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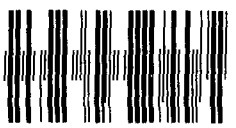
Briefing Report to the Chairman, Subcommittee on Domestic Monetary Policy, Committee on Banking, Finance and Urban Affairs, House of Representatives

August 1986

U.S. TREASURY SECURITIES

The Market's Structure, Risks, and Regulation



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The Honorable Walter E. Fauntroy
Chairman, Subcommittee on Domestic
Monetary Policy
Committee on Banking, Finance and
Urban Affairs
House of Representatives

Dear Mr. Chairman:

This report is the first of several responding to your request that GAO examine the operation of the government securities market. As agreed with you and your staff, this report develops a base of knowledge about market operations to assist the Congress and the general public in understanding this necessary and complex market. Such an understanding is important, in our view, given the current debate over whether the government's role in this market needs to be changed. Future reports to complete your request will evaluate market operations, in particular how well the Federal Reserve System oversees the market.

The report provides a general description of the government securities market, its risks, and its present regulatory structure. The appendixes provide more detail on specific matters such as the growth and the composition of the debt, the control of risk by dealers, the mechanics and use of repurchase agreements, the workings of the futures and options markets, a summary of recent failures, and other selected topics.

BRIEF BACKGROUND ABOUT THE MARKET

The safety, soundness, and efficiency of the U.S. government securities market is of vital concern to the federal government and the public. The U.S. Treasury raised almost $1.2 trillion in this market in 1985 to finance the budget deficit and refinance existing debt; and federal agencies raised billions of dollars more for housing, farm credit, and other activities. The emphasis of this report is on the market for U.S. Treasury securities, the largest component of the market for all government securities. The structure of the market for Treasury securities is complex, involving extensive trading by participants in both the cash and derivative markets.

As fiscal agent for the Treasury, the Federal Reserve System sells securities at auction on a regular schedule throughout the year. The securities range in maturity from 90-day bills to 30-year bonds. The federal government not only sells securities, but also operates

several key systems upon which the Treasury securities market depends. These computerized systems for recording and transferring ownership of securities and for transferring funds involved in securities trading are important for the efficiency as well as the safety of the market.

Once auctioned, Treasury securities are then widely traded in secondary markets, with volume on a typical day in 1985 exceeding $75 billion. There is no centralized marketplace for this trading. Dealers and brokers, who arrange dealers' trades by telephone, settle principally through electronic transfers of funds and securities. Thirty-six dealers have been given the designation "primary dealer" by the Federal Reserve and purchase over half of the Treasury securities sold. These dealers, also used by the Federal Reserve Bank of New York in the conduct of monetary policy, buy and sell securities for themselves and their customers (usually institutional investors such as financial institutions, insurance companies or pension funds). "Primary" dealers account for an estimated 75 percent of market trading volume, with "secondary" dealers accounting for the other 25 percent.

Several markets based on government securities (called "derivative markets") have developed in recent years and are used extensively. They involve commitments or options to buy or sell government securities at some future time. Several of these markets have grown out of the commodity futures market.

A principal risk faced by all investors in the Treasury securities market is changes in the market prices of securities after they have been initially sold by the Treasury. Price changes can result in capital losses to investors who must resell the securities to honor contractual obligations or for other reasons. The most important factor influencing Treasury securities price changes is interest rates. When interest rates rise, the market price of a Treasury security falls, and vice-versa. Major dealers trade extensively in both the secondary and derivative markets to control their overall exposure to losses when interest rates change.

The regulatory structure that has evolved over the years for U.S. Treasury securities is also complex. Nine federal agencies are involved in regulating market participants or in operating systems on which the market depends. Principal areas of involvement are (1) Treasury and Federal Reserve operation of key systems involved in selling, recording ownership, and transferring securities; (2) supervision of dealers, brokers, and clearing agents by federal bank examiners and the Securities and Exchange Commission (SEC); (3) Federal Reserve oversight of primary dealers; (4) supervision of exchanges for the sale of futures

and options contracts by the Commodity Futures Trading Commission (CFTC) and the SEC; and (5) supervision of the activities of major customers—banks, savings institutions, and pension funds. Despite the extensive presence of federal regulatory and supervisory activities, dealers and brokers which specialize in Treasury securities are exempted from regulation by law. It is estimated that there could be as many as 200 to 300 unregulated secondary dealers.

