CONTENTS

	Preface	xi
	Acknowledgments	xiii
CHAPTER 1	How Modern Markets Differ from Those Past	1
	Media, Modern Markets, and HFT	6
	HFT as Evolution of Trading Methodology	7
	What Is High-Frequency Trading?	13
	What Do High-Frequency Traders Do?	15
	How Many High-Frequency Traders Are There?	17
	Major Players in the HFT Space	17
	Organization of This Book	18
	Summary	18
	End-of-Chapter Questions	19
CHAPTER 2	Technological Innovations, Systems, and HFT	21
	A Brief History of Hardware	21
	Messaging	25
	Software	33
	Summary	35
	End-of-Chapter Questions	35
CHAPTER 3	Market Microstructure, Orders, and	
	Limit Order Books	37
	Types of Markets	37
	Limit Order Books	39
	Aggressive versus Passive Execution	43
	Complex Orders	44
	Trading Hours	45
		46

vii

viii

Ignition

201

	Pinging/Sniping/Sniffing/Phishing	201
	Quote Stuffing	201
	Spoofing	202
	Pump-and-Dump	202
	Machine Learning	207
	Summary	208
	End-of-Chapter Questions	208
CHAPTER 13	Regulation	209
	Key Initiatives of Regulators Worldwide	209
	Summary	222
	End-of-Chapter Questions	223
CHAPTER 14	Risk Management of HFT	225
	Measuring HFT Risk	225
	Summary	244
	End-of-Chapter Questions	244
CHAPTER 15	Minimizing Market Impact	245
	Why Execution Algorithms?	245
	Order-Routing Algorithms	247
	Issues with Basic Models	258
	Advanced Models	262
	Practical Implementation of Optimal Execution Strategies	269
	Summary	269
	End-of-Chapter Questions	270
CHAPTER 16	Implementation of HFT Systems	271
	Model Development Life Cycle	271
	System Implementation	273
	Testing Trading Systems	283
	Summary	286
	End-of-Chapter Questions	287
	About the Author	288
	About the Web Site	290
	References	291
	Index	303