

A Practical Guide  
to Algorithmic Strategies and  
Trading Systems

# HIGH- FREQUENCY TRADING

Irene Aldridge





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*A Practical Guide to Algorithmic  
Strategies and Trading Systems*

**IRENE ALDRIDGE**



**WILEY**

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Published by John Wiley & Sons, Inc., Hoboken, New Jersey.

Published simultaneously in Canada.

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***Library of Congress Cataloging-in-Publication Data:***

Aldridge, Irene, 1975–

High-frequency trading : a practical guide to algorithmic strategies and trading system / Irene Aldridge.

p. cm. – (Wiley trading series)

Includes bibliographical references and index.

ISBN 978-0-470-56376-2 (cloth)

1. Investment analysis. 2. Portfolio management. 3. Securities. 4. Electronic trading of securities. I. Title.

HG4529.A43 2010

332.64–dc22

2009029276

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

*To my family*



# Contents

<b>Acknowledgments</b>	<b>xi</b>
<b>CHAPTER 1 Introduction</b>	<b>1</b>
<hr/>	
<b>CHAPTER 2 Evolution of High-Frequency Trading</b>	<b>7</b>
<hr/>	
Financial Markets and Technological Innovation	7
Evolution of Trading Methodology	13
<b>CHAPTER 3 Overview of the Business of High-Frequency Trading</b>	<b>21</b>
<hr/>	
Comparison with Traditional Approaches to Trading	22
Market Participants	24
Operating Model	26
Economics	32
Capitalizing a High-Frequency Trading Business	34
Conclusion	35
<b>CHAPTER 4 Financial Markets Suitable for High-Frequency Trading</b>	<b>37</b>
<hr/>	
Financial Markets and Their Suitability for High-Frequency Trading	38
Conclusion	47

<b>CHAPTER 5 Evaluating Performance of High-Frequency Strategies</b>	<b>49</b>
<b>Basic Return Characteristics</b>	<b>49</b>
<b>Comparative Ratios</b>	<b>51</b>
<b>Performance Attribution</b>	<b>57</b>
<b>Other Considerations in Strategy Evaluation</b>	<b>58</b>
<b>Conclusion</b>	<b>60</b>
<b>CHAPTER 6 Orders, Traders, and Their Applicability to High-Frequency Trading</b>	<b>61</b>
<b>Order Types</b>	<b>61</b>
<b>Order Distributions</b>	<b>70</b>
<b>Conclusion</b>	<b>73</b>
<b>CHAPTER 7 Market Inefficiency and Profit Opportunities at Different Frequencies</b>	<b>75</b>
<b>Predictability of Price Moves at High Frequencies</b>	<b>78</b>
<b>Conclusion</b>	<b>89</b>
<b>CHAPTER 8 Searching for High-Frequency Trading Opportunities</b>	<b>91</b>
<b>Statistical Properties of Returns</b>	<b>91</b>
<b>Linear Econometric Models</b>	<b>97</b>
<b>Volatility Modeling</b>	<b>102</b>
<b>Nonlinear Models</b>	<b>108</b>
<b>Conclusion</b>	<b>114</b>
<b>CHAPTER 9 Working with Tick Data</b>	<b>115</b>
<b>Properties of Tick Data</b>	<b>116</b>
<b>Quantity and Quality of Tick Data</b>	<b>117</b>
<b>Bid-Ask Spreads</b>	<b>118</b>



<b>Bid-Ask Bounce</b>	<b>120</b>
<b>Modeling Arrivals of Tick Data</b>	<b>121</b>
<b>Applying Traditional Econometric Techniques to Tick Data</b>	<b>123</b>
<b>Conclusion</b>	<b>125</b>
<b>CHAPTER 10 Trading on Market Microstructure: Inventory Models</b>	<b>127</b>
<hr/>	
<b>Overview of Inventory Trading Strategies</b>	<b>129</b>
<b>Orders, Traders, and Liquidity</b>	<b>130</b>
<b>Profitable Market Making</b>	<b>134</b>
<b>Directional Liquidity Provision</b>	<b>139</b>
<b>Conclusion</b>	<b>143</b>
<b>CHAPTER 11 Trading on Market Microstructure: Information Models</b>	<b>145</b>
<hr/>	
<b>Measures of Asymmetric Information</b>	<b>146</b>
<b>Information-Based Trading Models</b>	<b>149</b>
<b>Conclusion</b>	<b>164</b>
<b>CHAPTER 12 Event Arbitrage</b>	<b>165</b>
<hr/>	
<b>Developing Event Arbitrage Trading Strategies</b>	<b>165</b>
<b>What Constitutes an Event?</b>	<b>167</b>
<b>Forecasting Methodologies</b>	<b>168</b>
<b>Tradable News</b>	<b>173</b>
<b>Application of Event Arbitrage</b>	<b>175</b>
<b>Conclusion</b>	<b>184</b>
<b>CHAPTER 13 Statistical Arbitrage in High-Frequency Settings</b>	<b>185</b>
<hr/>	
<b>Mathematical Foundations</b>	<b>186</b>
<b>Practical Applications of Statistical Arbitrage</b>	<b>188</b>
<b>Conclusion</b>	<b>199</b>