While the Treasury securities market functions well, since 1982 investors have lost an estimated $900 million due to the failure of several dealers that traded in government securities and sold them to the public. Dealer failures have come from the ranks of the unregulated firms. Legislation currently being considered by Congress would bring all of these firms within a basic framework that involves registration and disclosure, supervision, and standards for integrity and capitalization.

Additional regulation provided by the proposed legislation could reduce the opportunities for firms to operate fraudulently in this market. Rules for disclosure may help investors make more informed decisions, and capital standards may reduce the chances that firms will fail. However, investors will still be exposed to risks associated with changes in securities prices and with the possible bankruptcy of a trading partner. Regulation cannot be expected to eliminate dealer failures from this market; failures occur even among the most highly regulated financial institutions—banks, other depository institutions, and securities firms registered with the SEC.

We provided copies of this briefing report to the Federal Reserve System, Treasury, SEC, CFTC, Public Securities Association, Securities Industry Association, and Dealer Bank Association to obtain their official comments. In general, the comments received verified the accuracy of the study.

We are sending copies of this report to the Chairman of the Board of Governors of the Federal Reserve System, the Secretary of the Treasury, the Chairman of the Securities and Exchange Commission, the Chairman of the Commodity Futures Trading Commission, and interested members and committees of the Congress.

Sincerely yours,

Craig A. Simmons
Senior Associate Director

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TABLES

ABBREVIATIONS

AICPA	American Institute of Certified Public Accountants
AMEX	American Stock Exchange, Inc.
CBO	Congressional Budget Office
CD	Certificate of Deposit
CFTC	Commodity Futures Trading Commission
FCM	Futures Commission Merchant
FDIC	Federal Deposit Insurance Corporation
FHLBB	Federal Home Loan Bank Board
FNMA	Federal National Mortgage Association
Freddie Mac	Federal Home Loan Mortgage Corporation
FRB	Federal Reserve Board
FSLIC	Federal Savings and Loan Insurance Corporation
GAO	General Accounting Office

GFOA	Government Finance Officers Association
GNMA	Government National Mortgage Association
GNP	Gross National Product
GSI	Government Securities, Inc.
NASD	National Association of Securities Dealers, Inc.
NCUA	National Credit Union Administration
NFA	National Futures Association
NMMSI	National Money Market Securities, Inc.
NYSE	New York Stock Exchange, Inc.
OCC	Office of the Comptroller of the Currency
PSA	Public Securities Association
Repo	repurchase agreement
SEC	Securities and Exchange Commission
S&L	Savings and Loan Association
SOMA	System Open Market Account
SRO	Self-Regulatory Organization

CHAPTER 1

INTRODUCTION

Trillions of dollars of transactions take place each year in the market for U.S. Treasury securities--a complex market, crucial for financing federal deficits and conducting monetary policy. Although the credit quality of Treasury securities is sound, some investors have lost money because of fraudulent activity by some firms that buy and sell the securities.

We were asked by the House Subcommittee on Domestic Monetary Policy to analyze how the market for U.S. government securities operates and whether changes are needed to make the market safer, more efficient, or more in step with changes in technology and other developments occurring in financial markets. As an initial step toward fulfilling the request, this briefing report concentrates on the market for Treasury securities--the most important segment of the broader market for all securities issued or guaranteed by an agency of the U.S. government.[1] The report describes the components of the Treasury securities market, their risks, and how they are regulated.

