An Introduction to Trading in the Financial Markets

Market Basics

R. "Tee" Williams

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Academic Press is an imprint of Elsevier

Academic Press is an imprint of Elsevier
30 Corporate Drive, Suite 400, Burlington, MA 01803, USA
525 B Street, Suite 1900, San Diego, California 92101-4495, USA
The Boulevard, Langford Lane, Kidlington, Oxford 0X5 1GB, UK

Library of Congress Cataloging-in-Publication Data
Williams, R. Tee.
An introduction to trading in the financial markets : market basics / R. "Tee" Williams.
p. cm.
Includes bibliographical references and index.
ISBN 978-0-12-374838-6 (pbk. : alk. paper) 1. Capital markets. 2. Stock exchanges. 3. Financial instruments. I. Title.
HG4523.W555 2011
332.6—dc22 2010023177
Set ISBN: 978-0-12-384972-4

British Library Cataloguing-in-Publication Data
A catalogue record for this book is available from the British Library.

For information on all Academic Press publications visit our Web site at *www.elsevierdirect.com*

Printed in China
10 11 12 13 14 10 9 8 7 6 5 4 3 2 1

Preface for the Set

The four books in the set are an exercise in reportage. Throughout my career, I have been primarily a consultant blessed with a wide array of projects for many different kinds of entities in Africa, Asia, Europe, and North America. I have not been a practitioner but rather a close observer synthesizing the views of many practitioners. Although these books describe trading and the technology that supports trading, I have never written an order ticket or line of computer code in anger.

The purpose of these books is to describe *what* individuals and entities in the trading markets do. Bob Simon of *60 Minutes* once famously asked two founders of the dot-com consulting firm Razorfish to describe what they did when they got to work each day and took off their coats. That is the purpose of these books: to examine what participants in the trading markets do each day when they take off their coats. These books do not attempt to prescribe what should occur or proscribe what should not.

The nature of the source material for these books is broad observation. In teaching professional development courses over nearly two decades, I have found that both those new to the markets and even those who have been market participants for years become experts in their specific area of activity; however, they lack the context to understand how their tasks fit into the overall industry. The goal of this set of books is to provide that context.

Most consulting projects in which I have participated have required interviews with people working in all phases of the trading markets about what they do and their views on how the markets work. Those views and opinions helped frame my understanding of the structure of the markets and the roles of its participants. I draw on those views, but I cannot begin to document all the exact sources.

I have isolated fun stories I have heard along the way, which I cannot attribute to a specific source, into boxes within the text. These boxes also include asides that are related to the subjects being discussed but that do not specifically fit into the flow.

The structure of the books presents information in a hierarchical form that puts entities, instruments, functions, technology, and processes into a framework. Categorizing information into hierarchies helps us understand the subject matter better and gives us a framework in which to view and understand new information. The frameworks also help us understand how parts relate to the whole. However, my experience as a consultant convinces me that while well-chosen frameworks can be helpful and appealing to those first coming to understand new subject matter, they also carry the risk that their perspective may mask other important information about the subjects being categorized. So for those who read these books and want to believe that the trading markets fit neatly into the frameworks presented here: "Yes," I said. "Isn't it pretty to think so."[1]

1 Ernest Hemingway. *The Sun Also Rises*, 1926, New York: Charles Scribner's Sons (Scribner).

FEATURES OF THE BOOKS

Figure FM.1 shows the books in this set with tabs on the side for each of the major sections in the book. The graphic is presented at the end of each major part of the books with enlarged tabs for the section just covered, with arrows pointing to the

