At long last

After more than a decade of active deployment at major institutions, simulation-based estimation of counterparty credit exposure is on track to become part of the Basel II regulatory capital regime.[1] David Rowe notes, however, that its impact on regulatory capital is not the most important benefit of this change

Deployment of sophisticated simulation methods for estimating counterparty credit exposure for derivatives began in earnest in the early 1990s. The first such system with which I was involved went live in December 1993 and was the subject of my first contribution to *Risk*.[2] In 1995, *Risk* published a volume of collected papers entitled *Derivative Credit Risk*. It even included a discussion of ways to integrate default likelihood into the contingent exposure simulation process.

Looking only at the exposure aspect of derivatives credit risk, it is fair to say it developed earlier and faster than did portfolio credit modelling and default analysis. Despite this, including such techniques in Basel II has remained a low priority during the past six years that the framework has been under discussion.

David Rowe is group executive vice-president for risk management at SunGard Financial Systems – Europe.
Email: david.rowe@risk.sungard.com

A big step forward

In April, the Basel Committee on Banking Supervision released a new proposal for treatment of trading credit risk based on a joint proposal put forward in late 2003 by the International Swaps and Derivatives Association in conjunction with the British Investment Banking Association and the Bond Market Association.[3] The essence of the industry proposal was to use a counterparty's expected exposure (EE) from a multi-step simulation as the basis for the capital calculation. This was to be multiplied by a factor, dubbed alpha (α), to account for the volatility of exposure that tends to increase the dispersion of the credit loss distribution. The industry's proposed value for alpha was 1.1. Their submission demonstrated that, in typical well-diversified dealer portfolios, treating 110% of EE as a non-stochastic exposure value yielded the same economic capital as simulating exposure and default simultaneously.

In a typically cautious response, the Committee proposes to set the default value for α equal to 1.4. This value may be reduced if an institution can convincingly demonstrate that their specific portfolio justifies a lower value, but it is subject to a floor of 1.2. Certainly, there is reason to believe that the diversification of dealer portfolios, both within and across counterparties, may vary considerably. This justifies placing the burden of proof on individual institutions to justify a lower value. The basis for a floor of 1.2, however, is far more tenuous. My guess is that, once supervisors become more comfortable with the reliability of the analysis involved, this floor will eventually be relaxed or removed.

Another supervisory concern was the tendency for short-term business to be rolled over through the course of the standard one-year time horizon for capital calculations. This is addressed by insisting on the use of what the proposal calls effective expected exposure (effective EE). This is simply the greater of current period EE or the past peak EE. There also is a maturity adjustment based on the ratio of discounted time-weighted expected exposure out to the longest transaction in a netting set divided by the same concept measured out to one year. While characteristically conservative, these seem like reasonable treatments of the rollover and maturity issues.

The standardised method

The proposal also includes a standardised method that permits recognition of directly offsetting responses to any one market variable. This might have been an important advance five or six years ago. Today, it is hard to see why an institution would undertake the considerable expense to implement this fairly complex approach when it falls well short of providing the reliability and insight offered by the full simulation approach, and when the full simulation approach is widely available in competitive vendor software.

Regulatory rules and risk management practice

Perhaps the most deleterious impact of the archaic Basel I rules in this area has been their tendency to stifle progress in internal risk systems at many significant institutions. As noted above, progressive institutions have forged ahead with advanced analytics and sophisticated exposure limit systems. In other institutions, however, the implicit regulatory stamp of approval on the mark-to-market plus add-on approach has been an obstacle to progress. A methodology that was intended explicitly to estimate aggregate credit risk capital for an institution's entire derivatives book was widely adopted for tracking exposure to individual counterparties and even individual trades.

The misleading and dysfunctional aspects of such an approach have often been decried by me and others.[4] I expect the biggest contribution from allowing simulation methods in the calculation of regulatory capital for derivative credit risk will be to relegate the add-on approach to a poor third place among the three alternatives. This effectively removes any implicit supervisory imprimatur for the add-on approach and will make it increasingly difficult for serious participants in these markets to justify its continued use. ■

[1] *Basel Committee on Banking Supervision, The application of Basel II to trading activities and the treatment of double default effects, April 2005, pages 3–42*
[2] *Rowe D, Curves of confidence,* Risk *November 1993, pages 52–55*
[3] *See Canabarro E, Picoult E and Wilde T, Analysing counterparty risk,* Risk *September 2003, pages 117–122, and Rowe D, Reason for hope,* Risk *September 2003, page 109*
[4] *See, for example, Rowe D, Down with add-ons,* Risk *October 2000, page 55; Rowe D, Counterparty credit risk – let's get serious,* Risk *November 2000, page 103; and Rowe D, The evolution of counterparty credit risk management, in Modern Risk Management – A History, Incisive RWG, 2003, pages 205–222*