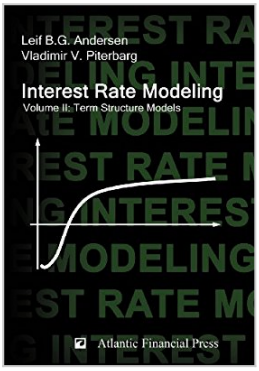

Interest Rate Modeling. Volume 2: Term Structure Models

By Leif B. G. Andersen, Vladimir V. Piterbarg

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Editorial Review

Review
In the seventies, Arbitrage Pricing Theory (APT) was invented for equity derivatives. Now the arena of interest rate derivatives has its own APT: the Andersen-Piterbarg Textbook. --Peter Carr, Global Head of Market Modeling, Morgan Stanley

This is a most comprehensive book on interest rate modeling and derivatives valuation. I recommend it highly to all students and researchers. --Farshid Jamshidian, Professor of Applied Mathematics, Twente University

Andersen and Piterbarg are to be congratulated on moving our understanding of valuation of interest rate derivatives to a new level. --John Hull, Professor of Derivatives and Risk Management, University of Toronto

From the Author
From Preface

For quantitative researchers working in an investment bank, the process of writing a fixed income model usually has two stages. First, a theoretical framework for yield curve dynamics is specified, using the language of mathematics (especially stochastic calculus) to ensure that the underlying model is well-specified and internally consistent. Second, in order to use the model in practice, the equations arising from the first step need to be turned into a working implementation on a computer. While specification of the theoretical model may be seen as the difficult part, in quantitative finance applications the second step is technically and intellectually often more challenging than the first. In the implementation phase, not only does one need to translate abstract ideas into computer code, one also needs to ensure that the resulting numbers being produced are meaningful to a trading desk, are stable and robust, are in line with market observations, and are produced in a timely manner. Many of these requirements are, as it turns out, extremely challenging, and not only demand a strong knowledge of actual market practices (which tend to deviate in significant ways from ``textbook" theory), but also require application of a large arsenal of techniques from applied mathematics, chiefly approximation methods and numerical techniques. While there are many good introductory books on fixed income derivatives on the market, when we hire people who have read them we find that they still require significant training before they become productive members of our quantitative research teams. For one, while existing literature covers some aspects of the first step above, advanced approaches to specifying yield curve dynamics are typically not covered in sufficient detail. More importantly, there is simply too little said in the literature about the process of getting the theory to work in the real world of trading and risk management. An important goal of our book series is to close these gaps in the literature.

The three volumes of **Interest Rate Modeling** are aimed primarily at practitioners working in the area of interest rate derivatives, but much of the material is quite general and, we believe, will also hold significant appeal to researchers working in other asset classes. Students and academics interested in financial engineering and applied work will find the material particularly useful for its description of real-life model usage and for its expansive discussion of model calibration, approximation theory, and numerical methods. In preparing the books we have drawn on nearly 30 years of combined industry experience, and much of the material has never been exposed in book form before.

We owe a great debt of gratitude to our families for their support and patience, even when our initial plans for a brief book on tips and tricks for working quants ballooned into something more ambitious that consumed many evenings and weekends over the last six years.

From the Inside Flap
"In the seventies, Arbitrage Pricing Theory (APT) was invented for equity derivatives. Now, more than 30 years later, the arena of interest rate derivatives has its own APT: the Andersen-Piterbarg Textbook. In the complex and highly liquid interest rate derivatives market, the requirements for model accuracy and realism are inordinately demanding, so it is fortunate for practitioners and academics alike that two of the industry's leading practitioners have decided to share their model building experiences. Their unusual collaboration is the culmination of decades of toil, tears, sweat, and work in the trenches. I highly recommend this book for anybody interested in how interest rate models really work."

Peter Carr, Global Head of Market Modeling, Morgan Stanley and Executive Director of Masters in Math Finance Program, Courant Institute, NYU

"This is a most comprehensive book on interest rate modeling and derivatives valuation. It treats in great detail topics of interest to both academicians and practitioners, from theoretical foundations and option pricing fundamentals, to specific models and instruments and their numerical implementation. I recommend it highly to all students and researchers."

Farshid Jamshidian, Part-time Professor of Applied Mathematics, Twente University

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Corrine Switzer:

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