THE NATURE OF THE TREASURY SECURITIES MARKET

The Treasury securities market plays a crucial role in the financial management of the government and in the entire financial sector of the economy. If the government did not need to borrow much money, or if it borrowed only infrequently, the market for Treasury securities would not be of such importance. Borrowing to finance deficits is, however, a prominent feature of current government fiscal policy. At the end of April 1986, the national debt stood at $2.0 trillion. Because of the need to raise almost $900 billion in new funds since 1980 and to refinance trillions more in maturing debt, the U.S. government has been the major and most frequent issuer of debt securities in the market.

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[1]In addition to U.S. Treasury securities, the government securities market includes securities of government or government-sponsored agencies. These securities are not direct obligations of the Treasury but can involve some form of federal sponsorship or guarantees.

Role of the Treasury securities market in the financial management of the federal government

The Treasury securities market performs four essential functions for the federal government. First, it is the means through which the government finances current deficits. The Treasury sells securities to make up for any shortfall between revenues and outlays that occurs as a result of actions taken by Congress and the Administration. Second, the market enables the government to refinance maturing debt. Third, the market is the principal means through which the Federal Reserve System carries out monetary policy. With the buying and selling of Treasury securities, the Federal Reserve is able to influence the growth of the money supply and/or changes in the market interest rates and thus to influence the direction of economic activity. Fourth, the federal government uses the market to raise short-term funds (cash management bills) so that it can carry out its day-to-day cash management activities.

In 1985, the Treasury reported $132.6 billion in net interest payments on the public debt. In 1986 the Congressional Budget Office (CBO) estimated that by 1991 interest payments would rise to $160.3 billion and constitute 12.8 percent of total federal outlays. Although the Balanced Budget and Deficit Control Act of 1985 (Public Law 99-177) may reduce interest costs, the cost of financing the debt has become a major factor contributing to the size of future deficits.[2]

The government sells marketable and non-marketable debt to finance its borrowing needs. Most Treasury debt is marketable debt which the Treasury sells to the public at auction. Since the mid-1960s, the Treasury has been offering its securities to the market on a regularized schedule not directly affected by prevailing interest rates. Implementing this strategy, which is intended to help stabilize markets by reducing uncertainty about Treasury funding needs, involves weekly offerings of short-term obligations of less than 1 year, monthly offerings of obligations of 1 and 2 years, and quarterly offerings of intermediate-term notes (up to 10 years) and bonds (up to 30 years). At the end of 1985, marketable debt accounted for about 74 percent of total interest-bearing debt. Non-marketable debt

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[2]Appendix II contains a more detailed discussion on growth and composition of the federal debt.

does not enter into the Treasury securities market.[3] During 1985, the Treasury raised over $1.1 trillion in marketable debt to provide new funds and to refinance existing debt.

Role of Treasury securities in the economy

From the point of view of the investing public, the first point of contact with the government securities market is with the hundreds of government securities dealers who buy and sell Treasury and agency securities. The volume of trading in U.S. Treasury securities suggests that this market plays a unique and critical role in the U.S. financial system. This market contributes to the stability and liquidity of the financial system as a whole. The market for U.S. Treasury securities is the single most important market for determining the structure

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[3]There are essentially two types of non-marketable debt. One consists of debt "sold" to other government funds such as Social Security and the reserves of the Federal Deposit Insurance Corporation (FDIC). These securities are usually held to maturity, but if they are not, depending on the security, they are redeemed by the Treasury either at par or at the prevailing value of comparable securities traded in public markets. The rate of interest on non-marketable Treasury securities is set by Treasury in relation to rates prevailing at the time the securities are issued.

