The Basel II Risk Parameters: Estimation, Validation, and Stress Testing

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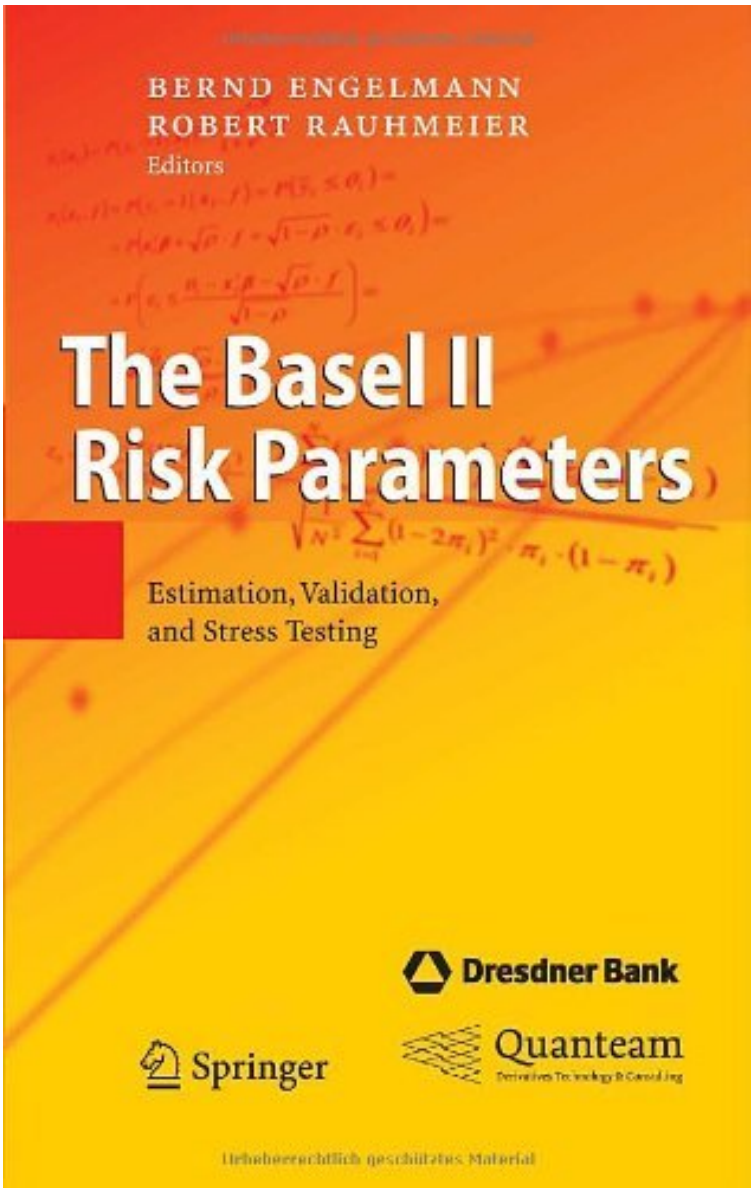

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From Springer : The Basel II Risk Parameters: Estimation, Validation, and Stress Testing before purchasing it in order to gage whether or not it would be worth my time, and all praised The Basel II Risk Parameters: Estimation, Validation, and Stress Testing:

19 of 20 people found the following review helpful. A good introductionBy Dr. Lee D. CarlsonFor anyone who needs

