1. Record Nr. UNINA9911019955403321 Autore **Hoglund Thomas** Titolo Mathematical asset management / / Thomas Hoglund Pubbl/distr/stampa Hoboken, N.J.,: Wiley-Interscience, c2008 **ISBN** 9786611374167 9781281374165 1281374164 9780470293560 047029356X 9780470293553 0470293551 Descrizione fisica 1 online resource (234 p.) Disciplina 332.601/5195 Soggetti Derivative securities - Mathematical models Risk management - Mathematical models Investment analysis - Mathematical models Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references (p. 217-218) and index. Nota di contenuto Mathematical Asset Management; CONTENTS; Preface; 1 Interest Rate; 1.1 Flat Rate; 1.1.1 Compound Interest; 1.1.2 Present Value; 1.1.3 Cash Streams: 1.1.4 Effective Rate: 1.1.5 Bonds: 1.1.6 The Effective Rate as a Measure of Valuation; 1.2 Dependence on the Maturity Date; 1.2.1 Zero-Coupon Bonds; 1.2.2 Arbitrage-Free Cash Streams; 1.2.3 The Arbitrage Theorem: 1.2.4 The Movements of the Interest Rate Curve: 1.2.5 Sensitivity to Change of Rates; 1.2.6 Immunization; 1.3 Notes; 2 Further Financial Instruments; 2.1 Stocks; 2.1.1 Earnings, Interest Rate, and Stock Price; 2.2 Forwards; 2.3 Options 2.3.1 European Options2.3.2 American Options; 2.3.3 Option Strategies; 2.4 Further Exercises; 2.5 Notes; 3 Trading Strategies; 3.1 Trading Strategies: 3.1.1 Model Assumptions: 3.1.2 Interest Rate: 3.1.3 Exotic Options; 3.2 An Asymptotic Result; 3.2.1 The Model of Cox,

Ross, and Rubinstein; 3.2.2 An Asymptotic Result; 3.3 Implementing Trading Strategies; 3.3.1 Portfolio Insurance; 4 Stochastic Properties of

Stock Prices; 4.1 Growth; 4.1.1 The Distribution of the Growth; 4.1.2 Drift and Volatility; 4.1.3 The Stability of the Volatility Estimator; 4.2 Return; 4.3 Covariation

4.3.1 The Asymptotic Distribution of the Estimated Covariance Matrix5 Trading Strategies with Clock Time Horizon; 5.1 Clock Time Horizon; 5.2 Black-Scholes Pricing Formulas; 5.2.1 Sensitivity to Perturbations; 5.2.2 Hedging a Written Call; 5.2.3 Three Options Strategies Again; 5.3 The Black-Scholes Equation; 5.4 Trading Strategies for Several Assets; 5.4.1 An Unsymmetrical Formulation; 5.4.2 A Symmetrical Formulation; 5.4.3 Examples; 5.5 Notes; 6 Diversification; 6.1 Risk and Diversification; 6.1.1 The Minimum-Variance Portfolio; 6.1.2 Stability of the Estimates of the Weights

6.2 Growth Portfolios6.2.1 The Auxiliary Portfolio; 6.2.2 Maximal Drift; 6.2.3 Constraint on Portfolio Volatility; 6.2.4 Constraints on Total Stock Weight; 6.2.5 Constraints on Total Stock Weight and Volatility; 6.2.6 The Efficient Frontier; 6.2.7 Summary; 6.3 Rebalancing; 6.3.1 The Portfolio as a Function of the Stocks; 6.3.2 Empirical Verification; 6.4 Optimal Portfolios with Positive Weights; 6.5 Notes; 7 Covariation with the Market; 7.1 Beta; 7.1.1 The Market; 7.1.2 Beta Value; 7.2 Portfolios Related to the Market; 7.2.1 The Beta Portfolio; 7.2.2 Stability of the Estimates of the Weights

7.2.3 Market Neutral Portfolios7.3 Capital Asset Pricing Model; 7.3.1 The CAPM Identity; 7.3.2 Consequences of CAPM; 7.3.3 The Market Portfolio; 7.4 Notes; 8 Performance and Risk measures; 8.1 Performance Measures; 8.2 Risk Measures; 8.2.1 Value at Risk; 8.2.2 Downside Risk; 8.3 Risk Adjustment; 9 Simple Covariation; 9.1 Equal Correlations; 9.1.1 Matrix Calculations; 9.1.2 Optimal Portfolios; 9.1.3 Comparison with the General Model; 9.1.4 Positive Weights; 9.2 Multiplicative Correlations; 9.2.1 Uniqueness of the Parameters; 9.2.2 Matrix Calculations; 9.2.3 Parameter Estimation 9.2.4 Optimal Portfolios

Sommario/riassunto

A practical approach to the mathematical tools needed to increase portfolio growth, learn successful trading strategies, and manage the risks associated with market fluctuation Mathematical Asset Management presents an accessible and practical introduction to financial derivatives and portfolio selection while also acting as a basis for further study in mathematical finance. Assuming a fundamental background in calculus, real analysis, and linear algebra, the book uses mathematical tools only as needed and provides comprehensive, yet concise, coverage of various topics, such as: