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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  $q_t, T$ ; 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  $i = 0$ Getting 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

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#### 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

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