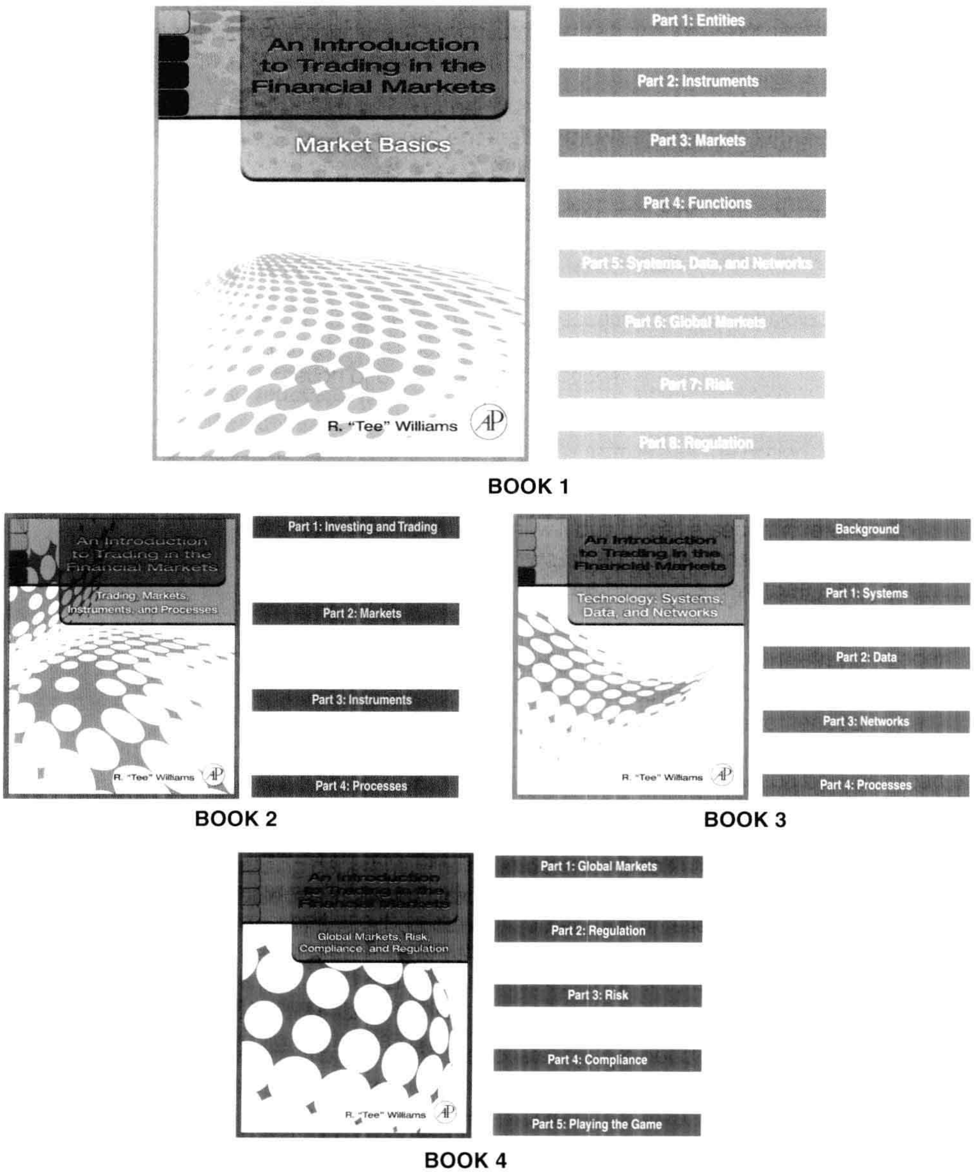

Figure FM.1 The ***books of this set*** are organized as a whole and concepts are distributed so that they build from book to book.

parts of other books and within the same book where other attributes of the same topic are addressed. I call this the "Moses Approach."[2]

In addition to words and graphics, the four books use color to present information, as shown in Figure FM.2. Throughout, the following color scheme represents the entities as well as functions, processes, systems, data, and networks associated with them.

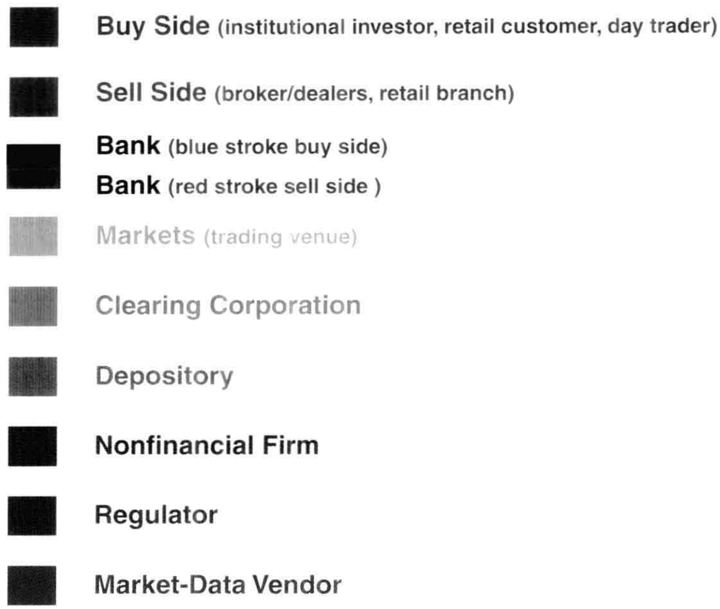

Figure FM.2 ***Color in these books*** identifies entities that are central to the trading markets, and also identifies the functions and processes that are associated with those entities.

A frustration of writing about the trading markets is the wealth of colorful and descriptive terms that permeate the markets. These terms are helpful in describing what happens in markets or where people work, but there is no accepted source that defines terms in everyday usage with precision. Good examples of this problem are the meaning and spellings of the terms "front office," "middle office" and "backoffice."[3] Similarly I use "indices" to mean a collection of individual instances of a single index. (For example closing *indices*—that is, values—of the Dow Jones Industrial Average on January 2, 3, and 4.) I use "indexes" to mean a collection of different copyrighted information products measuring market performance (e.g., the Dow Jones, FTSE, and DAX *indexes*).

I have elected to define the terms, as I understand them, within the books. The first instance of words appear in ***bold italics***, which relate to definitions in the Glossary at the end of each one. The books use more hyphenated adjectives than

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2 You may remember from the Bible that God took Moses up on the mountain and, in addition to giving him the Ten Commandments, showed Moses the Promised Land. This seems to be a good approach to organizing information. If you expect people to wander in the wilderness of your prose, you at least owe them a glimpse of where they are going.

3 I separate "front" and "middle" from "office" and combine "backoffice." I believe that "backoffice" is a widely used term throughout the economy, whereas "front office" and more particularly "middle office" are nonce terms that may not migrate into common usage beyond the trading markets.

normal usage would require. I believe it is important to remove all doubt that the term "market-data systems" refers to systems for handling market data, not data systems used by a market.

