

## Box B: Central Clearing of Over-the-counter Credit Derivatives

In the past year a number of international regulatory and government groups have called for improvements to the operational infrastructure for over-the-counter (OTC) derivative markets, especially for credit derivatives, including credit default swaps (CDS). A proposal that is receiving increased support is that central counterparties (CCPs) be used for the clearing of transactions in these markets.

### Background

Credit default swaps are derivative instruments that allow market participants to buy and sell a notional dollar amount of protection as insurance against the default of a reference entity in exchange for a regular premium payment. The reference entity can be a single borrower, such as an individual corporation or government, or it can be a more exotic entity such as an index of other CDS written against tranches of residential mortgage-backed securities.<sup>1</sup> The CDS market has grown very quickly over recent years: according to the Bank for International Settlements, the notional value of CDS outstanding in major financial markets was US\$57.3 trillion in June 2008, having increased by more than 450 per cent over the preceding three years. One reason for this rapid expansion is that, being an OTC market, the CDS market offers counterparties the flexibility of customised, bilaterally negotiated terms on each transaction. However, this lack of standardisation, together with the very rapid growth in the number of transactions and counterparties, has greatly increased the market's operational complexity.

Further increasing operational complexity has been the bilateral counterparty risk management of market participants. As with other OTC derivative transactions, a CDS buyer faces the risk that its counterparty may default on its obligation before the contract expires, leaving the buyer unprotected and forced to replace the trade with another counterparty. To mitigate the potential for loss in that event, market participants typically negotiate terms that give the CDS buyer the right to demand an initial margin (usually collateral such as cash or government bonds) from the CDS seller as some minimum protection should the seller default. If CDS premiums subsequently rise (thus increasing the cost of purchasing replacement protection should the CDS seller default), more collateral may be posted. Conversely, if prices fall, collateral can be returned, or the CDS buyer might even be required to post collateral to the seller. With positions generally being marked-to-market daily, participants are continuously exchanging collateral, which might require tracking the ownership of securities across numerous transactions.

In the largest CDS markets – mainly the United States and Europe – regulators have for several years been encouraging participants to address the risks arising from these operational complexities. A group of the major international dealers in the credit derivatives market and

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<sup>1</sup> A discussion of the latter can be found in Reserve Bank of Australia (2008), Box B: The ABX.HE Credit Default Swap Indices, Financial Stability Review, March.

their regulators, convened by the Federal Reserve Bank of New York, has been instrumental in encouraging several important improvements to OTC infrastructure. These include: increased automated processing of trade confirmations via the New York-based Depository Trust and Clearing Corporation (DTCC); and the launch of DTCC's Trade Information Warehouse, a central repository of information on credit derivatives trades executed in the OTC market.

The risks associated with operational complexity and decentralised clearing were highlighted by the default of Lehman Brothers in September 2008. Lehman had been an active, market-making participant in CDS markets, so its default precipitated a significant deterioration in market liquidity. Those with direct counterparty exposure to Lehman also faced considerable uncertainty and complexity, at least initially, in identifying the extent of their open positions and how much money they owed or were owed upon close-out, and in co-ordinating the decentralised replacement of defaulted trades. In addition, establishing their recourse to collateral placed with Lehman was made more difficult by the common practice of 'collateral rehypothecation'; that is, securities posted as collateral by a CDS seller were often then used by the buyer as collateral for other transactions, CDS or otherwise.

## Central Counterparties

In contrast to the situation in OTC derivative markets, the default of Lehman was handled much more efficiently in markets served by CCPs. Lehman's open positions were ascertained quickly and unwound with little uncertainty regarding counterparty risk or disruption to the broader market, and the close-out process did not create co-ordination problems. This is because, in markets with CCPs, the CCP is interposed as the counterparty to every trade once it is negotiated, becoming the buyer to every seller and the seller to every buyer. In this way, the only direct counterparty risk in the market is between individual participants and the CCP, and this is reduced using standardised, conservative risk management tools and multilateral netting, such that individual participants have smaller exposures overall.

For example, the unwinding of Lehman's US\$9 trillion open positions in LCH.Clearnet Limited's SwapClear, a central counterparty for OTC interest rate swaps, proceeded smoothly. SwapClear's centralised and tested default-management process brought in dealers from participant firms to hedge the market exposure associated with Lehman's open positions and then auction the hedged portfolio to surviving participants. Recourse to LCH.Clearnet Limited's default fund proved unnecessary for any of the products it cleared, since adequate margin had already been collected from Lehman.

In addition to reduced counterparty risk, CCPs can bring other benefits to a market, including:

- encouraging streamlined operational processes;
- reducing collateral management complexities;
- mitigating systemic risks arising from a complex network of interconnected bilateral exposures;

- providing a focal point for regulation and oversight of risk management; and
- reducing informational asymmetries in the market.

These advantages had seen the potential expanded role of CCPs in OTC derivatives markets discussed even before the onset of the recent turmoil. Recent events have given these discussions more impetus, and in the past year a number of international regulatory and government fora have promoted CCP clearing and settlement of CDS transactions.<sup>2</sup> Given the increased regulatory and market appetite for their services, several CCPs in both the United States and Europe have developed products for credit derivatives, with two having already commenced operations.

Because CCP clearing necessarily involves centralisation of risk in the market, it is essential that the CCP's risk management practices are robust and that the CCP has adequate capital backing. At the same time, the market must be able to bear the cost of ensuring the CCP's robustness without undermining market functioning. In general, the prerequisites for a robust and financially viable central counterparty solution include:

- sufficiently standardised contract terms, to facilitate automated processing and netting;
- a relatively predictable distribution of market price movements, to ensure confidence in initial margin coverage;
- reliable mark-to-market valuations, to underpin mark-to-market margin calls; and
- a liquid market for close-out in the event of default, or the capacity to establish robust default-management procedures with involvement of market participants.

While credit derivative indices are likely to meet these prerequisites, single-name CDS pose more challenges, partly because of their inherent event risk and the possibility of simultaneous defaults by the CDS seller and reference entity. As such, the initial margins required to ensure adequate coverage on a single-name CDS portfolio are likely to be quite high. An alternative would be to rely more heavily on mutualised loss sharing in the default fund, although this would require higher participant contributions. The prospective providers of CCP clearing services for credit derivatives are currently working through these issues.

## The Australian Context

The Reserve Bank, together with ASIC and APRA, have been monitoring developments in this area closely. Much of this work is being carried out via an inter-agency working group established in mid 2008. Since the end of last year this group has been surveying participants in the OTC derivatives market in order to: assess the scale of activity in the various OTC derivatives product segments; understand the split between onshore and offshore activities; gauge risks in existing risk-management and post-trade practices; and examine existing use of automated facilities. ✎

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<sup>2</sup> For instance, *Financial Stability Forum (2008)*, Report of the Financial Stability Forum on Enhancing Market and Institutional Resilience, 7 April, and *Group of 20 (2008)*, Declaration: Summit on Financial Markets and the World Economy, 15 November.

