Justifying granularity

The granularity adjustment for the IRB approach to credit risk contained in Basel II is controversial. Some banks say it is too simplistic. Regulators disagree. By Navroz Patel

Bank credit risk managers are divided over the fairness of the Basel Committee on Banking Supervison's proposal of an internal ratings-based (IRB) approach to calculating regulatory capital.

This approach is part of Basel's reform of its 1988 Accord on bank capital, and it is most developed for the banking book portion of banks' credit portfolios. The Committee is still seeking industry feedback on the other portions such as retail and project finance.

It is the granularity adjustment in the IRB approach that has been the bone of contention. This adjustment penalises banks with large single-name exposures in their loan portfolios. But, say the critics, if banks are going to be charged for single-name concentration, then they should also benefit from lower capital charges that recognise portfolio diversification arising from sector and country allocations.

"The Committee has addressed the issue of single-name concentration – the simplest indicator of non-diversification. But their reluctance to address concentration of covariance is a limitation," says Gene Guill, New York-based managing director in charge of global credit products at Deutsche Bank.

While the correlation or covariance among obligor defaults is measured by the multi-factor internal models of large banks, such as Deutsche Bank, it is not measured explicitly by the regulatory one-factor model in the IRB approach.

"I would have been more comfortable if [Basel] had stated that by a specified date it will define the terms and conditions under which banks will be allowed to use a full internal models-based approach – one that recognises covariance," says Guill.

Others see the granularity debate as a storm in a teacup. "It's undoubtedly of theoretical interest, but in practice the granularity adjustment has a relatively small effect," says Tom Wilde, London-based head of credit risk portfolio modelling at Credit Suisse First Boston.

But the Group of Ten regulators who came up with the Basel proposals for a new Accord – or Basel II as it has become known – are ready to defend them. "Granularity is intrinsic and unavoidable – it's always there. People are just not used to seeing it made explicit in this manner," says David Jones, the Federal Reserve Board's representative on the Bank for International Settlements' Models Task Force, which was responsible for the design and calibration of the IRB approach

Gene Guill, Deutsche Bank

"If a bank is using a credit risk model from CreditMetrics, KMV, or CreditRisk+, it may not spit out a report that says that 'this much of your capital is being attributed to systematic and this much to granularity'. But it could – it's in there!" says Michael Gordy – an economist with the Federal Reserve Board in Washington DC who also participated in some of the task force's research. So some banks' negative reaction to the granularity adjustment has surprised regulators, because regulators claim that the concept of granularity is intrinsic in the internal models they use already.

So, how was the concept of granularity arrived at? In every credit risk model, risk at the portfolio level comes in two flavours: systematic and idiosyncratic. Systematic factors are sources of risk that give rise to correlations across companies – they reflect the business cycle, for example macroeconomic factors. Idiosyncratic risk is firm-specific – so it could cause one firm to default but would have no impact on other firms. With an infinite number of borrowers on a portfolio, the idiosyncratic risk could be diversified away completely.

"The granularity adjustment recognises that in the real world, every bank portfolio has a finite number of obligors and that your exposure to some in particular may be substantial," says Gordy. So, since a bank cannot in practice diversify away all of the idiosyncratic risk, the adjustment imposes an additional regulatory charge.

But what about correlation? "If robust methods of estimating and validating correlation effects existed, then the IRB wouldn't be here," says Jones. Even banks recognise that correlation estimates are not always reliable. Jones refutes the charge that Basel has failed to account for correlation. "The implicit assumption is that we're dealing with a very well-diversified commercial loan portfolio that has sectoral diversification comparable to all sectors in the country, and is not any more concentrated than say all the corporate borrowers in the country in terms of their industry concentrations."

So the message is: regulators cannot recognise every nuance of diversification in banking book portfolios. The granularity adjustment is simply a charge for the effect of single-name concentration, something distinct from the notion of sectoral diversification. "Some may consider [Basel II] as lacking sophistication in terms of its recognition of sectoral diversification – but it's a step in the right direction. If my left knee is hobbled, will I walk better if you hobble my right knee as well? I don't think so," says Gordy.

Some banks may not be satisfied, but what alternatives to the granularity adjustment were open to Basel? Well, using their own philosophy, they would have imposed another regulatory assumption concerning the average degree of single-name concentration of granularity in portfolios. "Regulators are cautious. One might imagine that they would calibrate to the average of a smaller regional institution, so larger banks with finer-grained portfolios could have ended-up with a higher capital charge," says Jones. So maybe the granularity adjustment isn't so bad. Also, the adjustment can be negative – banks with a large well-managed portfolio that has limited single-name concentration may find a reduction in their capital charge.

"If the large banks' aim is to evolve toward a more and more sophisticated system that is closer to their own internal models, then the granularity adjustment should be viewed as a step in the right direction," claims Gordy. ■