The books in this set contain a large number of graphics. The goal of them is to provide more than decoration. For many people, graphics help them understand the concepts described in the text. Most of them illustrate process flows, relationships, or characteristics of market behavior. There is neither tabular data nor URLs from websites here. Both are likely to be too dated by the time the books are shipped from the publisher to you to provide any real value.

The graphics (and text) build from book to book. For example, in Part 1 of Book 1 the graphic in Figure FM.3 describing institutional investors appears. It shows

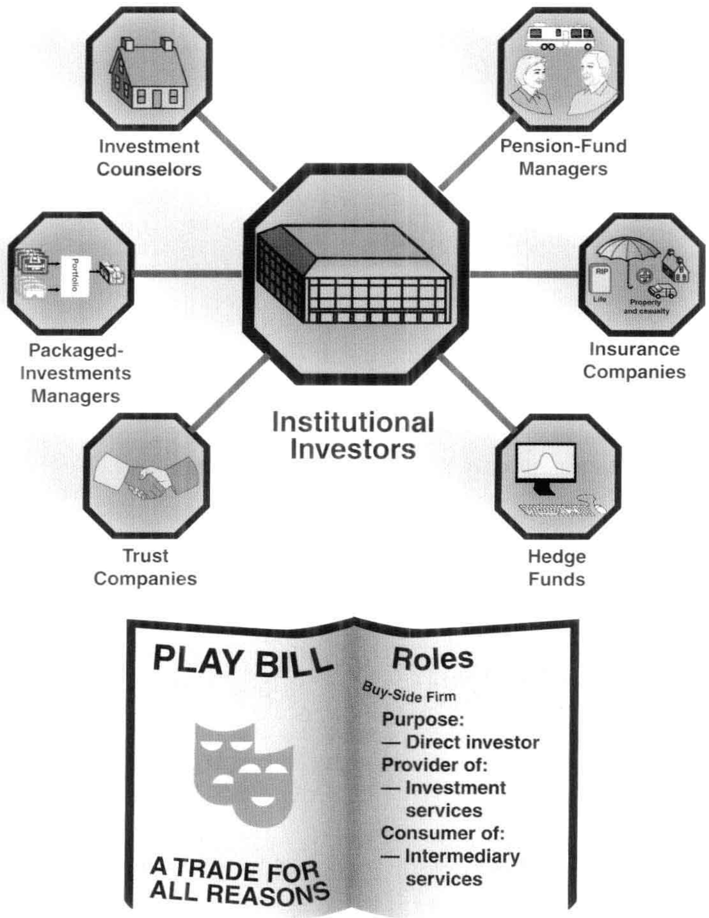

Figure FM.3 ***Institutional investors*** are introduced as important buy-side entities in Figure 1.1.3[4] of Book 1.

4 The figure numbers indicate that this is the third figure of the first category (buy side) of the first part (entities.) All figure numbers follow this pattern.

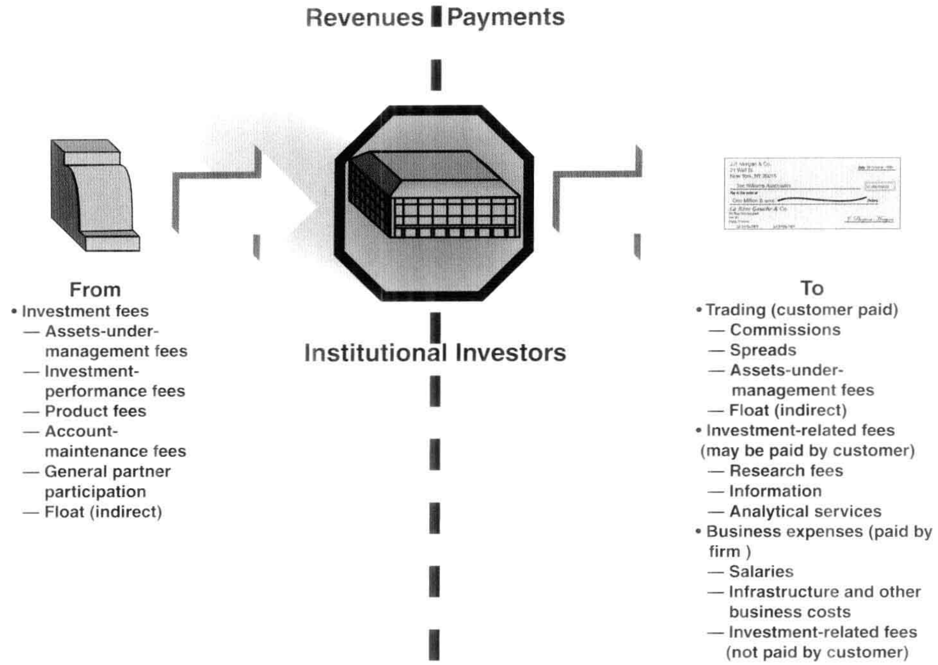

Figure FM.4 ***Institutional investor business models***—revenues and expenses—are illustrated in Book 1, Figure 1.1.3.7.

the customers, the suppliers, and the products and services for institutional investors. (Subsequent sections describe types of institutional investors based on how they are regulated or the service they perform.)

At the end of each entity subsection, the entity's core business model and what services it purchases from vendors and other providers are explained (see Figure FM.4).