<b>CHAPTER 14 Creating and Managing Portfolios of High-Frequency Strategies</b>	<b>201</b>
<b>Analytical Foundations of Portfolio Optimization</b>	<b>202</b>
<b>Effective Portfolio Management Practices</b>	<b>211</b>
<b>Conclusion</b>	<b>217</b>
<b>CHAPTER 15 Back-Testing Trading Models</b>	<b>219</b>
<b>Evaluating Point Forecasts</b>	<b>220</b>
<b>Evaluating Directional Forecasts</b>	<b>222</b>
<b>Conclusion</b>	<b>231</b>
<b>CHAPTER 16 Implementing High-Frequency Trading Systems</b>	<b>233</b>
<b>Model Development Life Cycle</b>	<b>234</b>
<b>System Implementation</b>	<b>236</b>
<b>Testing Trading Systems</b>	<b>246</b>
<b>Conclusion</b>	<b>249</b>
<b>CHAPTER 17 Risk Management</b>	<b>251</b>
<b>Determining Risk Management Goals</b>	<b>252</b>
<b>Measuring Risk</b>	<b>253</b>
<b>Managing Risk</b>	<b>266</b>
<b>Conclusion</b>	<b>271</b>
<b>CHAPTER 18 Executing and Monitoring High-Frequency Trading</b>	<b>273</b>
<b>Executing High-Frequency Trading Systems</b>	<b>274</b>
<b>Monitoring High-Frequency Execution</b>	<b>280</b>
<b>Conclusion</b>	<b>281</b>

<b>CHAPTER 19 Post-Trade Profitability Analysis</b>	<b>283</b>
<hr/>	
<b>Post-Trade Cost Analysis</b>	<b>284</b>
<b>Post-Trade Performance Analysis</b>	<b>295</b>
<b>Conclusion</b>	<b>301</b>
 <b>References</b>	 <b>303</b>
 <b>About the Web Site</b>	 <b>323</b>
 <b>About the Author</b>	 <b>325</b>
 <b>Index</b>	 <b>327</b>



# Acknowledgments

This book was made possible by a terrific team at John Wiley & Sons: Deb Englander, Laura Walsh, Bill Falloon, Tiffany Charbonier, Cristin Riffle-Lash, and Michael Lisk. I am also immensely grateful to all reviewers for their comments, and to my immediate family for their encouragement, edits, and good cheer.



# Introduction

**H**igh-frequency trading has been taking Wall Street by storm, and for a good reason: its immense profitability. According to *Alpha* magazine, the highest earning investment manager of 2008 was Jim Simons of Renaissance Technologies Corp., a long-standing proponent of high-frequency strategies. Dr. Simons reportedly earned \$2.5 billion in 2008 alone. While no institution was thoroughly tracking performance of high-frequency funds when this book was written, colloquial evidence suggests that the majority of high-frequency managers delivered positive returns in 2008, whereas 70 percent of low-frequency practitioners lost money, according to the *New York Times*. The profitability of high-frequency enterprises is further corroborated by the exponential growth of the industry. According to a February 2009 report from Aite Group, high-frequency trading now accounts for over 60 percent of trading volume coming through the financial exchanges. High-frequency trading professionals are increasingly in demand and reap top-dollar compensation. Even in the worst months of the 2008 crisis, 50 percent of all open positions in finance involved expertise in high-frequency trading (Aldridge, 2008). Despite the demand for information on this topic, little has been published to help investors understand and implement high-frequency trading systems.

So what is high-frequency trading, and what is its allure? The main innovation that separates high-frequency from low-frequency trading is a high turnover of capital in rapid computer-driven responses to changing market conditions. High-frequency trading strategies are characterized by a higher number of trades and a lower average gain per trade. Many traditional money managers hold their trading positions for weeks or even