Developing, Validating and Using Internal Ratings
Methodologies and Case Studies

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Preface

Banks are currently developing internal rating systems for both management and regulatory purposes. Model building, validation and use policies are key areas of research and/or implementation in banks, consultancy firms, and universities. They are extensively analyzed in this book, leveraging on international best practices as well as guidelines set by supervisory authorities. Two case studies are specifically devoted to building and validating statistical based models for borrower ratings.

This book starts by summarizing key concepts, measures and tools of credit risk management. Subsequently, it focuses on possible approaches to rating assignment, analyzing and comparing experts’ judgment based approaches, statistical based models, heuristic and numerical tools. The first extensive case study follows. The model building process is described in detail, clarifying the main issues, how to use statistical tools and interpret results; univariate, bivariate, and multivariate stages of model building are discussed, highlighting the need to merge the knowledge of people with quantitative analysis skills with that of bank practitioners. Then validation processes are presented from various perspectives: internal and external (by supervisors), qualitative and quantitative, methodological and organizational. A second case study follows: a document for the internal validation unit, summarizing the process of building a shadow rating for assessing financial institutions creditworthiness, is proposed and analytically examined. Finally, conclusions are drawn: use policies are discussed in order to leverage on potentialities and managing limits of statistical based ratings.

The book is the result of academic research and the professional experience of its authors, mainly developed at the SDA Bocconi School of Management and Intesa Sanpaolo bank, as well as in consulting activities for many other financial institutions, including leasing and factoring companies. It focuses on quantitative tools, not forgetting that these tools cannot completely and uncritically substitute human judgment. Above all, in times of strong economic and financial discontinuities such as the period following the 2008 crisis, models and experience must be integrated and balanced out. This is why one of the fundamental tasks of this book is to merge different cultures, all of which are more and more necessary for modern banking:

- Statisticians must have good knowledge of the economic meaning of the data that they are working with and must realize the importance of human oversight in daily credit decisions.
Credit and loan officers must have a fair understanding of the contents of quantitative tools, and properly understand how they can profit from their potentialities and what real limitations exist.

Students attending credit risk management graduate and postgraduate courses must combine competences of finance, statistics and applicative tools, such as SAS and SPSS-PASW.

Bank managers must set the optimal structure for lending processes and risk control processes, cleverly balancing competitive, management and regulatory needs.

As a consequence, the book tries to be useful to all and each of these groups of people and is structured as follows:

Chapter 1 introduces developments of credit risk management and recent insights gained from the financial crisis.

In Chapter 2, key concepts of credit risk management are summarized.

In Chapter 3, there is a description and a cross-examination of the main alternatives to rating assignment.

In Chapter 4, a case study based on real data is used to examine, step by step, the process of building and evaluating a statistical based borrower rating system for small and medium size enterprises aimed at being compliant with Basel II regulation. The data set is available on the book’s website, www.wiley.com/go/validating. In the book, examples and syntax are based on the SPSS-PASW statistical package, which is powerful and friendly enough to be used both at universities and in business applications, whereas output and syntax files based on both SPSS-PASW and SAS are available on the book’s website. In Chapter 5, internal and regulatory validations of rating systems are discussed, considering both the qualitative and quantitative issues.

In Chapter 6, another case study is proposed, concerning the validation of a statistical based rating system for classifying financial institutions, in order to summarize some of the key tools of quantitative validation.

In Chapter 7, important issues related to organization and management profiles in the use of internal rating systems in banks’ lending operations are discussed and conclusions are drawn.

Bibliography and a subject index complete the book.

In the book we refer to banks, but the term is used to indicate all financial institutions with lending activities.

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