold when there is asymmetric information in the market — see T. Santos and J.A. Scheinkman, “Competition among Exchanges”, *Quarterly Journal of Economics*, Vol. 116, Issue 3, August 2001.