

Contents

Preface	xi
Chapter 1	
Introduction to Futures Contracting	1
Forward Contracting	6
<i>Getting Out of a Forward Position</i>	10
Futures Contracting	12
<i>Standardization</i>	12
<i>Centralized Markets</i>	15
<i>Daily Settlement and the Clearinghouse</i>	15
<i>Margins</i>	22
<i>Regulation</i>	26
Uses of Futures Contracts	30
<i>Speculation</i>	31
<i>Hedging</i>	32
<i>Arbitrage</i>	33
Mechanics of Trading	34
Delivery Issues	35
<i>Delivery Periods</i>	36
<i>Multiple Deliverable Grades</i>	36
<i>Cash Settlement</i>	41
<i>Exchange of Futures for Physicals</i>	41
Chapter 2	
The Pricing of Futures Contracts	43
An Introduction to Arbitrage	44
<i>The S&P 1 Contract</i>	44
<i>Cash-and-Carry Arbitrage</i>	44
<i>Pure Arbitrage</i>	45
<i>Reverse Cash-and-Carry Arbitrage</i>	46
<i>No-Arbitrage Equilibrium</i>	48

The Fundamental No-Arbitrage Equation	48
<i>Arbitrage with No Payouts</i>	49
<i>Arbitrage with Payouts</i>	53
<i>Calendar Spreads and Arbitrage</i>	59
Transactions Costs and Arbitrage	62
<i>Types of Transactions Costs</i>	63
<i>Cash-and-Carry and Reverse Cash-and-Carry Arbitrage</i>	64
Quasi-Arbitrage	68
<i>Creating Synthetic Securities</i>	68
<i>Using the Fundamental No-Arbitrage Equation</i>	70
<i>Finding Quasi-Arbitrage Opportunities</i>	74
Futures Pricing under Impediments to Short Sales	84
<i>Pure Assets and Convenience Assets</i>	85
<i>Full-Carry versus Non-Full-Carry Markets</i>	86
<i>Quasi-Arbitrage</i>	90
Risk and the Pricing of Futures Contracts	91
<i>Systematic-Risk Explanation</i>	93
<i>Hedging-Pressure Explanation</i>	99
<i>Price Discovery</i>	100
<i>Arbitrage versus Systematic Risk-Pricing</i>	100
 Chapter 3	
Risk Management	103
The Perfect Hedging Model	103
Crosshedging	106
<i>The Crosshedge Equation</i>	106
<i>The Statistical Approach</i>	111
<i>The Analytical Approach</i>	121
<i>Crosshedging and Synthetic Spot Positions</i>	126
Quantity Uncertainty	127
<i>A General Formula</i>	130
Tailing and Marking to Market	132
<i>Tailing and the Relationship between Forward and Futures Prices</i>	134
Natural versus Futures Hedges	135
Why Firms Hedge	138
<i>Why Do Firms Hedge?</i>	141
 Chapter 4	
Stock Index Futures	145
Cash Market	145
<i>Indices</i>	146
Stock Index Futures	153
<i>Standard and Poor's 500 Futures</i>	153
<i>New York Stock Exchange Composite Index Futures</i>	155
<i>Major Market Index Futures</i>	156

<i>Value Line Index Futures</i>	156
<i>The Fundamental No-Arbitrage Equation</i>	157
<i>Stock Index Futures and Institutional Investors</i>	167

Chapter 5

Short-Term Interest Rate Futures 187

Eurodollar Time Deposits	203
<i>Cash Market</i>	203
<i>Futures Market</i>	204
<i>Application: Creating Synthetic Fixed-Rate Loans</i>	212
Treasury Bills	229
<i>Cash Market</i>	229
<i>Futures Market</i>	231
<i>Using T-Bill Futures to Change the Maturity of a T-Bill</i>	242
<i>Empirical Evidence on T-Bill Futures</i>	261
<i>The TED Spread</i>	262

Chapter 6

Long-Term Interest Rate Futures 251

Treasury Bond and Treasury Note Cash Market	252
<i>T-Bond Yields, Pricing, and Quoting Conventions</i>	252
<i>Duration</i>	255
Repurchase Agreement Markets	259
Treasury Bond and Treasury Note Futures	259
<i>The Delivery Sequence</i>	260
<i>Multiple Deliverable Grades</i>	261
<i>Fundamental No-Arbitrage Equation</i>	269
<i>Using T-Bond Futures to Hedge a Bond Portfolio</i>	278
<i>The Seller's Options</i>	296
Municipal Bond Cash Market	312
<i>Quoting Conventions and Pricing</i>	312
Municipal Bond Futures Market	313
<i>The Bond Buyer 40 Index</i>	315
<i>The Fundamental No-Arbitrage Equation</i>	318
<i>Hedging with Muni Futures</i>	323

Chapter 7

Foreign Exchange Futures 325

Foreign Exchange Cash Market	325
<i>Quoting Conventions</i>	326
<i>Cross Rates</i>	328
Foreign Exchange Forward Contracts	330
Foreign Exchange Futures Market	331
<i>Fundamental No-Arbitrage Equation</i>	333
<i>Covered Interest Rate Parity and International Investment</i>	340

<i>Empirical Evidence on Covered Interest Rate Parity</i>	341
<i>Hedging</i>	342
<i>Natural Hedge</i>	344
Creating Synthetic Foreign-Currency-Denominated Futures Contracts	350
<i>Synthetic Cross Rate Futures Contracts</i>	350
<i>Synthetic Foreign-Currency-Denominated Interest Rate Futures Contracts</i>	355
 Chapter 8	
Commodity Futures	363
The Fundamental No-Arbitrage Equation for Commodity Futures	364
<i>Marginal Convenience Values</i>	367
Metal Futures	372
<i>Cash Market</i>	372
<i>Futures Market</i>	374
Petroleum Futures	377
<i>Cash Market</i>	377
<i>Futures Market</i>	378
<i>Hedging</i>	390
Grain Futures	395
<i>Cash Market</i>	395
<i>Futures Market</i>	395
<i>Hedging</i>	406
Soybean Product Futures	409
<i>Cash and Futures Markets</i>	409
Livestock Futures	415
<i>Cash Market</i>	416
<i>Futures Market</i>	418
<i>Fundamental No-Arbitrage Equation</i>	420
<i>Hedging</i>	424
 Chapter 9	
Options and Options on Futures	425
Options on Stocks	426
<i>Payoff Diagrams</i>	427
<i>Payoff Diagrams for Options</i>	428
<i>Combinations</i>	433
<i>Put-Call Parity</i>	439
Options as an Alternative to Futures	444
Option Pricing and Arbitrage	446
<i>Two-State Pricing</i>	448
<i>The Black-Scholes Formula</i>	451
<i>Logic of the Black-Scholes Formula</i>	455
<i>Sensitivity of the Black-Scholes Model to Changes in Inputs</i>	458

<i>Assumptions of and Adjustments to the Black-Scholes Model</i>	463
Options on Futures	464
<i>Pricing and Arbitrage for Options on Futures</i>	466
Embedded Options	467
Chapter 10	
Interest Rate Swaps	469
Generic Interest Rate Swaps	469
Interest Rate Swaps and Eurodollar Strips	472
<i>Hedging a Swap with Eurodollar Strips</i>	475
<i>Advantages of Swaps over Strips</i>	479
<i>Quasi-Arbitrage</i>	479
Taking Offsetting Positions in Swaps	480
Foreign Exchange Swaps	482
References	483
Name Index	495
Subject Index	497