

Contents

Preface	V
Language List	VII
Symbols and Notation	IX
Some Terminology	XIII
<hr/>	
Part I Option Pricing	
<hr/>	
1 Derivatives	3
2 Introduction to Option Management	13
3 Basic Concepts of Probability Theory	27
4 Stochastic Processes in Discrete Time	37
5 Stochastic Integrals and Differential Equations	45
6 Black-Scholes Option Pricing Model	61
7 Binomial Model for European Options	81
8 American Options	93

9 Exotic Options 103

10 Models for the Interest Rate and Interest Rate Derivatives 111

Part II Statistical Model of Financial Time Series

11 Financial Time Series Models 123

12 ARIMA Time Series Models 135

13 Time Series with Stochastic Volatility 155

Part III Selected Financial Applications

14 Value at Risk and Backtesting 171

15 Copulae and Value at Risk 185

16 Statistics of Extreme Risks 191

17 Volatility Risk of Option Portfolios 213

18 Portfolio Credit Risk 221

References 229