

**Baaquie, Belal E.**

**Interest rates and coupon bonds in quantum finance.** (English) Zbl 1179.91002

Cambridge: Cambridge University Press (ISBN 978-0-521-88928-5/hbk). xviii, 490 p. (2009).

Publisher's description: Focusing on interest rates and coupon bonds, this book does not employ stochastic calculus – the bedrock of the present day mathematical finance – for any of the derivations. Instead, it analyzes interest rates and coupon bonds using quantum finance. The Heath-Jarrow-Morton and the Libor Market Model are generalized by realizing the forward and Libor interest rates as an imperfectly correlated quantum field. Theoretical models have been calibrated and tested using bond and interest rates market data. Building on the principles formulated in the author's previous book [Quantum finance. Path integrals and Hamiltonians for options and interest rates. Cambridge, Cambridge University Press. (2004; [Zbl 1096.91021](#))] this ground-breaking book brings together a diverse collection of theoretical and mathematical interest rate models. It will interest physicists and mathematicians researching in finance, and professionals working in the finance industry.

**MSC:**

- [91-02](#) Research exposition (monographs, survey articles) pertaining to game theory, economics, and finance
- [91G30](#) Interest rates, asset pricing, etc. (stochastic models)
- [91G99](#) Actuarial science and mathematical finance
- [91B80](#) Applications of statistical and quantum mechanics to economics (economics)
- [81P99](#) Foundations, quantum information and its processing, quantum axioms, and philosophy

Cited in **8** Documents

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