Part 4 of Book 1 describes the functions performed by buy-side traders who work in institutional-investor firms (see Figure FM.5). The figure illustrates what tasks the buy-side trader performs (i.e., which other functions), who the buy-side trader serves, which external entities interact with the buy-side trader, and which other functions provide services to the buy-side trader.

Book 2, Part 4, describes the secondary market trading process. The second step in the trading process describes the initial role that the buy-side trader plays in trading.

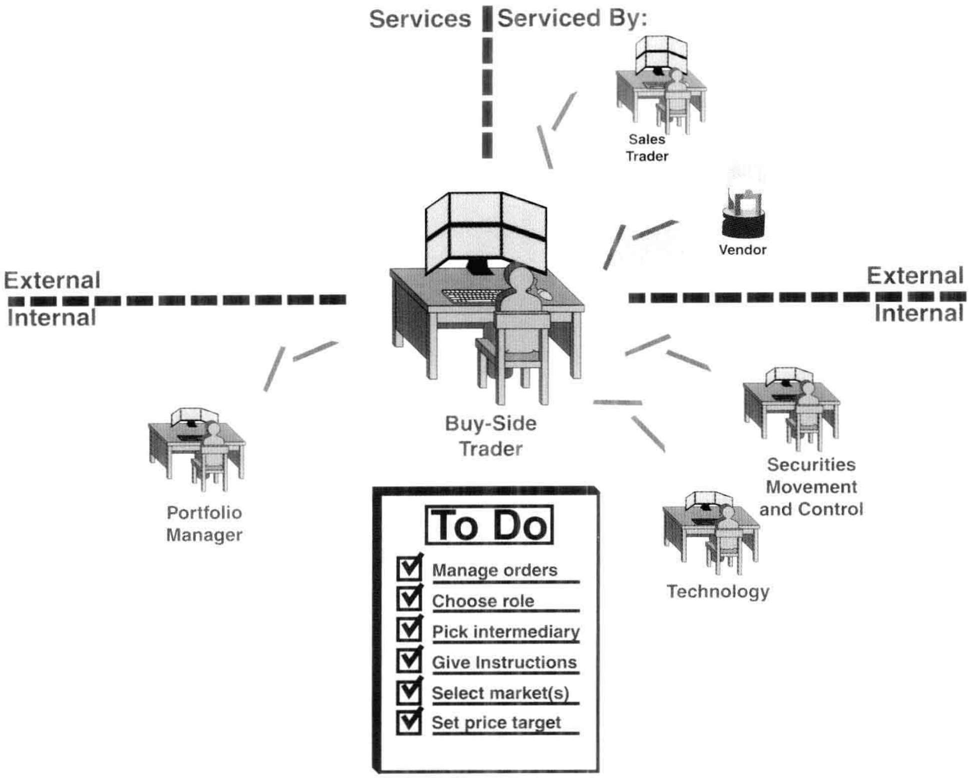

Figure FM.5 ***Buy-side traders*** manage trade execution within institutional investors and their functions are detailed in Figure 4.1.2.1 of Book 1.

Figure FM.6 presents the inputs to and outputs from the buy-side trading process as well as the primary focus of the buy-side trader and the decisions that the person must confront. Subsequent graphics in that section examine some of the decisions and alternatives in more detail.

Book 3 returns to the buy-side trader to understand the role of technology in the process. Part 4 of that book examines the systems, data, and networks that support buy-side trading.

Figure 4.3.2.2 in Book 3 (Figure FM.7, see page xii) shows the systems, data, and networks that support buy-side trading. The text identifies applications supplied by both internal and external sources that support order management. The buy-side trader generates information that is input directly to internal systems and indirectly to external systems. Finally, networks both within the firm and from markets and vendors provide linkages that facilitate the entire process. Subsidiary figures highlight the specific types of systems, data, and networks that are input to and output from buy-side trading.

