Table of Contents

Preface i

Introduction 1

1. Gaining Execution Efficiency 1
2. Electronic and Algorithmic Trading 3
3. Proliferation of Strategies 5

Trade on Price Trends 9

1. Numerologist and Astrologer 10
2. Behavioral Explanation for Market Trends 12
3. Momentum and Mean Reversion 15
4. Price Series and Autoregressive Analysis 19
5. Nonlinear Models and Neural Networks 26
6. Use of High Frequency Data 30
7. Key Points on Price Trends 34

Trade on Pairs 37

1. Pairs Trading and Algorithm 38
2. Is it Still Profitable? 40
3. Pairs Identification by Ranking Distance 42
4. Cointegration and Long-term Equilibrium 45
5. Risk Arbitrage 48

6. Trading Futures Spread 50

7. Fixed Income Arbitrage 60

8. Key Points on Pairs Trading 62

Trade on News 65

1. Use of News and the Harpies 66

2. No News is Bad News 68

3. Market Reaction and Trading Psychology 72

4. The Need for Automated News Analysis 80

5. Building Textual News into Quantitative Models 82

6. Commercial Applications 90

7. Key Points on News Trading 92

Algorithm Driven Execution 95

1. Flash Crash and Its Lessons 96

2. Benchmark Cost-related Strategies 99

3. A Slew of Military Monikers 104

4. Evaluating Trading Costs 107

5. Blurring Line between Alpha and Execution 115

6. Market Trends and Impacts 116

7. Key Points on Algorithmic Execution 117

Trade on Volatility 121

1. Listed Options and the Fear Index 122

2. Volatility as an Asset Class 124

3. Estimating and Forecasting Volatility 131

4. Favored Volatility-based Strategies 138

5. Dynamic Delta-Hedging 142

6. Pairs Trading in Volatility 145

7. Key Points on Volatility Trading 147

Trade on Latency 149

1. Fairness of the Game 150

2. Not All Markets Are for HFT 153

3. Strategies and Market Quality 155

4. Colocation and Direct Access 159

5. Data Storage and Processing 163

6. Beware of Predatory Strategies 165

7. Key Points on HFT 169

The Operational Aspect 171

1. Building the System 172

2. Sourcing Trade Ideas 175

3. Evaluating Trading Performance 177

Appendix A: Abbreviations ..... A-i

Appendix B: Bibliographies ..... B-i

Appendix C: Index ..... C-i