to learn the financial philosophy and mathematical formalism behind the Basel II accords, this book will be an excellent introduction. Consisting of a collection of articles written competently and concisely, the book should be on the shelf of those who are not only responsible for implementing the Basel II accords but also work in the trenches on how to validate it with respect to the banking institutions in which they are employed. The technical details behind the Basel II accords are straightforward to understand mathematically, but the accords can be delicate to implement from a data collection standpoint. However the latter is not addressed in this book, with emphasis primarily given to the formalism and how to validate it in real situations. Due to its mathematical rigor the chapter on PD validation by R. Rauhmeier is one of the more valuable ones in the book. It deals with mathematical methods for assessing the quality of estimates for PD, but gives examples from practical banking experience. Most interesting is that the author discusses how to compare rating systems developed by human experts with those that result from machines (algorithmic ratings with no human input). Along these lines, the author views a rating system as essentially a collection of modules, the first one of which is called a `machine rating' since it estimates the PD by an algorithm based on statistical models and not therefore dependent on human judgment (excluding the judgment of the developer of the algorithm of course). The machine rating is then subjected to expert opinion in the second module, wherein it is expected that the rating will be adjusted according to the judgments (and biases) of the (human) expert. The third module is also very standardized, and deals with the degree to which the borrower is supported by others when in financial distress. Any support structure that exists will of course influence the PD of the borrower. Manual overrides that arise because of exceptional situations are part of the fourth and final module. The author views the rating model as `default generating process' which is function of certain selected risk drivers, and is typically measured in terms of rating scales. He gives an example of a `master scale' in this chapter, with this one deploying a "point-in-time" rating approach.Most of the chapter is devoted to finding PD validation methods that can test all the rating grades simultaneously. One of these is the Spiegelhalter test, which uses as a test statistic the ratio of the difference between the observed mean square error and the expected mean square and the square root of the variance of the mean square error. If the null hypothesis, namely that the forecasted and observed default probabilities are equal for every obligor, then this ratio is normally distributed and then standard techniques can be used. The Spiegelhalter test helps to remove the bias that exists in merely averaging the PDs of obligors in the same rating grade, but it does assume that the default events are independent. The assumption that the default events are independent can be dropped by using Monte Carlo simulations, and the author gives the reader a taste of how to do this in this chapter. As is typical in Monte Carlo simulations, random paths are generated in order to approximate the distribution of the test statistic. The author discusses an explicit simulation study using various choices of the asset correlation parameter, and it is clear that its value has a dramatic effect on the distribution of the test statistic. It would have been helpful if the author had expounded on how to calculate the value of the asset correlation parameter and discussed its connection with various credit risk models, such as the Merton model. The last chapter of the book discusses stress testing, which the authors define as the study of risk characteristics to fictional perturbations or shocks. Stress testing is practiced widely in the financial industry, especially when sudden and dramatic losses occur in credit portfolios. These losses can surprise risk managers and create extreme skepticism towards the mathematical models used for forecasting. It follows of course that the Basel II accords would be interested in stress testing, but the authors of this chapter assert that they do not yet have the level of sophistication that one can find in the financial industry nor are they precise. The methods that the Basel II accords recommend are reviewed in this chapter. In this regard the authors point out that it is the probability of default (PD) that is the parameter of interest for stress testing, since the EAD and the LGD are relatively insensitive to radical events by their very definition. The PD is varied either by modifying rating grades or by modifying the PDs of the rating grades used for the stress test. The authors give an example of a stress test involving a very well-diversified "virtual" portfolio which shows the effects on regulatory and economic capital of various shocks, such as dramatic rises (and drops) in the oil price, recessions, and appreciative drops in the stock market index. Real portfolios they argue will exhibit even more dramatic effects, since they are not as diversified as this example. It would have been more helpful if the authors had included a more rigorous analysis, possibly one that uses Monte Carlo simulations or extreme value theory, but as applied to a practical situation that risk managers might encounter. One example might be the extreme losses that occurred in mortgage portfolios beginning in the third quarter of 2006. These losses took the risk community completely by surprise, and the forecasting models in place at the time, even though they underwent considerable stress testing before these losses began accelerating, were unable to predict them. The lesson to be learned from this example is that one must perform stress testing not with scenarios that may not have occurred in the past. The imagining of hypothetical scenarios that may shock a portfolio but that have never been realized in the past will be an important part of the future game of stress testing.5 of 6 people found the following review helpful. Practical and a worthy investmentBy Ng Hon MingTo pioneer the credit risk modeling development for the corporate loan portfolio of banks, I found this book practical and relevant to what is happening in banks in reality.If you need a book to let you do your job as a credit risk manager in the loan portfolio. Buy this and you will never regret.0 of 1 people found the following review helpful. Four StarsBy Walter GalloIt arrived in perfect conditions!

A critical problem in the practice of banking risk assessment is the estimation and validation of the Basel II risk parameters PD (default probability), LGD (loss given default), and EAD (exposure at default). This book presents the state-of-the-art in designing and validating rating systems and default probability estimations, and outlines techniques to estimate LGD and EAD. Also included is a chapter on stress testing of the Basel II risk parameters.

From the reviews: "This book compiles articles by various authors addressing estimation of three key risk parameters: probability of default (PD), loss given default (LGD), and exposure at default (EAD). The authors identify their intended audience as risk managers and quantitative risk or ratings analysts working on credit risk and regulatory issues. These groups likely will find this book an accessible reference . The exposition related to regulatory issues is quite good and worthwhile for all." (Keith Heyen, Journal of the American Statistical Association, Vol. 103 (483), September, 2008)From the Back CoverThe estimation and the validation of the Basel II risk parameters PD (default probability), LGD (loss given fault), and EAD (exposure at default) is an important problem in banking practice. These parameters are used on the one hand as inputs to credit portfolio models and in loan pricing frameworks, on the other to compute regulatory capital according to the new Basel rules. This book covers the state-of-the-art in designing and validating rating systems and default probability estimations. Furthermore, it presents techniques to estimate LGD and EAD and includes a chapter on stress testing of the Basel II risk parameters. The second edition is extended by three chapters explaining how the Basel II risk parameters can be used for building a framework for risk-adjusted pricing and risk management of loans.