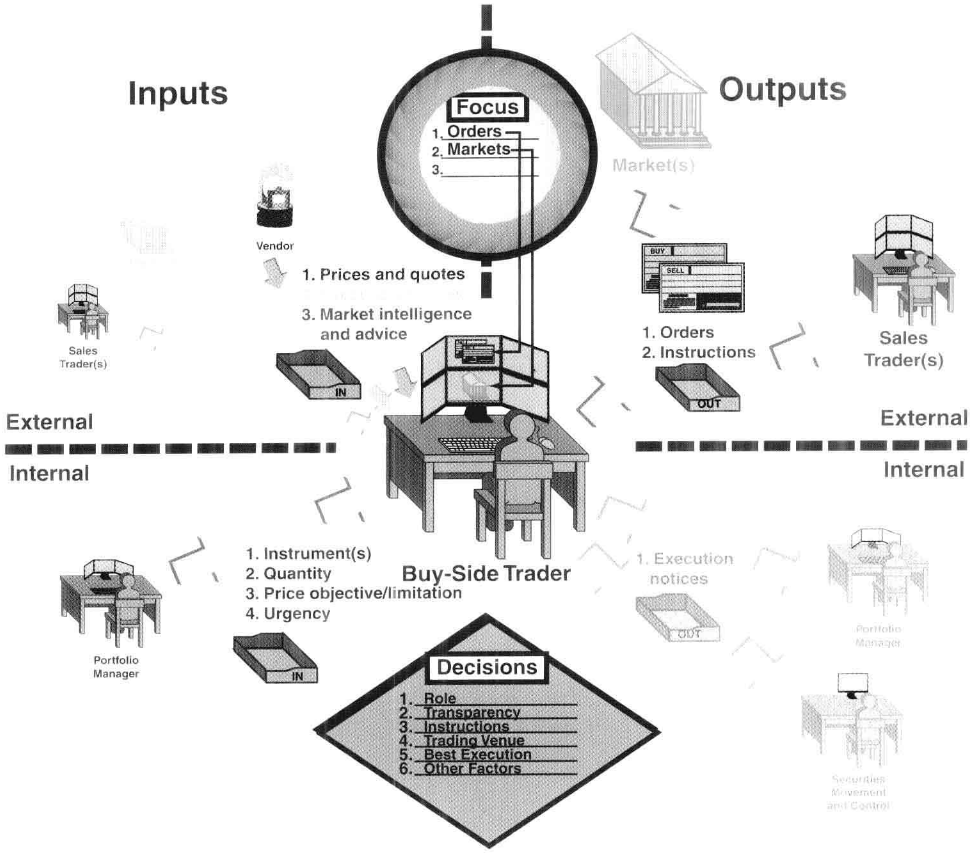

Figure FM.6 ***Buy-side trading*** is defined further as part of the trading process in Figure 4.2.2 of Book 2.

Finally, Book 4, Part 4, presents a hypothetical example that describes how a fictitious British investment management firm with a global presence manages an order across multiple markets with time, customer, and market pressures.

Here, David Anderson,[5] a London-based buy-side trader for Trafalgar Asset Management Ltd., is tasked with coordinating the sale of a very large order (500,000 shares) of In-the-Ether Networks (ticker symbol: ITEN) B.V., a Dutch network company with equities that are actively traded globally on the exchanges, ECNs, and MTFs in Amsterdam, Frankfurt, Hong Kong, London, New York, and Singapore.

5 All the names in the "Playing the Game" part are fictitious. However, I do know three different David Andersons, all of whom are Brits and work in some portion of the trading markets. These three gentlemen are the inspiration for the name. However, none of the David Andersons that I know are buy-side traders.

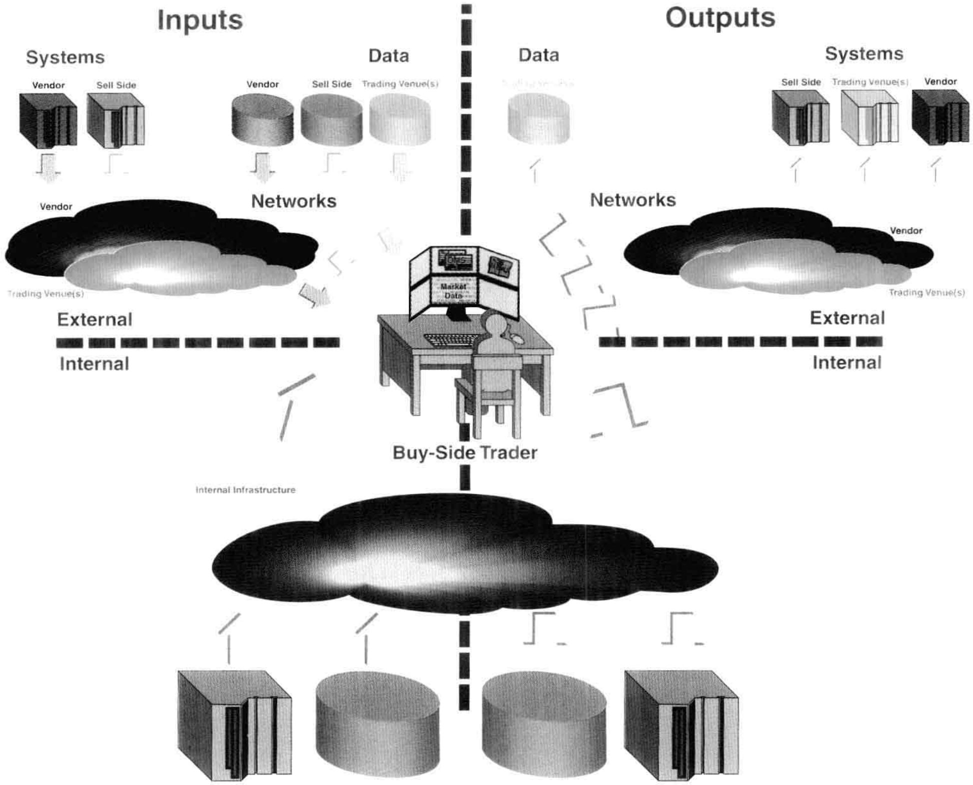

Figure FM.7 ***Buy-side trading*** requires systems, data, and networks and produces data as shown in Book 3, Figure 4.3.2.2.

The graphic in Figure FM.8 shows how the order is received along with instructions for its execution. As the process proceeds, the text describes how the order is then divided among global offices, electronic systems, and intermediaries to be executed through a continuing global process over two elapsed London days. The text also describes the settlement process following the trade. A large trade in multiple markets strains systems data and communications that were created when national markets were insular and did not interact. Subsequent graphics show how the process described in the narrative unfolds.

