

### Process Analysis for Example 3

**Data**—The reference data is the collection of historical defaults with the loss amounts from the bank's historical portfolio. The reference data are described by the two categorical variables (levels of collateral coverage and types of collateral). It would be important to determine whether the defaults over the past few years are comparable to defaults from the current portfolio. One would also want to ask why the bank ignores potentially valuable information by converting the continuous data on collateral coverage into a trimodal categorical variable.

**Estimation**—Conceptually, the bank is using a "loss severity model" in which 12 binary variables, one for each loan coverage/type combination, explain the percentage loss. The coefficients on the variables are just the mean loss figures from the reference data.

**Mapping**—Mapping in this case is fairly straightforward, since all of the relevant characteristics of the reference data are also in the loan system for the current portfolio. However, the bank should determine whether the variables are being recorded in the same way (for example, the same definitions of collateral types), otherwise some adjustment might be needed.

**Application**—The bank is able to apply the loss model by simply plugging in the relevant values for the current portfolio (or what amounts to the same thing, looking up the cell mean). The bank's assignment of zero LGD for one of the cells merits special attention; while the bank represented this assignment as conservative, the adjustment does not satisfy the supervisory requirement that LGD must exceed zero. A larger upward adjustment is necessary. Finally, the upward adjustment of the LGD numbers to account

for the benign environment in which the reference data were generated presents one additional wrinkle. The bank must provide a well-documented, empirically based analysis of why a 10 percent upward adjustment is sufficient.

## IV. Data Maintenance

### A. Overview

Institutions using the IRB approach for regulatory capital purposes will need advanced data management practices to produce credible and reliable risk estimates. The guiding principle governing an IRB data maintenance system is that it must support the requirements for the quantification, validation, control and oversight mechanisms described in this guidance, as well as the institution's broader risk management and reporting needs. The precise data elements to be collected will be dictated by the features and methodology of the IRB system employed by the institution. The necessary data elements will therefore vary by institution and even among business lines within an institution.

Institutions will have latitude in managing their data, subject to the following key data maintenance standards:

**Life Cycle Tracking**—institutions must collect, maintain, and analyze essential data for obligors and facilities throughout the life and disposition of the credit exposure.

**Rating Assignment Data**—institutions must capture all significant quantitative and qualitative factors used to assign the obligor and loss severity ratings.

**Support of IRB System**—data collected by institutions must be of sufficient depth, scope, and reliability to:

- Validate IRB system processes,
- Validate parameters,
- Refine the IRB system,
- Develop internal parameter estimates,
- Apply improvements historically,
- Calculate capital ratios,
- Produce internal and public reports, and
- Support risk management.

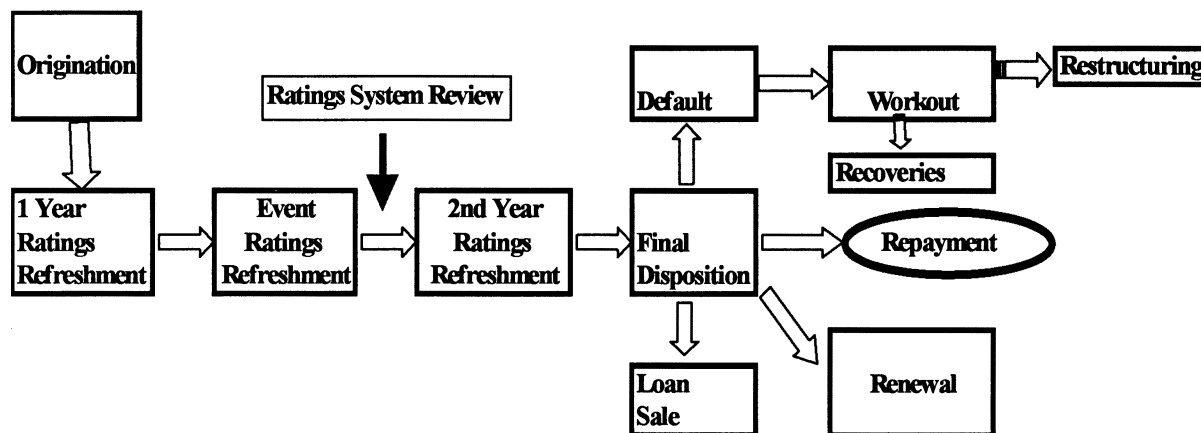
This chapter covers the requirements for maintaining internal data. Reference data sets used for estimating IRB parameters are discussed in Chapter 2.

### B. Data Maintenance Framework

#### Life Cycle Tracking

S. Institutions must collect, maintain, and analyze essential data for obligors and facilities throughout the life and disposition of the credit exposure.

Using a life cycle or "cradle to grave" concept for each obligor and facility supports front-end validation, back-testing, system refinements and risk parameter estimates. A depiction of life-cycle tracking follows:



Data elements must be recorded at origination and whenever the rating is reviewed, regardless of whether the rating is actually changed. Data elements associated with current and past ratings must be retained and include the following:

- Key borrower and facility characteristics,
- Ratings for obligor and loss severity grades,

- Key factors used to assign the ratings,
- Person or model responsible for assigning the rating,
- Date rating assigned, and
- Overrides to the rating and authorizing individual.

At disposition, data elements must include:

- Nature of disposition: renewal, repayment, loan sale, default, restructuring,
- For defaults: exposure, actual recoveries, source of recoveries, costs of workouts and timing,
- Guarantor support,
- Sale price for loans sold, and
- Other key elements that the bank deems necessary.