

### Adjusting LGD for the Effects of Collateral

A banking organization would be able to take into account the risk-mitigating effect of collateral in its internal estimates of LGD, provided the organization has established internal requirements for collateral management, operational procedures, legal certainty, and risk management processes that ensure that:

(1) The legal mechanism under which the collateral is pledged or transferred ensures that the banking organization has the right to liquidate or take legal possession of the collateral in a timely manner in the event of the default, insolvency, or bankruptcy (or other defined credit event) of the obligor and, where applicable, the custodian holding the collateral;

(2) The banking organization has taken all steps necessary to fulfill legal requirements to secure the organization's interest in the collateral so that it has and maintains an enforceable security interest;

(3) The banking organization has clear and robust procedures for the timely liquidation of collateral to ensure observation of any legal conditions required for declaring the default of the borrower and prompt liquidation of the collateral in the event of default;

(4) The banking organization has established procedures and practices for (i) conservatively estimating, on a regular ongoing basis, the market value of the collateral, taking into account factors that could affect that value (for example, the liquidity of the market for the collateral and obsolescence or deterioration of the collateral), and (ii) where applicable, periodically verifying the collateral (for example, through physical inspection of collateral such as inventory and equipment); and

(5) The banking organization has in place systems for requesting and receiving promptly additional collateral for transactions whose terms require maintenance of collateral values at specified thresholds.

In reflecting collateral in the LGD estimate, the banking organization would need to consider the extent of any dependence between the risk of the borrower and that of the collateral or collateral provider. The banking organization's assessment of LGD would have to address in a conservative way any significant degrees of dependence, as well as any currency mismatch between the underlying obligation and the collateral. The LGD estimates would have to be grounded in historical recovery rates on the collateral and

could not be based solely upon the collateral's estimated market value.

### Repo-Style Transactions Subject to Master Netting Agreements

Repo-style transactions include reverse repurchase agreements and repurchase agreements and securities lending and borrowing transactions, including those executed on an indemnified agency basis.<sup>26</sup> Many of these transactions are conducted under a bilateral master netting agreement or equivalent arrangement. The effects of netting arrangements generally would be recognized where the banking organization takes into account the risk-mitigating effect of collateral through an adjustment to EAD. To qualify for the EAD adjustment treatment, the repo-style transaction would have to be marked-to-market daily and be subject to a daily margin maintenance requirement. Further, the repo-style transaction would have to be documented under a qualifying master netting agreement that would have to:

(1) Provide the non-defaulting party the right to terminate and close out promptly all transactions under the agreement upon an event of default, including in the event of insolvency or bankruptcy of the counterparty;

(2) Provide for the netting of gains and losses on transactions (including the value of any collateral) terminated and closed out under the agreement so that a single net amount is owed by one party to the other;

(3) Allow for the prompt liquidation or setoff of collateral upon the occurrence of an event of default; and

(4) Be, together with the rights arising from the provisions required in (1) to (3) above, legally enforceable in each relevant jurisdiction upon the occurrence of an event of default and regardless of the counterparty's insolvency or bankruptcy.

Where a banking organization's repo-style transactions do not meet these requirements, it would not be able to use the EAD adjustment method. Rather, for each individual repo-style transaction it would estimate an LGD that takes into account the collateral received. It would use the notional amount of the transaction for EAD; it would not take into account netting effects for purposes of determining either EAD or LGD.

<sup>26</sup> Some banking organizations, particularly those that are custodians, lend, as agent, their customers' securities on a collateralized basis. Typically, the agent banking organization indemnifies the customer against risk of loss in the event the borrowing counterparty defaults. Where such indemnities are provided, the agent banking organization has the same risks it would have if it had entered into the transaction as principal.

The method for determining EAD for repo-style transactions, described below, is essentially the determination of an unsecured loan equivalent exposure amount to the counterparty. Thus, no collateral effects for these transactions would be recognized through LGD; rather, the applicable LGD would be the one the banking organization would estimate for an unsecured exposure to the counterparty.

To determine EAD, the banking organization would add together its current exposure to the counterparty under the master netting arrangement and a measure for PFE to the counterparty under the master netting arrangement. The current exposure would be the sum of the market values of all securities and cash lent, sold subject to repurchase, or pledged as collateral to the counterparty under the master netting agreement, less the sum of the market values of all securities and cash lent, sold subject to repurchase, or pledged as collateral by the counterparty. The PFE calculation would be based on the market price volatilities of the securities delivered to, and the securities received from, the counterparty, as well as any foreign exchange rate volatilities associated with any cash or securities delivered or received.

Banking organizations would use a VaR-type measure for determining PFE for repo-style transactions subject to master netting agreements. Banking organizations would be required to use a 99th percentile, one-tailed confidence interval for a five-day holding period using a minimum one-year historical observation period of price data. Banking organizations would have to update their data sets no less frequently than once every three months and reassess them whenever market prices are subject to material changes. The illiquidity of lower-quality instruments would have to be taken into account through an upward adjustment in the holding period where the five-day holding period would be inappropriate given the instrument's liquidity. No particular model would be prescribed for the VaR-based measure, but the model would have to capture all material risks for included transactions.

Banking organizations using a VaR-based approach to measuring PFE would be permitted to take into account correlations in the price volatilities among instruments delivered to the counterparty, among instruments received from the counterparty, as well as between the two sets of instruments. The VaR-based approach for calculating PFE for repo-style transactions would be available to all banking organizations