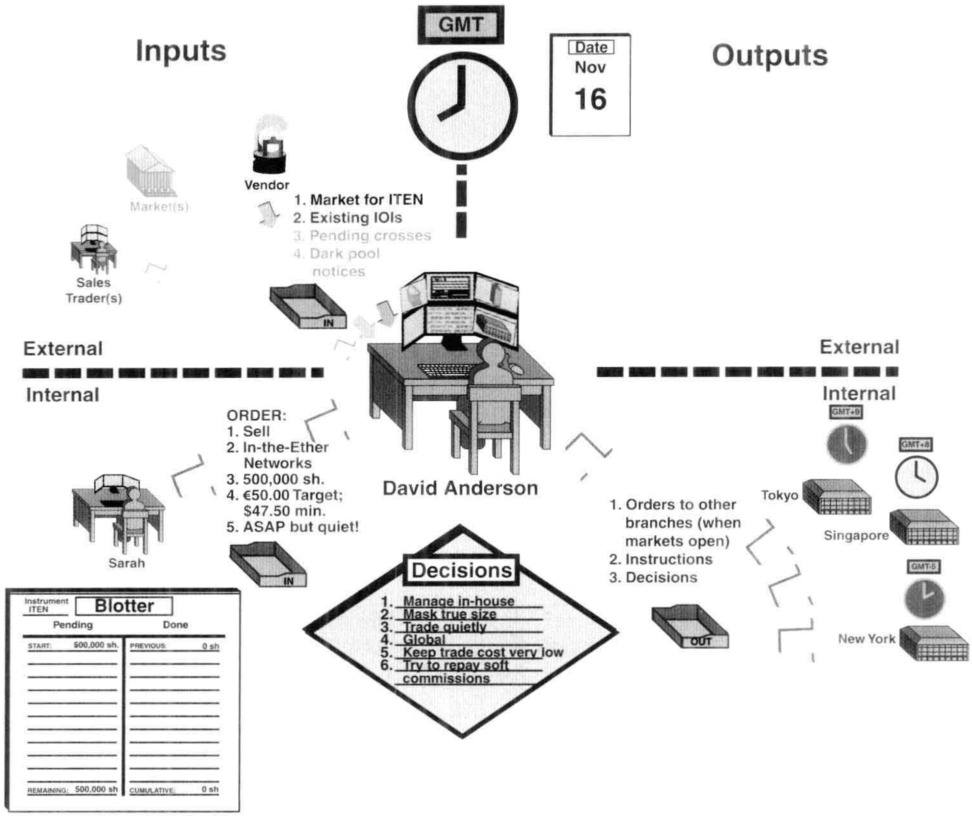

Figure FM.8 ***Buy-side trading*** is finally illustrated through a hypothetical example bringing together the decision process, technology, and interactions in Figure 4.2 of Book 4.

Similar linkages among the graphics in this set of books occur in describing instruments and markets.

As noted previously, a Glossary is included at the end of each book. For convenience, there is a Visual Glossary of the graphical metaphors and elements used in the images for the book. The visual glossary follows this preface to the set.

ACKNOWLEDGMENTS

This project began as an attempt to write a history of the markets beginning in the 1960s. There are a number of individuals who held important positions in the trading markets during and after the "backoffice crisis" in the late 1960s who helped me understand the markets early in my career. I thought that a book about them and the work they did to hold the markets together and then reshape those markets would be interesting.

There are several good books describing how Felix Rohatyn, Sandy Weill, and many others worked to bail out firms that were in trouble, but they do not describe the activities that occurred in the backoffice in the midst of the crisis. That book on history did not happen, but these books are my attempt to "pay forward" all the help I received from many different people. The descriptions of the markets in these books are built on the foundation of the knowledge that these people unselfishly imparted. I hope these books will in turn help those entering the markets.

In a real sense, these people and many more than I can list are the true footnotes and references for these books. My earliest teachers included

- Junius "Jay" Peake, University of Northern Colorado, R. Shriver Associates, Pershing and Company, and Shields and Company. (Jay was my first and is still my most influential teacher.)
- Morris Mendelson, The Wharton School of the University of Pennsylvania. (Morris offered Jay and me entre into the academic community, and Jay chose to stay. He and Jay wrote many papers together on market structure and automation, and they allowed me to help with some. Jay and I miss Morris very much.)
- Ray Holland, Triad Securities, A.G. Becker. (For more than 30 years, Ray has been a continuing source of information and advice about the mechanics of the backoffice processes required by the markets.)
- Dick Shriver, R. Shriver Associates. (Dick, my first boss, introduced me to consulting and many in the financial community including Jay. Dick remains a lifelong friend and mentor.)
- Don and Jack Weeden, Weeden & Company, and Fred Siesel, Weeden & Company and the NYSE. (Jay introduced me to Don, Jack, and Fred in the mid-1970s, and for a time we tried to foment a revolution in trading mechanics. Over the period since, they have been a source of information and insight that has helped me understand the way the markets operate.)

More recently, a number of others have provided important views on the workings of the trading process and supporting technology. Most of these people worked with me, or I worked for them on projects that form the basis for the books. These people include the following:

- Mike Atkin, Electronic Data Management (EDM) Council and Financial Information Services Division (FISD). (I have worked with Mike over the past 20 years first at the FISD and later at the EDM Council. Together, we have come to understand the processes required to manage data.)
- Dick Cowles, Telerate and CBOE. (I met Dick at the CBOE, interviewed him at Telerate, and worked with him for USAID as we tried to establish an over-the-counter market in Poland. Along the way, we became friends.)