The other type of non-marketable debt is sold to the private sector, state and local governments, and foreign governments. Savings bonds sold to the public are included in this classification. If held 5 years or more, savings bonds now pay interest rates equal to 85 percent of the average rate of 5 year marketable securities. If surrendered before maturity, savings bonds are redeemed by the government with no loss of principal to the investor. Non-marketable debt, which pays lower interest rates than marketable debt, is also sold to state and local governments primarily for the investment of proceeds of tax-exempt bond issues for advance refundings that would otherwise not be in compliance with the anti-arbitrage provisions of the tax code.

of interest rates throughout the economy.[4] The functions played by Treasury and other U.S. government securities in the economy were summarized this way in a recent congressional report:

> "Financial institutions, businesses, individuals, foreigners, and federal, state, and local government agencies all view short term government securities as "near money," while long term government securities provide portfolio balance for risk-averse investors.
>
> The fact that virtually all sectors of the financial system and the economy as a whole participate in the government securities market contributes to its breadth and depth."[5]

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[4]One important aspect of the Treasury market is its arbitrage function--the simultaneous purchase of securities in one market and their sale in another. Changes in monetary or fiscal policy will set up expectations of changes in interest rates. Actions by the dealers and other market participants will then transmit these expectations up and down the Treasury security yield curve, changing its shape as well as the overall level of interest rates. Then, through arbitrage between the market in Treasury securities and the rest of the debt and equity markets, the flow of savings is directed to the most attractive investments. The Treasury securities market is thus one of the principal mechanisms by which changes in the interest rate structure rapidly adjust the flow of savings into investment in response to the demands of borrowers and lenders. It is able to do this because the Treasury has a larger amount of outstanding debt over a wider range of maturities than any other borrower in the economy. Also, because federal debt or federally guaranteed debt is considered uniquely to have no credit risk, the interest rates paid by the Treasury serve as the standard or point of departure from which the marketplace determines the interest rates to be paid by all other borrowers.

[5]Report of the House Committee on Energy and Commerce to accompany H.R. 2032, the Government Securities Act of 1985, Report 99-258, September 9, 1985, pp. 12-13.

CONGRESSIONAL CONCERNS AND PENDING LEGISLATION

The failure of several government securities dealers since 1982, beginning with the failure of Drysdale Government Securities, Inc., sent shockwaves through financial markets. Local school boards, municipalities, and financial institutions--many of whom apparently thought they had made safe investments--lost millions of dollars. As a result of concerns stemming from the Drysdale failure and of hearings dealing more generally with debt management and market operations, the House Banking Committee's Subcommittee on Domestic Monetary Policy asked us to analyze how the market was working. (See app. I.)

Operational issues about which the Congress has expressed concern include the trading procedures used in the market, the openness of the market to all qualified firms, and the roles of the Federal Reserve System (FRS) and the U.S. Treasury in facilitating efficient marketing and trading of government securities. Operational issues are important because the government sells these securities and directly provides market services such as recording transfers of ownership. The extent of government involvement in this market is thus much greater than in private securities markets in which the government's role is strictly one of an outside regulator.

After we received the Subcommittee's request, additional government securities dealers failed and other market developments occurred, thus reinforcing the Subcommittee's initial concerns and increasing the concerns of others in Congress about the government securities market. The Securities and Exchange Commission (SEC) has indicated that, since 1982, investors have lost about $900 million before recoveries from reduced income taxes, insurance claims, and civil suits, if

any. All of the dealer failures occurred in firms operating outside of the federal regulatory structure.[6]

In December 1985, there were several bills before the Congress designed to provide additional regulation of government securities dealers and brokers. The Government Securities Act of 1985 (H.R. 2032) passed the House of Representatives on September 17, 1985. H.R. 2032 was jointly recommended to the House by the Committee on Energy and Commerce and the Committee on Banking.[7] The bill adopted by the House and its accompanying report identified several aspects of the market relating to trading practices and activities of the Federal Reserve System that were to be studied by GAO and other agencies. These are described in chapter 2. An alternative bill was pending in the Senate, and the Department of the Treasury had developed its own legislative proposal.

