



STIGUM'S MONEY MARKET

THE
INVESTMENT
CLASSIC

FOURTH
EDITION

THE
LEADING
NAME ON
WALL STREET
FOR TODAY'S
MONEY MANAGERS

MARCIA STIGUM
ANTHONY CRESCENZI

STIGUM'S MONEY MARKET

F O U R T H E D I T I O N

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*To the many market participants who gave, with
grace and enthusiasm, their time that I might
write this story*

Marcia Stigum

*To all the survivors, who despite obstacles and challenges in
their daily lives, each day find the inner strength to endure
and to excel*

*To my beautiful wife, Cynthia, and our enchanting daughters,
Brittany, Victoria, and Isabella*

*To my nurturing parents, Anita and Joseph, my brother Joseph
and my sisters Theresa, Gina, and Nicole, to all of my family and
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Anthony Crescenzi

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This book is a comprehensive guide to the money market—U.S. and Eurodollar. It is intended for people working in banks, in dealerships, and in other financial institutions; for people running liquidity portfolios; and for accountants, lawyers, students, and others who have an interest in the markets discussed.

The book begins with an introduction to what goes on in fixed-income financial markets—financial intermediation and money creation—plus an introduction to how fixed-income securities work, including various concepts of yield, the meaning and importance of the yield curve and the messages embedded in it, and the concepts and calculation of duration and convexity.

Next, the book analyzes the operations (domestic and Eurodollar) of money center banks, of money market dealers and brokers, of the Federal Reserve, and of managers of liquidity portfolios. In this section we detail the transformation of the industry from its bygone Glass-Steagall days. Then, with this background, the book turns to the individual markets that comprise the money market. For each such market—fed funds to interest-rate swaps—the book describes the instrument traded; its risks, liquidity, and return offered; its uses; and how the market for it is made by money market brokers, dealers, and investors. We also show how these markets have evolved to become what they are today.

Inevitably, the book presents an extensive description of the Eurodollar market; today, the Eurodollar market is always either an extension of or integrally related to the U.S. money market. Also, the interconnections between these two markets keep growing; for example, U.S. banks now obtain more of their funding from the Eurodollar market than they do from the fed funds market. Moreover, the transatlantic traffic in ideas, products, and trading techniques isn't unidirectional: forward rate agreements (FRAs), first traded in London, are now actively traded in New York, and London continues to be a magnet for cross-border flows.

Hallmarks of the money market are growth, change, and innovation. The money market, which seemed large and sophisticated when the first edition of this book was published in 1978, is, by 2006 standards, small

and a touch primitive. For example, in recent years a vast market for credit derivatives has been created, and we are left wondering: Why didn't someone see the possibilities earlier? This is a question that will likely be asked each time a new product or way of trading is introduced. Also, there is now much greater connectivity than ever before between brokers, banks, and investors, and in the payments systems that settle literally trillions of dollars of daily transactions in cash and securities. The commercial paper market, now twice the size of the Treasury bill market, is today used for a multitude of purposes and in a multitude of ways undreamed of in the past. And then there's a huge medium-term note (MTN) market, which, belying its name, has replaced a chunk of the traditional bond market. Bigger in impact has been the widespread use of derivatives, which is helping many money market participants to control risks. Banks, for example, actively use derivatives to manage their asset-liability risks.

No small part of the changes that have occurred and are occurring in the money market reflects the growing trend toward the deregulation and consolidation of national capital markets and the consequent globalization of these markets. Today, a portfolio manager who wants a government obligation has a choice of flavors: Treasuries, gilts, Bunds, OATs (French), or JGBs (Japanese government bonds) to name the most obvious. Some of the less obvious include obligations sold by entrants whose securities are now seen as more acceptable to own as an asset class. These include Russia, Latin America, and emerging Asia. Today, a corporate treasurer, a sovereign, or a global bank that needs to borrow has an array of choices: the institution can pick an advantageous currency and an advantageous rate, fixed or floating, at which to borrow and then swap the debt thus created for debt, fixed-rate or floating-rate, in the currency of its choice. And, of course, once the institution has learned to swap liabilities, swapping assets is the logical next step. Finally, as noted throughout the book, the use of financial futures and other derivatives, including Treasury and Eurodollar futures, has exploded in recent years; futures are used to arbitrage, to hedge, to position, and to just plain trade.

Many readers of this book will be relatively new to the money market. Part One provides background such readers will require for the rest of the text; it answers such questions as: What are the principal instruments in which the market deals? How do the major players in the market operate?

When this book was first written, almost all the material presented was based on interviews with market participants. Rather little was written about the money market, and almost nothing was written about how instruments in it are traded. An obvious reason is that the people most involved in and most expert in the market are action-oriented: they do it, they don't write about it. Much has changed. There is now an abundance of literature available, in part thanks to the 200 Ph.D.s at the Federal Reserve, who produce a large volume of in-depth work on a regular basis. In addition, the effort to harmonize both domestic and global financial systems has led to growth in the amount of research conducted by major organizations such as the Bank for International Settlements, further increasing the pool of available work that practitioners can draw from.

In every field, people develop special terms or give common terms special meanings in order to be able to communicate precisely and rapidly with one another, hence *jargon*. The money market is no exception, and this book uses money market jargon extensively. To aid the reader, each piece of jargon used is defined the first time it appears in the text; also, in the glossary at the end of the book a wide range of money and bond market terms are defined.

