

Contents

Preface	xi
1 The Hedge Fund Industry	1
1.1 What Are Hedge Funds?	1
1.2 The Structure of a Hedge Fund	4
1.2.1 Fund Administrators	5
1.2.2 Prime Brokers	5
1.2.3 Custodian, Auditors and Legal	6
1.3 The Global Hedge Fund Industry	7
1.3.1 North America	8
1.3.2 Europe	10
1.3.3 Asia	11
1.4 Specialist Investment Techniques	12
1.4.1 Short Selling	12
1.4.2 Leverage	14
1.4.3 Liquidity	15
1.5 New Developments for Hedge Funds	16
1.5.1 UCITS III Hedge Funds	16
1.5.2 The European Passport	19
1.5.3 Restrictions on Short Selling	20
2 Major Hedge Fund Strategies	23
2.1 Single- and Multi-Strategy Hedge Funds	23
2.2 Fund of Hedge Funds	25

2.3	Hedge Fund Strategies	27
2.3.1	Tactical Strategies	28
2.3.1.1	Global Macro	28
2.3.1.2	Managed Futures	31
2.3.1.3	Long/Short Equity	36
2.3.1.4	Pairs Trading	38
2.3.2	Event-Driven	42
2.3.2.1	Distressed Securities	42
2.3.2.2	Merger Arbitrage	46
2.3.3	Relative Value	49
2.3.3.1	Equity Market Neutral	49
2.3.3.2	Convertible Arbitrage	50
2.3.3.3	Fixed Income Arbitrage	54
2.3.3.3.1	Capital Structure Arbitrage	56
2.3.3.3.2	Swap-Spread Arbitrage	57
2.3.3.3.3	Yield Curve Arbitrage	58
3	Hedge Fund Data Sources	61
3.1	Hedge Fund Databases	61
3.2	Major Hedge Fund Indices	65
3.2.1	Non-investable and Investable Indices	66
3.2.2	Dow Jones Credit Suisse Hedge Fund Indexes	68
3.2.2.1	Liquid Alternative Betas	70
3.2.3	Hedge Fund Research	73
3.2.4	HedgeFund.net	77
3.2.5	FTSE Hedge	77
3.2.5.1	FTSE Hedge Momentum Index	78
3.2.6	Greenwich Alternative Investments	79
3.2.6.1	GAI Investable Indices	80
3.2.7	Morningstar Alternative Investment Center	83
3.2.7.1	MSCI Hedge Fund Classification Standard	83
3.2.7.2	MSCI Investable Indices	85
3.2.8	EDHEC Risk and Asset Management Research Centre (www.edhec-risk.com)	86
3.3	Database and Index Biases	88
3.3.1	Survivorship Bias	89
3.3.2	Instant History Bias	90
3.4	Benchmarking	91
3.4.1	Tracking Error	92
	Appendix A: Weighting Schemes	95

4 Statistical Analysis	99
4.1 Basic Performance Plots	99
4.1.1 Value Added Monthly Index	99
4.1.2 Histograms	102
4.2 Probability Distributions	105
4.2.1 Populations and Samples	106
4.3 Probability Density Function	107
4.4 Cumulative Distribution Function	108
4.5 The Normal Distribution	109
4.5.1 Standard Normal Distribution	110
4.6 Visual Tests for Normality	111
4.6.1 Inspection	111
4.6.2 Normal Q-Q Plot	112
4.7 Moments of a Distribution	114
4.7.1 Mean and Standard Deviation	114
4.7.2 Skewness	117
4.7.3 Excess Kurtosis	119
4.7.4 Data Analysis Tool: Descriptive Statistics	120
4.8 Geometric Brownian Motion	122
4.8.1 Uniform Random Numbers	125
4.9 Covariance and Correlation	126
4.10 Regression Analysis	131
4.10.1 Ordinary Least Squares	131
4.10.1.1 Coefficient of Determination	133
4.10.1.2 Residual Plots	134
4.10.1.3 Jarque–Bera Normality Test	135
4.10.1.4 Data Analysis Tool: Regression	138
4.11 Portfolio Theory	142
4.11.1 Mean–Variance Analysis	142
4.11.2 Solver : Portfolio Optimisation	145
4.11.3 Efficient Portfolios	148
5 Risk-Adjusted Return Metrics	151
5.1 The Intuition behind Risk-Adjusted Returns	152
5.1.1 Risk-Adjusted Returns	154
5.2 Common Risk-Adjusted Performance Ratios	157
5.2.1 The Sharpe Ratio	160
5.2.2 The Modified Sharpe Ratio	162
5.2.3 The Sortino Ratio	163
5.2.4 The Drawdown Ratio	167

5.3	Common Performance Measures in the Presence of a Market Benchmark	170
5.3.1	The Information Ratio	172
5.3.2	The <i>M</i> -Squared Metric	173
5.3.3	The Treynor Ratio	174
5.3.4	Jensen's Alpha	178
5.4	The Omega Ratio	181
6	Asset Pricing Models	185
6.1	The Risk-Adjusted Two-Moment Capital Asset Pricing Model	185
6.1.1	Interpreting <i>H</i>	189
6.1.2	Static Alpha Analysis	191
6.1.3	Dynamic Rolling Alpha Analysis	193
6.2	Multi-factor Models	195
6.3	The Choice of Factors	196
6.3.1	A Multi-Factor Framework for a Risk-Adjusted Hedge Fund Alpha League Table	202
6.3.2	Alpha and Beta Separation	208
6.4	Dynamic Style Based Return Analysis	210
6.5	The Markowitz Risk-Adjusted Evaluation Method	214
7	Hedge Fund Market Risk Management	223
7.1	Value-at-Risk	223
7.2	Traditional Measures	226
7.2.1	Historical Simulation	226
7.2.2	Parametric Method	229
7.2.3	Monte Carlo Simulation	230
7.3	Modified VaR	233
7.4	Expected Shortfall	236
7.5	Extreme Value Theory	239
7.5.1	Block Maxima	240
7.5.2	Peaks over Threshold	241
	References	245
	Important Legal Information	249
	Index	251