

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
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Anthony Crescenzi

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C O N T E N T S

PREFACE xvii

ACKNOWLEDGMENTS xxi

Chapter 1

Introduction 1

PART 1

SOME FUNDAMENTALS

Chapter 2

Funds Flows, Banks, and Money Creation 9

Funds Flows in the U.S. Capital Market 9

Financial Intermediaries 15

Banks, a Special Intermediary 19

The Federal Reserve's Role 21

Extending the Fed's Reach 27

Review in Brief 34

Chapter 3

The Instruments in Brief 37

Dealers and Brokers 37

U.S. Treasury Securities 38

Federal Agency Securities 43

Federal Funds 45

Repos and Reverses 47

Eurodollars 49

FRAs 51

Commercial Paper 51

Interest-Rate Swaps 53

Options 56

Certificates of Deposit and Deposit Notes 57

Bankers' Acceptances	61
Loan Participations	63
Medium-Term Notes	64
Municipal Notes	65
Mortgage-Backed, Pass-Through Securities	67
Review in Brief	69

Chapter 4**Bond Valuation 71**

Zero-Coupon Bonds	71
Coupon-Bearing Bonds	73
Bond Equivalent Yield	74
The Yield Curve	75
Fluctuations in a Bond's Price	77
Price Volatility	79
Advanced Topics	81

Chapter 5**Duration and Convexity 85**

Duration	85
Macaulay's Duration	89
Modified Duration	93
The Yield Value of $1/32$	95
The Price Value of an 01	97
Immunizing a Portfolio	100
Convexity	103
Review in Brief	106

PART 2**THE MAJOR PLAYERS**

Chapter 6**The Banks: Domestic Operations 111**

A Money Market Bank	112
Managing a Money Market Bank	118
Today's Changed Environment	125

Banking as Four Businesses	135
The Business of Trading	137
Corporate Finance	144
The Domestic Treasury	158
The Distribution Business	182
Bank Capital Adequacy	183
Bank Regulation	186
Industrial Loan Corporations	189
Bank Holding Companies	189
Review in Brief	194
Appendix to Chapter 6: The Banking Acts That Matter	198

Chapter 7

The Banks: Eurodollar Operations 209

Eurodollar Transactions in T-Accounts	209
A Eurodollar Loan	213
A Eurodollar Placement with a Foreign Bank	216
History of the Market	218
Eurocurrency Deposits	222
The Market Today	223
Eurodollar Banking Centers	230
The Preeminence of London	230
Size of the Market	233
The Major Players: Global Banks	236
Overview of Bank Euro Operations	238
LIBOR, LIBID, LIMEAN	240
Running a Bank's Eurobook	240
The Interbank Placement Market	242
The Eurodollar Time-Deposit Market	242
Risks and Limits	243
Medium-Term Money	244
Euro Lending	245
Eurodollar Bank Loans	245
Syndicated Loans	247
The Eurobond Market	256
Running a Eurodollar Book	259

The Role of Eurodollar CDs	262
The Eurodollar Placement Book	263
The Use of Off-Balance Sheet Items	275
FRAs	275
Interest-Rate Swaps	277
Off-Balance Sheet Items as Substitutes	280
Eurocurrency Swaps	281
Bank of England Regulation	284
Sovereign Risk in London	290
Lender of Last Resort	291
Foreign Bank Operations in the United States	292
International Banking Facilities (IBFs)	294
Review in Brief	298

Chapter 8

The Treasury and the Federal Agencies 301

U.S. Government Securities	301
Volume Outstanding	303
Treasury Debt Management: Some History	305
Treasury Debt Management Today	316
Federally Sponsored Agencies Issuing Securities	330
The Federal Financing Bank	332
Agency Securities	333
Tale of a Failed Agency: FSLIC and the Nation's S&L Crisis	334
Farm Credit Agencies	339
Federal Agency Securities	340
Review in Brief	341