We use the pronouns *he* and *she* throughout this book, a change from the third edition of this book when only *he* was used. It is a reflection of our changed times—change itself is a key dynamic of the markets. Mathematical calculations have been kept to a minimum in this book. The reader who'd like to delve deeper into such topics is referred to Stigum's *Money Market Bond Calculations*.

In conclusion, I'd like to thank Alex Edmans from MIT, who authored Chapter 4 and collaborated with his MIT colleague Jack Bao on Chapter 17. I'd like to thank my employers, Jeffrey Miller and Jeffrey Tabak of Miller Tabak + Co., LLC, who have for many years given me the opportunity to explore the markets with great liberty, enabling me to gain insights into the intrigue of Wall Street.

Thanks also to the working men and women of our country. It is their work that is the driving force behind our economy and hence the flow of capital that drives the activities of the financial markets.

Stigum's Money Market became a classic because of the immensely exhaustive work of Marcia Stigum. No other book on its subject matter has come close to covering the ground that Stigum covered. I am honored to have the opportunity to revive this classic.

The now hundreds of people who, for this and previous editions, graciously took the time—often big chunks of it—to talk about what they do, how they do it, and why they do it are thanked in the acknowledgments that follow.

Anthony Crescenzi
New York, New York

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In the earlier editions of *Stigum's Money Market*, Marcia Stigum extended her gratitude in this way:

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To those she thanked, I add a few of my own, but I would also like to especially acknowledge the work of the researchers at the Federal Reserve, where 200 Ph.D.s produce work available to the general public. The Fed's research can be of great value to anyone who endeavors to know more about the markets, the economy, the Fed, the banking sector, and much more. The Fed's work is easily accessed by subject matter via *Fed in Print*, found on the Internet. Excellent research is also available from the Bank for International Settlements, the International Monetary Fund, and the Federal Deposit Insurance Corporation.

The biggest acknowledgment of all goes to Marcia Stigum, whose immensely thorough work has stood the test of time. I am honored to have the opportunity to illuminate the rich content of *Stigum's Money Market*, which had been obscured only by the rapid changes that have occurred in the world of finance since the book's last edition.

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Introduction

The U.S. money market is a huge and significant part of the nation's financial system in which banks and other participants trade more than a trillion dollars every working day. Where those dollars go and the prices at which they are traded affect how the U.S. government finances its debt, how business finances its expansion, and how consumers choose to spend or save. Yet we read and hear little about this market, with most focusing on the intrigue of the stock market and fluctuations in the bond market. The conspiratorially minded might consider the money market's existence intentionally obscured. The reason most people are unaware of the money market is that it is a market that few businesspeople encounter in their daily activities and in which the general public turns to meet its ever-rising expectations on investment returns. Moreover, in an age in which attention spans have shrunk, there seems to be too little glamour in the money market to keep people tuned in to it.

The money market is a wholesale market for low-risk, highly liquid, short-term IOUs. It is a market for various sorts of debt securities rather than equities. The stock in trade of the market includes a large chunk of the U.S. Treasury's debt and federal agency securities, commercial paper, corporate securities, mortgage-backed securities, municipal securities, negotiable bank certificates of deposit, bank deposit notes, bankers' acceptances, and short-term participations in bank loans. Within the confines of the money market each day, banks—domestic and foreign—actively trade huge blocks and billions of dollars of federal funds and Eurodollars, the two main sources of overnight funds and the tools by which the Fed transmits its monetary policies. In addition, banks and nonbank dealers

are each day the recipients of billions of dollars of secured loans through what is called the “repo market,” which is now several trillion dollars in size. Today, a major feature of the money market is the derivatives market, where market participants go to hedge their risks and place bets associated with the gyrations in interest rates.

The heart of the activity in the money market occurs in the trading rooms of dealers and brokers of money market instruments, although increasingly the activity is occurring in cyberspace, over the Internet. During the time the market is open, these trading rooms are characterized by a frenzy of activity. Each trader or broker sits in front of a battery of direct phone lines that are linked to other dealers, brokers, and customers. Few phones ever ring, they just blink at a pace that makes, especially in the brokers’ market, for some of the shortest phone calls ever recorded. The Internet has reduced the need to transact over the phone, but with trading volume having increased dramatically, trading rooms seem as frenetic as ever, and dealing rooms are anything but quiet. Dealers and brokers know only one way to hang up on a direct-line phone; they BANG the off button. And the more hectic things get, the harder they bang. Banging phones like drums in a band beat the rhythm of the noise generated in a trading room. Almost drowning that banging out at times is the constant shouting of quotes and tidbits of information.

Unless one spends a lot of time in trading rooms, it’s hard to get a feel for what is going on amid all this hectic activity. Even listening in on phones is not very enlightening. One learns quickly that dealers and brokers often swear (it’s said to lessen the tension), but the rest of their conversation is unintelligible to the uninitiated. Money market people have their own jargon, and until one learns it, it is not easy to understand them. Luckily, this divide has crumbled a bit over the years, thanks to the information age and increases in market transparency and accessibility, even to the smallest of investors.

Once adjusted to their jargon and the speed at which traders converse, one observes that they are making huge trades—\$20 million, \$200 million, \$1 billion—at the snap of a finger. Moreover, nobody seems to be particularly awed or even impressed by the size of the figures. A fed funds broker asked to obtain \$100 million in overnight money for a bank might—nonchalant about the size of the trade—reply, “The buck’s yours from the San Fran Home Loan Bank,” slam down the phone, and take another call. Fed funds brokers earn less than \$1 per \$1 million on overnight funds, so it takes a lot of trades to pay the overhead and let everyone in the shop

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