- Andrew Delaney, A-Team Group. (Andrew taught classes with Craig Shumate and me. Parts of these books related to infrastructure technology, news, and research rely on Andrew's insights.)
- Tom Demchak, Brian Faughnan, SIAC and NYSE Euronext. (Tom, Brian, and their staffs were liaisons on a project to establish a capacity planning methodology for the equity and options markets in the United States and then to understand the impact of the conversion from fractional units of trading to decimals. They explained the issues of managing huge volumes of data message traffic, functions of the technologies that underpin trading markets, and methods for mitigating message volumes in excess of economically manageable capacity.)
- Deb Greenberger, Skyler Technologies and Dow Jones Markets. (In an attempt to resuscitate the Dow Jones Telerate subsidiary, Deb and I visited and interviewed customers in Asia, Europe, and North America to understand how they use data to manage their trading and related businesses.)
- Thomas Haley, NYSE (Tom was a coauthor of *The Creation and Distribution of Securities-Related Information in North America*, a description of the market-data industry that we worked on in 1984. That book presented an explanation of the processes in the market-data industry and was written by Tom with several other industry experts at the time on behalf of the FISD of the Information Industry Association [now known as the Software and Information Industry Association]. I met Tom and the others in the FISD when I served as editor for the book. Tom has been a friend and a constant source of information and advice on the market-data industry ever since.)
- Dan Gray, U.S. Securities and Exchange Commission; Lee Greenhouse, Greenhouse Associates and Citibank; Frank Hathaway, Nasdaq; Ron Jordan, NYSE; and George McCord, McCord Associates. (Dan, Lee, Frank, Ron, George, and I worked with their associates and people from SIAC to define and then specify a methodology for allocating market-data revenues for the different markets that trade NYSE- and Nasdaq-listed securities in the United States. The project caused us to examine the quoting behavior in the markets in great detail and to wrestle with issues such as locked and crossed markets.)
- Sarah Hayes and Kirsti Suutari, Thomson Reuters. (Sarah and Kirsti managed a project in which we visited many major financial centers globally to understand how people trade and the impact of those trading practices on information needs.)
- Alan Kay and Charlie Pyne, On Line Markets. (Alan and Charlie invited me to join them in a project to evaluate the meaning of the information business and how to use information as an entre to create trading venues.)
- Tom Knorring, Chicago Board Options Exchange; Joe Corrigan, Options Price Reporting Authority; and Tom Bendixen, Mark Grinbaum, and Jeff Soule, The International Securities Exchange. (Projects with and for these gentlemen formed the basis of my understanding of the mechanics and economics of the options markets.)
- Don Kittell, SIFMA, NYSE. (Don was the Securities Industry Association [now SIFMA] manager of a series of projects to forecast the impact of the conversion to decimal trading on message volumes. I was fortunate enough to work as a consultant with Don on those projects, where I learned much.)

- Brian McElligott, Kendall Vroman, and Brian's staff, CME Group. (The people at the CME took me to interview important constituencies in the futures markets to understand how they trade and use information.)
- Peter Moss, Thomson Reuters, and John White, State Street Global Advisors. (Peter and John were forceful advocates for these books. They have also been sources of understanding about the issues facing vendors and market-data users.)
- Leonard Mayer, Mayer & Schweitzer. (Lenny attended one of the classes Craig Shumate and I taught on new trading systems. [He should have been teaching me.] He cofounded one of the premier Nasdaq wholesale firms and was gracious enough to me help understand the business of being a dealer.)
- Lance Riley, SRI Consulting. (Lance was my first boss at SRI Consulting, and together we worked on many projects and interviewed countless people over 20 years. I miss Lance greatly.)
- Richard Rosenblatt and Joe Gawronski, Rosenblatt Securities. (Dick and Joe have been kind enough to take me along as they were trading on the floor of the NYSE. They have also shared their insights on the workings of the markets that they write in an ongoing series of white papers for their customers.)
- Craig Shumate, The Morris Group. (I met and worked with Craig at my first job at R. Shriver Associates, and we have worked together constantly since. He brought me into the business of professional training. It is Craig who pioneered the concept of the eight steps in the trading process and "Playing the Game" as a way to draw together all the aspects of trading in a single process description.)
- Herbie Skeete, Mondovisione and Thomson Reuters. (I met Herbie in London at least 20 years ago, and I try to see him every time I am in London or when he comes to the States. He is a wealth of information on market data and knows a huge number of people. Herbie introduced me to Elsevier and is responsible for my writing these books.)
- Al Thomson, Instinet; Lynch, Jones and Ryan; and AutEx. (Al and I have been collaborators and friends from my earliest work in the trading markets. He set up a great many of the interviews and provided insights that underlie the knowledge presented in these books.)
- Wayne Wagner, The Plexus Group (JPMorgan). (Wayne invited me into a project for the Department of Labor on the meaning of "best execution" in the early 1990s. He patiently explained how many different buy-side motivations resulted in very different expectations from trades.)