Chapter 9

Don't Fight the Fed! The Powerful Role of the Federal Reserve 343

The Fed's Raison d'Etre: Financial Stability across the Land	343
Political Pressures on the Fed Are More Fiction Than Fact	346
Implementing Monetary Policy	347
The Discount Window	360
Reserve Requirements	370
Some History	371
The Monetarist Experiment: 1979 to 1982	375

Implementing Monetary Policy Today	380
The Fed's Impact on the Bond Market	385
Transmission Effects of Monetary Policy	393
Structure of the Fed	396
Don't Fight the Fed; Follow It	398
The Art of Fed Watching	404
Review in Brief	408

Chapter 10

The Market Makers: Dealers and Others 411

The Dealers	411
Sources of Dealer Profits	414
Hedging	420
Dealer Financing and Carry	421
A Dealer's Book	424
Shorting	430
Repo and Reverse Book	431
Arbitrages	432
Tails	437
Relative Value	440
Technical Analysis	441
Running a Dealer Operation	442
The Globalization of Investing	447
The Clearing Banks	449
Communications	451
Review in Brief	453

Chapter 11

The Investors: Running a Short-Term Portfolio 455

Contrast of a Portfolio Manager with a Dealer	456
The Parameters	456
Managing a Liquidity Portfolio	458
The Street's View of the Way It's Done	478
The Contrarian View	483
Trends in Managing Corporate Liquidity Portfolios	484
Let's See the Numbers, Please	486
Review in Brief	487

PART 3

THE MARKETS

Chapter 12

The Federal Funds Market 491

- Settling with the Fed 491
- History of the Market 499
- Running a Fed Funds Desk 507
- The Brokers' Market 513
- Wednesday Close 523
- The Former Forward Market 529
- Term Fed Funds 529
- Review in Brief 529

Chapter 13

The Repo and Reverse Markets 531

- Definitions and Some Jargon 532
- Credit Risk and Margin 534
- Growth of the Market 536
- The Overnight Repo Rate 540
- Open Repo 542
- Term Repo 543
- General Collateral Finance (GCF) Repo 544
- The Yield Curve in Repo 546
- Brokering of Repo 546
- The Forward Market in Repo 548
- Repos in Fed Open Market Operations 548
- MSPs 549
- The Reverse Market 549
- The Specific Issues Market 552
- Borrowing Versus Reversing in Securities 555
- Matched Book 557
- Trading Collateral—Mismatching the Book 561
- Fed Use of Repos and Reverses Today 565
- Regulatory Reforms Affecting Repos 571
- Repo as a Gauge of Dealer Leverage 576
- Review in Brief 578

Chapter 14

Treasury and Federal Agency Securities 581

An Active Market Indeed	583
Some History	585
Bills, Notes, and Bonds	587
Inflation-Indexed Securities	590
Book-Entry Securities	593
Primary Dealers	595
Auction Procedures	599
The Brokers	604
The Internet and Other Forms of Electronic Trading	613
The Bill Market	617
Treasury Notes	629
Bonds	645
The Yield Curve: A Crystal Ball?	648
Zero-Coupon Bonds	664
The Zoo	665
STRIPS	666
Federal Agency Securities	672
Review in Brief	690

Chapter 15

Financial Futures: Bills, Eurodollars, and Fed Funds 693

Futures versus Forward Contracts	693
Utility of Futures to Investors	695
Forward Transactions in the Money Market	696
Financial Futures	698
Regulation	701
Futures Basics	702
Treasury Bills	712
The Eurodollar Futures Contract	726
Federal Funds Futures	738
Review in Brief	743

Chapter 16

Treasury Futures 745

- The Contract 746
- Delivery Provisions 746
- The Invoice Price 748
- Basis 753
- Value (or Carry-Adjusted) Basis 756
- Convergence of Cash and Futures Prices 757
- The Cheapest to Deliver 764
- Hedging with Bond Futures 767
- Basis Trades 769
- A Calendar Spread 777
- The NOB Trade 779
- The TUT Trade 783
- Using Futures to Gather Market Intelligence 784
- Review in Brief 790

