Validation of Risk Management Models for Financial Institutions

Financial models are an inescapable feature of modern financial markets. Yet, it was over-reliance on these models and the failure to test them properly that is now widely recognized as one of the main causes of the financial crisis of 2007–2011. Since this crisis, there has been an increase in the amount of scrutiny and testing applied to such models, and validation has become an essential part of model risk management at financial institutions. The book covers all the major risk areas that a financial institution is exposed to and uses models for, including market risk, interest rate risk, retail credit risk, wholesale credit risk, compliance risk and investment management. The book discusses current practices and pitfalls that model risk users need to be aware of and it identifies areas where validation can be advanced in the future. This provides the first unified framework for validating risk management models.

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Validation of Risk Management Models for Financial Institutions

Theory and Practice

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Modern financial institutions rely heavily on quantitative data, analysis and reporting to inform decisions on risk management, on pricing transactions, on extending credit and on establishing capital needs, among other applications. Collectively, the systems and components that link data, analysis and reporting can be referred to as quantitative “models.” In practice, models undergo a life cycle of design, prototype, testing, implementation, monitoring and enhancement, perhaps with eventual replacement. A key part of this cycle is model validation, that is, review of the model, initially and over time, both by the model builders and by parties independent of model design, implementation and use. The purpose of model validation is to identify and communicate strengths and weaknesses of a given quantitative approach, and to determine whether the model is appropriate for its intended and actual use.

This book provides detailed information about model validation in the context of financial institutions. A variety of approaches are explained, compared and evaluated. As it does for models themselves, the choice of validation approach depends on the situation; there may not be a “best” practice, but there are strong practices to choose from, and experiences to guide those choices. The authors of the chapters in this book have extensive experience in the workings of financial institutions, and share here some of their unique perspectives on the many aspects of validation. This set of chapters captures a snapshot of the state of the art in a field that continues to develop.

Lest the reader have the misconception that a formal approach to model validation is a product only of efforts in the recent past, the editors demonstrate that formal thinking on the topic dates back over fifty years. Indeed, I was astonished and touched to learn from this manuscript that one of the early influential papers was published by my late father. I thank the editors for this delightful surprise, and for the opportunity to introduce this excellent volume. I am sure readers...
will take from this book a wealth of in-depth knowledge, and hope that they also derive some fraction of the inspiration that it gave me to make my own contributions to the field.

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