Book Review

Counterparty Credit Risk: Measurement, Pricing and Hedging, edited by Eduardo Canabarro, Risk Books, 2009, 356pp., £125.00. ISBN: 978-1-906348-34-2

The book deals with counterparty credit risk (CCR) in over-the-counter (OTC) transactions between two parties – namely the risk that one party (or the other) may not, in a bilateral financial transaction, be able to meet its side of the bargain.

There are fourteen chapters in the book, each chapter written by a professional(s) in the credit-risk field. The authors come from Morgan Stanley, Goldman Sachs, J.P. Morgan and Citigroup (to mention only a few firms) and form a positive *Who's Who's* of expert practitioners in the credit-risk field. The book is a collection of essays from these practitioners devoted to providing the ways and means to measure, price, hedge, mitigate and stress-test counterparty credit risk; to ensure that each participant party has enough economic and regulatory capital and to ensure confidence in the system as a whole. In addition, the book addresses 'stress-testing' and 'back-testing' of counterparty credit risk. This book is to be recommended for all participants who are concerned with managing counterparty credit risk.

The book makes clear that coping with the different aspects of counterparty credit risk is a complex problem. The severity of this risk depends, inter alia, on the current net total exposure of one party to the other (over all the relevant bilateral contracts), whether the relative creditworthiness of one or other party (or both) has deteriorated since the contract was originated, the probabilities of default, the recovery rates on default, the extent to which netting arrangements exist between the parties and any arrangements to exchange collateral.

The continual 'marking-to-market' of the value of contracts becomes important. For the pricing of an OTC contract, the book discusses the adjustment to the 'risk-free' value of the contract ('credit valuation adjustment') to allow for the factors in the paragraph above. As these factors vary over the life of the OTC contract, this adjustment changes in value.

The action of other market participants who may wish to 'pull out their money' from a specific party (on deterioration of its creditworthiness) may cause significant liquidity difficulties for that specific party; and may cause difficulties for the system as a whole ('systematic risk') and for other counterparties, particularly if, for them, there is difficulty to replace, with another party, their OTC contracts. The growing interdependence of the counterparties affects the stability of the system as a whole and adds a further dimension to counterparty risk.

The book states that the value of a contract can change sign (from positive to negative and vice versa) over its lifetime. An example of this is where the bilateral contract requires a swap of interest rates; one party ('payer party') paying a fixed interest rate while the other party ('receiver party') pays a floating interest rate. If, for example, floating interest rates fall to a low level (compared with what they were) the receiver party is now in an advantageous position, as he receives a fixed interest rate which is now above comparable market rates. The contract, which started at zero value, is now of considerable positive value to the receiver party and, for that party, that means considerable exposure.

160

If there was ever a need to replace the contract, it would be expensive for the receiver party. However, interest rates might have gone the other way (or go the other way in the future) with the positive value now being transferred to the payer party.

For another example, if a party ('insured party') buys a credit default swap from another party ('insuring party'), it buys insurance protection against the default of a third party bond ('reference entity') which the insured party may or may not own. The book addresses the risks arising from the creditworthiness of the insuring party deteriorating while, for reasons of positive correlation, the creditworthiness of the reference entity deteriorates ('wrong-way' risk).

The book addresses the measures which minimise counterparty credit risk. These include the use of:-

1) standard documentation – where the International Swaps and Derivatives Association (ISDA) Master Agreement is used,
2) close-netting – where only the algebraic summation of the value of contracts is assessed on default of a counterparty,
3) payments-netting – where only the algebraic sum, of the day's payments, are settled,
4) collateral – where the party whose side of the contract has a negative value, posts collateral to the other party,
5) third party collateral – where collateral is posted to the safe-keeping of a secure third party,
6) marking-to-market – where parties place a value on the market value of the contract,
7) exchange – where an exchange is used so that contracts are now between the exchange and the participant parties,
8) margin – where margin is posted/received to/from the exchange every trading day,
9) hedging – where one contract will gain in value when another falls.

The editor says in his chapter,

> "… *despite so much progress…counterparty risks inflicted large losses on banks during the latest crisis* (i.e. the recent financial crisis, 2008-2009) *to the tune of US$ 10 billion for one bank and multiples of that for the entire banking industry.*"

The U.K. general public are aware of the difficulties caused to the British Government and the U.K. taxpayer by the failure of Northern Rock, Royal Bank of Scotland and Bank of Scotland. Equally, the American public are aware of the difficulties caused to the American Government and U.S. taxpayer by the failure of American International Group, Bear Sterns, Fannie Mae, Freddie Mac and the bankruptcy of Lehman Brothers.

The various authors contributing to the book recognise that the success of the financial system depends not only on the creditworthiness of the individual participant companies but also on the creditworthiness of the financial system as a whole.

David O. Forfar