Chapter 17

Financial Options 793

- Call Options 793
- Put Options 796
- Combining Options 800
- Options Trading 801
- The Value of an Option 802
- Basic Uses of Options 802
- Valuing an Option 804
- What Do Options Prices Depend On? A Discussion of the Greeks 810
- A Volatility Example 815
- Further Discussion of Volatility 817
- Shortcomings of Black-Scholes 819
- Appendix to Chapter 17: The Black-Scholes Formula 820
- Suggested Readings 821

Chapter 18

Eurodollars: Cash Time Deposits and FRAs 823

- A Global Market 823
- FRAs 831

The Brokers	839
Tiering	848
Settling through CHIPS	850
Cross-Currency Swaps—The Mechanics	855
Arbitrages between the U.S. Markets and Euromarkets	860
Review in Brief	866

Chapter 19**Interest-Rate Swaps 869**

Some History	869
A Coupon Swap	873
Evolution of the Dollar Interest-Rate-Swap Market	876
Dealers and Brokers	882
Dealer Books in Swaps	884
Money Market Swaps	893
Swaptions	903
Cross-Currency Swaps	904
The Swaps Curve	906
Counterparty Risk	909
Convergence Trading	910
End Users of Swaps	910
Sizing Up the Swaps Market	912
Swapping Swaps	912
Review in Brief	919

Chapter 20**Certificates of Deposit 923**

The Instrument	924
Yankee CDs	936
Eurodollar CDs	937
Review in Brief	940

Chapter 21**Bankers' Acceptances 943**

History of Bankers' Acceptances	943
The Instrument	945

Eligibility Requirements	950
Bank Pricing and Sale	954
Market, Stock in Trade	956
Changes in How the Market Is Dealt	957
The Shrinkage of the BA Market	958
The BA Market Today	959
Tiering	962
Risks in the BA Market	962
The Financing of Dealer Positions in BAs	965
Review in Brief	965

Chapter 22

The Commercial Paper Market 967

Investors in Commercial Paper	969
Issuers of Commercial Paper	970
Bank Lines	976
Risk and Ratings	980
Types of Commercial Paper Sold	985
Dealer Paper	987
Arbitrage in the Domestic Commercial Paper Market	997
Direct Issue Paper	998
MTNs (Medium-Term Notes)	1003
Commercial Paper as an Economic Indicator	1003
Rate Bias at Year-End for Commercial Paper	1006
Foreign-Denominated Commercial Paper	1007
Euro Commercial Paper	1008
History of the Euro Commercial Paper Market	1009
Non-U.S. Commercial Paper Markets	1013
Review in Brief	1014

Chapter 23

Bank Sales of Loan Participations 1017

Some History	1017
Bank Chances to Lend Today	1021
LBO Loans	1023
Selling Short-Term, High-Quality Loans	1023

Bank Sales of Asset-Backed Paper	1030
LBO Loan Participations	1033
Review in Brief	1040

Chapter 24**Medium-Term Notes 1043**

The Beginnings	1043
MTNs: The Product	1046
Distribution of New Issues	1047
Latent Investor Demand	1048
Latent Borrower Demand	1050
Growth of the Market	1050
Yields on MTNs	1053
Bank Deposit Notes	1054
Dealers as Market Makers	1057
MTNs versus Corporate Bonds	1060
Euro MTNs	1062
Review in Brief	1064

Chapter 25**Municipal Notes 1065**

Types of Muni Short-Term Paper	1066
Short-Term, Fixed-Rate Notes	1066
Variable-Rate Demand Obligations	1070
Taxation	1075
Credit Risk and Ratings	1079
Investors	1083
Yearly Issuance and Amount Outstanding	1088
The New-Issue Market	1088
The Secondary Market	1094
Review in Brief	1096
Appendix to Chapter 25	1098

Chapter 26**Money Market Funds 1099**

Raison d'Être	1100
How They Work	1101

Growth of Money Funds	1107
Tax-Exempt Money Funds	1111
Management of a Money-Fund Portfolio	1114
Consumers' Uses of Money Funds	1116
Institutional Funds	1117
Review in Brief	1120
GLOSSARY	1123
INDEX	1149

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