These bills all share the common goal of closing gaps in the regulation of the government securities market. They specify that no unregulated dealer or broker can operate in the market, and they define federal agencies' responsibilities regarding supervising individual firms and rulemaking. Rules to be promulgated by the appropriate agency involve procedures for

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[6]The dealer failure with the most dramatic effect on financial markets was that of E.S.M. Government Securities, Inc., which failed in 1985. SEC officials reported that E.S.M.'s failure resulted in more than $300 million in losses to its customers. One of these customers was Ohio's largest state-chartered, privately insured savings bank, Home State Savings Bank; it alone was reported to have lost an estimated $150 million. When it became known that Home State's loss exceeded the reserves of the fund insuring the deposits of this and other state-chartered institutions, the Governor of Ohio ordered all 71 state-chartered, privately insured thrift institutions closed because the institutions did not have sufficient funds on hand to meet the demand for withdrawals by depositors. Institutions and local governments in other states also lost money.

[7]The House Energy and Commerce Committee's Subcommittee on Telecommunications, Consumer Protection and Finance held hearings on H.R. 2032 on June 11, 20, and 26, 1985. The House Banking Committee's Subcommittee on Domestic Monetary Policy held hearings on H.R. 1896 and H.R. 2521 on July 9, 1985.

reducing opportunities for fraud and setting minimum capital requirements intended to make dealers less likely to fail. Differences in the way the bills would place responsibility on the Federal Reserve System, the Securities and Exchange Commission, the Treasury, and self-regulatory organizations are described in chapter 4.

OBJECTIVES, SCOPE, AND METHODOLOGY

In response to the Subcommittee's request, our objective during this phase of our work was to describe the operation and the regulatory structure of the Treasury securities market. This report centers on (1) describing the characteristics of the Treasury securities market and related markets; (2) identifying risks present in the market and implications of these risks for the government and the public; and (3) describing the regulatory framework in which the market operates, including the Federal Reserve's present oversight role.

Tasks we undertook to develop this report included:

(1) reading literature on financial institutions and markets;

(2) reviewing related studies done by GAO, the Federal Reserve System, the Department of the Treasury, the SEC, the Commodity Futures Trading Commission (CTFC), and various nongovernmental bodies;

(3) interviewing officials from the Department of the Treasury, the Federal Reserve System, the SEC, the Federal Home Loan Bank Board, and the CFTC;

(4) interviewing primary and nonprimary government securities dealers and brokers;

(5) interviewing trade association officials of the Public Securities Association (PSA), the Dealer Bank Association (DBA), and the Government Finance Officers Association (GFOA);

(6) interviewing futures exchange officials at the Chicago Board of Trade and Chicago Mercantile Exchange, where the majority of trading in Treasury futures occurs;

(7) reviewing Federal Reserve System procedures, manuals, reports, and related documents;

(8) accessing commercially available data sources for information such as aggregate daily investments, borrowings and financial commitments of primary securities dealers, and selected price and trading volume data in the government securities market;

(9) reviewing data on primary dealers using financial reports submitted to the Federal Reserve Bank of New York, which is responsible for overall surveillance of the market;

(10) reviewing SEC regulations and American Institute of Certified Public Accountants (AICPA) standards relating to government securities accounting; and

(11) identifying the types of risks present in the Treasury securities market.

We also disseminated for public comment a discussion paper entitled "Survey of the Federal Reserve System's Supervision of the Treasury Securities Market" dated October 1984, which in turn was issued by the Subcommittee on Domestic Monetary Policy of the House Committee on Banking, Finance and Urban Affairs (Committee Print 99-2, May 1985). The paper provided brief background information about the Treasury securities market, discussed current public debt management and market issues, and our proposed future work plans. Because of the technical nature of this particular assignment, we distributed the document outside the agency to provide greater understanding of the work we were planning and to elicit comments from interested parties about the subject and our approach to it. The paper was reviewed by the Federal Reserve Bank of New York and Federal Reserve Board staff. We also provided copies to the Department of the Treasury, the SEC, the CFTC, the PSA, dealers and other market participants, academicians, and others. We received many helpful comments, which have been incorporated into this report.

