

The key feature of expert-judgment systems is flexibility. The prevalence of judgmental rating systems reflects the view that the determinants of default are too complicated to be captured by a single quantitative model. The quality of management is often cited as an example of a risk determinant that is difficult to assess through a quantitative model. In order to foster internal consistency, banks employing expert judgment rating systems typically provide narrative guidelines that set out ratings criteria. However, the expert must decide how narrative guidelines apply to a given set of circumstances.

The flexibility possible in the assignment of judgmental ratings has implications for the types of ratings review that are feasible. As part of the ratings validation process, banks will attempt to confirm that raters follow bank policy. However, two individuals exercising judgment can use the same information to support different ratings. Thus, the review of an expert judgment rating system will require an expert who can identify the impact of policy and the impact of judgment on a rating.

Models

In recent years, models have been developed for use in rating commercial credits. In a model-based approach, inputs are numeric and provide quantitative and qualitative information about an obligor. The inputs are combined using mathematical equations to produce a number that is translated into a categorical rating. An important feature of models is that the rating is perfectly replicable by another party, given the same inputs.

The models used in credit rating can be distinguished by the techniques used to develop them. Some models may rely on statistical techniques while others rely on expert-judgment techniques.

Statistical models. Statistically developed models are the result of statistical optimization, in which well-defined mathematical criteria are used to choose the model that has the closest fit to the observed data. Numerous techniques can be used to build statistical models; regression is one widely recognized example. Regardless of the specific statistical technique, a knowledgeable independent reviewer will have to exercise judgment in evaluating the reasonableness of a model's development, including its underlying logic, the techniques used to handle the data, and the statistical model building techniques.

*Expert-derived models.*² Several banks have built rating models by asking their experts to decide what weights to assign to critical variables in the models. Drawing on their experience, the experts first identify the observable variables that affect the likelihood of default. They then reach agreement on the weights to be assigned to each of the variables. Unlike statistical optimization, the experts are not necessarily using clear, consistent criteria to select the weights attached to the variables. Indeed, expert-judgment model building is often a practical choice when there is not enough data to support a statistical model building. Despite its dependence on expert judgment, this method can be called model-based as long as the result—the equation, most likely with linear weights—is used as the basis to rate the credits. Once the equation is set, the model shares the feature of replicability with statistically derived models. Generally, independent credit experts use judgment to evaluate the reasonableness of the development of these models.

Constrained Judgment

The alternatives just described present the extremes, but in practice, many banks use rating systems that combine models with judgment. Two approaches are common.

Judgmental systems with quantitative guidelines or model results as inputs. Historically, the most common approach to rating has involved individuals exercising judgment about risks, subject to policy guidelines containing quantitative criteria such as minimum values for particular financial ratios. Banks develop quantitative criteria to guide individuals in assigning ratings, but often believe that those criteria do not adequately reflect the information needed to assign a rating.

One version of this constrained judgment approach features a model output as one among several criteria that an individual may consider in assigning ratings. The individual assigning the rating is responsible for prioritizing the criteria, reconciling conflicts between criteria, and if warranted, overriding some criteria. Even if individuals incorporate model results as one of the factors in their ratings, they will exercise judgment in deciding what

weight to attach to the model result. The appeal of this approach is that the model combines many pieces of information into a single output, which simplifies analysis, while the rater retains flexibility regarding the use of the model output.

Model-based ratings with judgmental overrides. When banks use rating models, individuals are generally permitted to override the results under certain conditions and within tolerance levels for frequency. Credit-rating systems in which individuals can override models raise many of the same issues presented separately by pure judgment and model-based systems. If overrides are rare, the system can be evaluated largely as if it is a model-based system. If, however, overrides are prevalent, the system will be evaluated more like a judgmental system.

Since constrained judgment systems combine features of both expert judgment and model-based systems, their evaluation will require the skills required to evaluate both of these other systems.

C. IRB Ratings System Architecture

Two-Dimensional Rating System

S. IRB risk rating systems must have two rating dimensions—obligor and loss severity ratings.

S. IRB obligor and loss severity ratings must be calibrated to values of the probability of default (PD) and the loss given default (LGD), respectively.

Regardless of the type of rating system(s) used by an institution, the IRB approach imposes some specific requirements. The first requirement is that an IRB rating system must be two-dimensional. Banks will assign obligor ratings, which will be associated with a PD. They will also either assign a loss severity rating, which will be associated with LGD values, or directly assign LGD values to each facility. The process of assigning the obligor and loss severity ratings—hereafter referred to as the rating system—is discussed below, and the process of calibrating obligor and loss severity ratings to PD and LGD parameters is discussed in Chapter 2.

S. Banks must record obligor defaults in accordance with the IRB definition of default.

Definition of Default

The consistent identification of defaults is fundamental to any IRB rating system. For IRB purposes, a default is considered to have occurred with regard to a particular obligor when either or both of the two following events have taken place:

- The obligor is past due more than 90 days on any material credit

² Some banks have developed credit rating models that they refer to as "scorecards," but they have used expert judgment to derive the weights. While they are models, they are not scoring models in the now conventional use of the term. In its conventional use, the term scoring model is reserved for a rating model derived using statistical techniques.