I am not able to remember and therefore thank all those that I have interviewed and the many others who worked at the firms for which I consulted for more than 35 years. (By my best estimate, I have averaged several hundred interviews each year since 1974. Therefore, the total number of interviews and thus people to whom I am indebted numbers in the thousands.) Rather than name a few and forget many, I would simply like to thank them all. This book is dedicated to them and most particularly to Jay Peake and Morris Mendelson.

Preface

This book is the introductory unit in a set of four books intended to provide the reader with a basic understanding of the structure, instruments, business functions, technology, regulation, and issues for the trading markets. Each of the additional three books provides an overview of a single aspect of the trading markets. This book is an introduction for the set that will serve as a foundation for the other three books.

We use the term *trading markets* as shorthand for trading in the financial markets. The books are focused on trading and not about financial markets as a whole. Therefore, we describe not only the act of trading but also the decisions that lead up to the execution and all the processes that follow the trade until money is exchanged for ownership, and even the accounting for positions acquired in the trading process. We do not cover many important financial products and services such as insurance and commercial banking except to the extent that those firms become involved in trading.

We use the metaphor of *the Street* to represent the market and those who participate in the market (see Figure FM.9). *The Street* was probably first used to refer to Wall Street, although every major financial center has its own "street." It is an area where the majority of trading and ancillary activities that support the trading environment take place. Harbor View Street in Hong Kong, Lombard Street in London, Diagonal Street in Johannesburg, Bay Street in Toronto, and Bahnhofstrasse in Zürich were all centers of local trading markets for their respective nations.

As the markets have become more electronic in nature, the notion of a physical place—a street—has become more symbolic than necessary. A street, an exchange, or a coffee house where traders meet to exchange information and trade is less important, but being physically near the locus of trading is now important to reduce trading ***latency***,[1] which is the time required to transmit orders to the place of execution. We return to this metaphor throughout the set of books when we are viewing an aspect of the markets from the perspective of the entities that operate in the markets.[2]

1 Throughout this book, when we use a term for the first time, we put it into ***bold italics***. This means that the term is an important concept in the industry and is defined in the Glossary at the end of the book. We also invite you to look at the term on the website that accompanies this set of books, where you will find not only interactive definitions but also links to other related terms and concepts.

2 Ongoing updates and changes to this book and those in the set will be collected at *http://teewilliamsassoc.com/*.

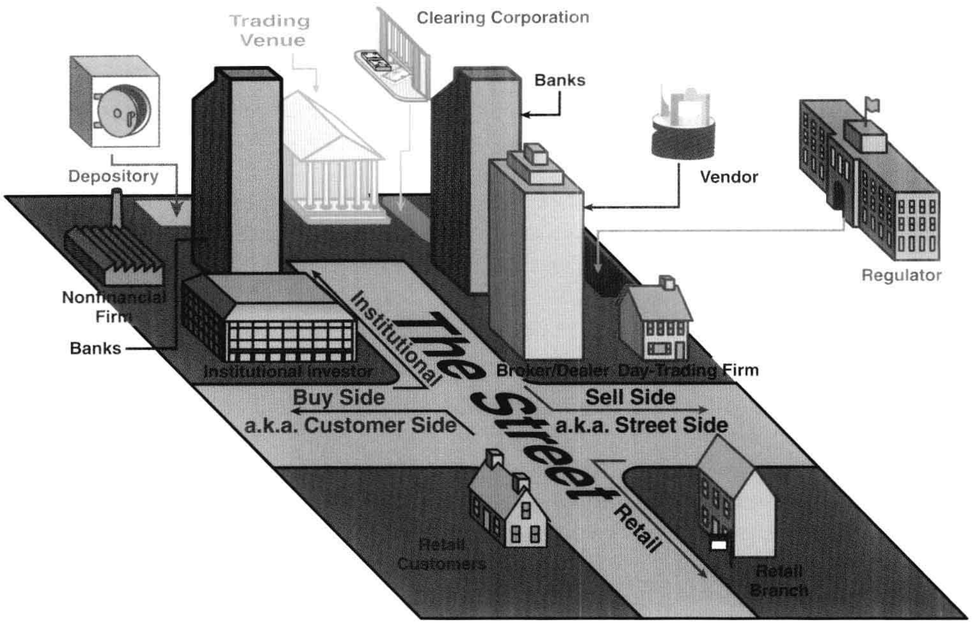

Figure FM.9 ***The Street*** introduces a recurring metaphor representing the individuals and entities that participate in the trading markets.

Our focus in this book is to describe the industry in general, but along the way we will try to point out unique country-specific features of the markets, entities, and processes. Therefore, we hope to describe the trading markets in a very generic sense and not any particular market. We use the term "instruments" rather than securities because we explore instruments that are not, strictly speaking, "securities" such as currencies, ***derivatives***, and those physical commodities for which there is an active trading market.

This book intends to provide you, the reader, with a fundamental understanding of the business of the trading markets. The intent is not to teach you to be an expert ***broker*** or ***portfolio manager***, but rather to help you understand what these individuals and others do as they perform their roles in the markets. We begin with an overview that describes the trading process, which gives you enough information to understand the balance of the book.

Following the overview is a brief historical background that provides context for our exploration of the trading markets. The main substance begins with Part 1. If you are generally familiar with the trading markets and how they evolved, you might want to skip the overview and history.