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Nota di contenuto	The Mathematics of Financial Models; Contents; Preface; Acknowledgments; 1 Setting the Stage; Why Is This Book Different?; Road Map of the Book; References; 2 Building Zero Curves; Market Instruments; Treasury Bills; Treasury Notes; Treasury Bonds; Eurodollar Futures; Swaps; Linear Interpolation; Step 1: Convert Eurodollar Futures Prices to Forward Rates; Step 2: Calibrate Zero Rates for First Year; Step 3: Calibrate to Obtain Zero Rates for First Two Years; Step 4: Calibrate to Obtain Zero Rates for First Five Years; Cubic Splining; Splining over One Time Interval Splining over Two Time IntervalsSplining over Four Time Intervals; Splining over All Time Intervals; Appendix: Finding Swap Rates Using A Floating Coupon Bond Approach; References; 3 Valuing Vanilla Options; Black-Scholes Formulae; Adaptations of the Black-Scholes Formulae; Pricing Options on Dividend-Paying Stocks; Pricing Options on Futures Contracts; Pricing Options on Forward Contracts; Limitations of the Black-Scholes Formulae; Application in Currency Risk Management; Risk-Management Strategies-Pros and Cons; Incorporating Views into

Strategies; Appendix; Finding a Forward Bond Yield

References4 Simulations; Uniform Number Generation; Random Sampling; Stratified Sampling; Latin Hypercube Sampling; Non-Uniform Number Generation; Inverse Transform Method; Related Distribution Method; Applications of Simulations; Valuing European-Style Options; Simulating a Queue; Estimating Pi; Variance Reduction Techniques; Antithetic Variable Technique; Control Variable Technique; References; 5 Valuing Exotic Options; Valuing Path-Independent, European-Style Options on a Single Variable; Binary Options; Pay-Later Options; Nonlinear Payoff Options

Valuing Path-Dependent, European-Style Options on a Single VariableAveraging Options; Installment Options; Valuing path-Independent, European-Style Options on Two Variables; Exchange Options; Spread Options; Valuing Path-Dependent, European-Style Options on Multiple Variables; Averaging Spread Options; Lookback Basket Options; References; 6 Estimating Model Parameters; Calibration of Parameters in the Black-Scholes Model; Inferring qt,T; Using Implied Black-Scholes Volatility Surface and Zero Rate Term Structure to Value Options; Using Volatility Term Structure; Using Volatility Surface

Getting the Implied Stock Prices When i = 0Getting the Implied Probabilities When i = 0; Getting the Implied Stock Prices When i = 1; Getting the Implied Probabilities When i = 1; Calibration of Interest Rate Option Model Parameters; Statistical Estimation; Using Historical Implied Volatilities; Using Historical Underlying Values; References; 7 The Effectiveness of Hedging Strategies; Delta Hedging; Hedging the Sale of a Vanilla European-Style Call Option on a Nondividend-Paying Stock; Hedging the Sale of a Vanilla European-Style Call Option on a Dividend-Paying Stock

Hedging the Sale of a Vanilla European-Style Put Option on a Dividend-Paying Stock

Sommario/riassunto

Learn how quantitative models can help fight client problems head-on Before financial problems can be solved, they need to be fully understood. Since in-depth quantitative modeling techniques are a powerful tool to understanding the drivers associated with financial problems, one would need a solid grasp of these techniques before being able to unlock their full potential of the methods used. In The Mathematics of Financial Models, the author presents real world solutions to the everyday problems facing financial professionals. With interactive tools such as spreadsheets for valuation, pricing