J.R.M. Röman

**Analytical Finance: Volume II**

The Mathematics of Interest Rate Derivatives, Markets, Risk and Valuation

- Provides a comprehensive introduction to financial instruments in the interest rate markets
- Includes coverage of standard and exotic instruments
- Explains how pricing has changed since the financial crisis

*Analytical Finance* is a comprehensive introduction to the financial engineering of equity and interest rate instruments for financial markets. Developed from notes from the author’s many years in quantitative risk management and modeling roles, and then for the Financial Engineering course at Malardalen University, it provides exhaustive coverage of vanilla and exotic mathematical finance applications for trading and risk management, combining rigorous theory with real market application.

**Volume I – Equity Derivatives Markets, Valuation and Risk Management.**

Coverage includes:

- The fundamentals of stochastic processes used in finance including the change of measure with Girsanov transformation and the fundamentals of probability theory.
- Discrete time models, such as various binomial models and numerical solutions to Partial Differential Equations (PDEs)
- Monte-Carlo simulations and Value-at-Risk (VaR)
- Continuous time models, such as Black–Scholes-Merton and similar with extensions

**Volume II – Interest Rate Derivative Markets, Valuation and Risk Management**

Coverage includes:

- Interest Rates including negative interest rates
- Valuation and model most kinds of IR instruments and their definitions.

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