

floor has been proposed at 56 basis points partly on the basis of empirical analyses suggesting that, across a broad range of modeling assumptions and exposure types, this level provides a reasonable lower bound on the capital charges implied by standard credit risk models for securitization tranches meeting the standards for an external rating of AAA.⁴¹ This floor also is consistent with the lowest capital charge available under the RBA.

Part (ii) of the SFA also is a blend of credit risk modeling results and supervisory judgment. The function denoted $K[x]$ represents a pure model-based estimate of the pool's aggregate systematic or non-diversifiable credit risk that is attributable to a first-loss position covering pool losses up to and including x . Because the tranche of interest (defined in terms of a credit enhancement level L , and thickness T) covers losses between L and $L+T$, its total systematic risk can be represented as $K[L+T] - K[L]$, which are the first two terms in (1). The term in braces within (1) represents a supervisory add-on to the pure model-based result. This add-on is intended primarily to avoid potential behavioral distortions associated with what would otherwise be a discontinuity in capital charges for relatively thin mezzanine tranches lying just below and just above KIRB: all tranches at or below KIRB would be deducted from capital, whereas a very thin tranche just above KIRB would incur a pure model-based capital charge that could vary between zero and one, depending upon the number of effective underlying exposures in the pool (N). The add-on would apply primarily to positions just above KIRB, and its quantitative effect would diminish rapidly as the distance from KIRB widens.

Most of the complexity of the supervisory formula is a consequence of attempting to make $K[x]$ as consistent as possible with the parameters and assumptions of the A-IRB framework that would apply to the underlying exposures if held directly by a banking organization.⁴² The specification of $K[x]$ assumes that KIRB is an accurate measure of the pool's total systematic credit risk, and that a securitization merely redistributes this systematic risk among its various tranches. In this way, $K[x]$ embodies precisely the same asset correlations as are assumed elsewhere within the A-IRB framework. In

addition, this specification embodies the well-known result that a pool's total systematic risk (that is, KIRB) tends to be redistributed toward more senior tranches as the effective number of underlying exposures in the pool (N) declines.⁴³ The importance of pool granularity depends on the pool's average loss-rate-given-default, as increases in LGD also tend to shift systematic risk toward senior tranches when N is small. For highly granular pools, such as securitizations of retail exposures, LGD would have no influence on the SFA capital charge.

The Agencies propose to establish criteria for determining E , KIRB, L , T , N , and LGD that are consistent with those suggested in the New Accord. A summary of these requirements is presented below.

***E*.** This input would be measured (in dollars) as the A-IRB estimate of the exposures in the underlying pool of securitized exposures, as if they were held directly by the banking organization, rather than securitized. This amount would reflect only those underlying exposures that have actually been securitized to date. Thus, for example, E would exclude undrawn lines associated with revolving credit facilities (for example, credit card accounts).

***KIRB*.** This input would be measured (in decimal form) as the ratio of (a) the pool's A-IRB capital requirement to (b) the notional or loan equivalent amount of the underlying exposures in the pool (E). The pool's A-IRB capital requirement would be calculated in accordance with the applicable A-IRB standard for the type of underlying exposure. This calculation would incorporate the effect of any credit risk mitigant that is applied to the underlying exposures (either individually or to the entire pool), and hence benefits all of the securitization exposures. Consistent with the measurement of E , the estimate of KIRB would reflect only the underlying exposures that have been securitized. For example, KIRB generally would exclude the A-IRB capital charges against the undrawn portions of revolving credit facilities.

***Credit enhancement level (L)*.** This input would be measured (in decimal form) as the ratio of (a) the notional amount of all securitization exposures subordinate to the tranche of interest to (b) the notional or loan equivalent amount of underlying exposures in the pool (E). L would incorporate any funded reserve account (for example,

spread account or overcollateralization) that provides credit enhancement to the tranche of interest. Credit-enhancing interest-only strips would not be included in the calculation of L .

***Thickness (T)*.** This input would be measured (in decimal form) as the ratio of (a) the notional amount of the tranche of interest to (b) the notional or loan equivalent amount of underlying exposures in the pool (E).

***Effective number of exposures (N)*.** This input would be calculated as

$$N = \frac{\left(\sum_i EAD_i \right)^2}{\sum_i EAD_i^2}$$

where EAD_i represents the exposure-at-default associated with the i -th underlying exposure in the pool. Multiple underlying exposures to the same obligor would be consolidated (that is, treated as a single exposure). If the pool contains any underlying exposures that are themselves securitization exposures (for example, one or more asset-backed securities), each of these would be treated as a single exposure for the purpose of measuring N .⁴⁴

***Exposure-weighted average LGD*.** This input would be calculated (in decimal form) as

$$LGD = \frac{\sum_i LGD_i \cdot EAD_i}{\sum_i EAD_i}$$

where LGD_i represents the average LGD associated with all underlying exposures to the i -th obligor. In the case of re-securitization (a securitization of securitization exposures), an LGD of 100 percent would be assumed for any underlying exposure that was itself a securitization exposure.⁴⁵

⁴⁴ Within the supervisory formula, the probability distribution of credit losses associated with the pool of underlying exposures is approximated by treating the pool as if it consisted of N homogeneous exposures, each having an A-IRB capital charge of $KIRB/N$. The proposed treatment of N implies, for example, that a pool containing one ABS tranche backed by 1 million effective loans behaves more like a single loan having an A-IRB capital charge of KIRB than a pool of 1 million loans, each having an A-IRB capital charge of $KIRB/1,000,000$.

⁴⁵ As noted above, the A-IRB securitization framework does not permit banking organizations to use their own internal estimates of LGDs (and PDs) for securitization exposures because such quantification requires implicit or explicit estimates of loss correlations among the underlying exposures. Recall that LGDs should be measured as the loss rates expected to prevail when default rates are high. While setting LGDs equal to 100 percent is reasonable for certain types of ABSs, such as highly subordinated or thin tranches, this level of

⁴¹ See Vladislav Peretyatkin and William Perraudin, "Capital for Asset-Backed Securities," Bank of England, February 2003.

⁴² The conceptual basis for specification of $K[x]$ is developed in Michael B. Gordy and David Jones, "Random Tranches," *Risk* (March 2003) 78–83.

⁴³ See Michael Pykhtin and Ashish Dev, "Coarse-grained CDOs," *Risk* (January 2003) 113–116.