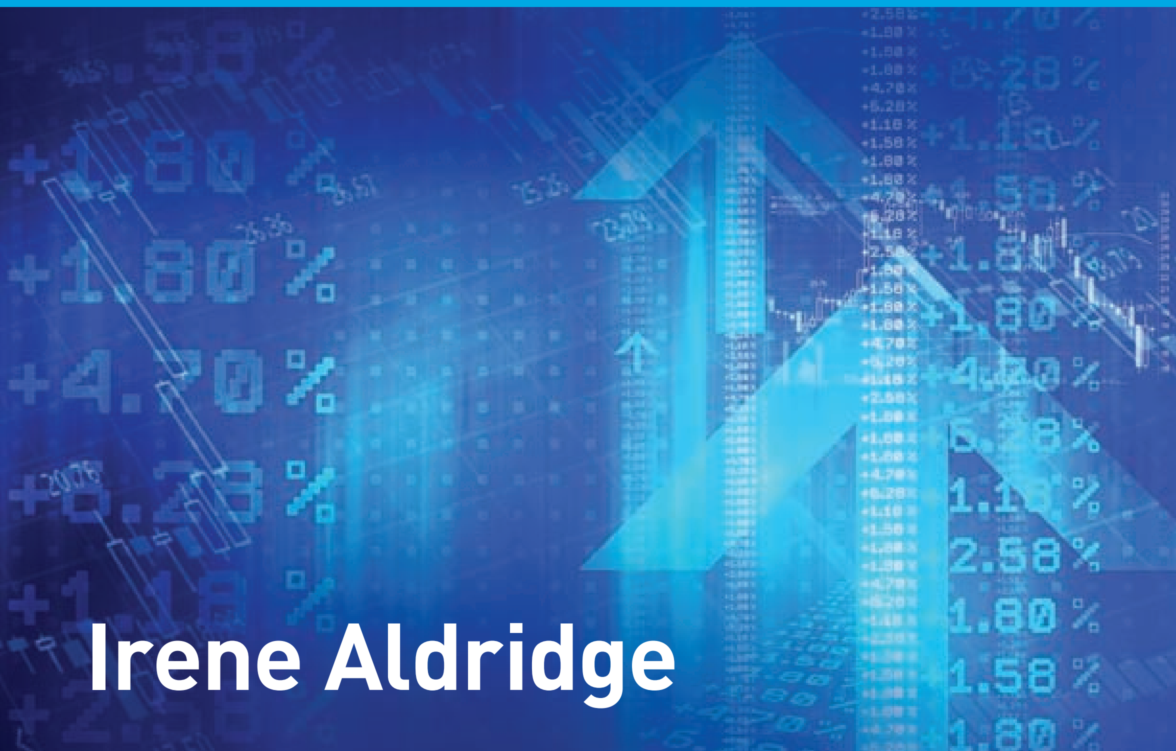
Wiley Trading

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

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To my family

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CHAPTER 1

Introduction

High-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