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Alan Brace

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Alan Brace : Engineering BGM (Chapman and Hall/CRC Financial Mathematics Series) before purchasing it in order to gage whether or not it would be worth my time, and all praised Engineering BGM (Chapman and Hall/CRC Financial Mathematics Series):

4 of 6 people found the following review helpful. A very terse and theoretical TreatmentBy Paul ThurstonUpon

finding the term "engineering" in the title of a book, our reader might fairly expect a clearly written, practical, and non-theoretical exposition from the author. This is not the case with this text (much to the disappointment of this reviewer). The author has prepared an extremely terse research style monograph. The book, which runs just over 200 pages, is divided into 17 chapters and a multi-section appendix. None of the chapters provides an excess of detail. One of the interesting features of the author's brief exposition is the "slickness" of the derivations of some of the central formulas. For example, in Chapter 1, the author provides a half-page derivation of the celebrated HJM drift condition. The proof is correct, but is given without reference to the main tools used, such as the stochastic Leibniz rule for differentiating under the Ito integral, and the stochastic Fubini theorem. Our reader is left to infer the use of these techniques and chase down the references on her own. Another curious feature, also found in Chapter 1, is the non-standard definition of the T-forward measure, a crucial element of the now classical BGM model. The author never proves that his new definition is equivalent to the usual change-of-numeraire approach found in, say, Brigo Mercurio's *Interest Rate Models - Theory and Practice*. This requires an independent derivation on the part of the reader in order to keep the remainder of the exposition from being "muddy". The material on calibration techniques in Chapter 7 is a bit more engineering-minded with several pseudo-algorithms presented in step-by-step fashion. However, no cautions warnings are given with regards to numerical implementation of these steps. A discussion of the rate of convergence and/or failure of convergence is strangely omitted. The material on simulation in Chapter 9 starts out describe Glasserman-type simulation. The reader will probably be better served skipping the author's 5 page treatment and instead studying Glasserman's *Monte Carlo Methods in Financial Engineering*. Overall, the author's 17 chapters provide a broad outline of the material that a modern interest modeler should master to develop state-of-the art valuation models for exotic interest rate derivatives and mortgage-backed securities. Unfortunately, the author's exposition is neither sufficiently detailed, nor practical enough to allow for the engineering of such models solely from reading this text. 1 of 8 people found the following review helpful. One of the best BGM books on the market. By Stanislav D. Maydan. This is probably one of the best BGM books in the market. HJM and BGM models are studied in parallel. Shifted Lognormal distribution to model vol skew is very well explained.

Also known as the Libor market model, the Brace-Gatarek-Musiela (BGM) model is becoming an industry standard for pricing interest rate derivatives. Written by one of its developers, *Engineering BGM* builds progressively from simple to more sophisticated versions of the BGM model, offering a range of methods that can be programmed into production code to suit readers' requirements. After introducing the standard lognormal flat BGM model, the book focuses on the shifted/displaced diffusion version. Using this version, the author develops basic ideas about construction, change of measure, correlation, calibration, simulation, timeslicing, pricing, delta hedging, barriers, callable exotics (Bermudans), and vega hedging. Subsequent chapters address cross-economy BGM, the adaptation of the BGM model to inflation, a simple tractable stochastic volatility version of BGM, and Brazilian options suitable for BGM analysis. An appendix provides notation and an extensive array of formulae. The straightforward presentation of various BGM models in this handy book will help promote a robust, safe, and stable environment for calibrating, simulating, pricing, and hedging interest rate instruments.

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