AGENCY COMMENTS

We provided copies of this briefing report to the FRS, Treasury, SEC, CFTC, PSA, Securities Industry Association (SIA) and DBA to obtain their official comments. During the comment period, we met with officials from the FRS, Treasury, SEC, SIA and DBA to obtain their comments and to correct any technical

inaccuracies which may have been included in the original draft. We received letters from the CFTC and the PSA which have been reproduced in their entirety and included in this report as appendixes. In general, the comments received concerning the Treasury securities market verified the accuracy of the study. For example, the PSA noted in its letter that, "The draft report presents a comprehensive description of the U.S. government securities market. We believe it will prove to be an important future source of information on this market."

In some cases, we changed the text or expanded some of the topics at the suggestion of officials' comments. Our response to all written comments formally received is included in the agency comments section (see apps. IX and X). Officials from the Federal Reserve and the Treasury wanted the Federal Reserve's responsibilities as fiscal agent for the Treasury clarified throughout the report. The CFTC suggested that the statistics be updated to 1985 and this has been done when the 1985 statistics have been readily available. In addition, the CFTC and the SEC suggested wording to clarify their respective regulatory roles. The PSA offered a number of clarifications, and in addition provided its observations regarding access to inter-dealer brokers' wires services.

CHAPTER 2

THE STRUCTURE OF THE TREASURY SECURITIES MARKET

The Treasury securities market is comprised of the cash market and the derivative markets. The cash market is one in which outright ownership of particular securities is exchanged for cash or in which securities are pledged as collateral for loans. Derivative markets involve ownership of future rights or obligations of securities.

The components of the market for Treasury securities are summarized in table 2.1 and described in more detail in this section. Where information is available, the table includes the most current volume of transactions.

Table 2.1

Structure of the Treasury Securities Market

Market Component		Annual activity (1985 unless noted)
I. Cash Markets		
A. Debt Auction Market	The Treasury, through the Federal Reserve System (principally the Federal Reserve Bank of New York) acting as the Treasury's fiscal agent, sells new securities to the public to raise new funds and refinance existing debt.	Almost $1.2 trillion debt sold in 1985.
B. Secondary Markets		
1. Outright purchase and sale	Dealers buy and sell securities in an over-the-counter market, with transfers made through clearing banks and the Fedwire network. The market is used by the Federal Reserve for open market conduct of monetary policy.	Over $75 billion average daily transactions (through primary dealers). About $22 billion net purchases by Federal Reserve System in 1985.
2. Repurchase agreements	Dealers obtain financing and securities from and for customers in an over-the-counter market. Also used by the Federal Reserve Open Market Committee for conduct of monetary policy.	About $31 billion on an average daily basis reported by primary dealers. About $8 billion gross purchases and sales on an average daily basis reported by Federal Reserve open market account in 1985.
II. Derivative Markets		
A. When-issued Commitments	Over-the-counter market used by dealers to lock in purchase and sale orders for securities announced but not yet issued—used to take or hedge position risk.	N/A
B. Forward Commitments	Over-the-counter market used by dealers to lock in purchase and sale orders at least 5 days in advance of delivery—used to take or hedge position risk.	Total unknown—$1.3 billion average daily transactions reported by primary dealers.
C. Futures	Exchange market organized by the Chicago Board of Trade and Chicago Mercantile Exchange used by dealers to lock in purchase and sale orders in advance of delivery—used to take or hedge position risk.	46,448,064 contracts. in 1985.
D. Options	Exchange market organized by the American Stock Exchange (for bills and notes) and the Chicago Bond Options Exchange (bonds) used by dealers to purchase the right to buy or sell securities at a given price for a set period of time—a hedging tool.	437,959 contracts in 1985.
E. Options on Futures	Exchange market organized by the Chicago Board of Trade (notes and bonds). Dealers purchase the right to buy or sell futures contracts at a given price for a set period of time.	12,078,408 contracts in 1985.

THE CASH MARKET

To sell marketable public debt, the Treasury, through the 12 Federal Reserve district banks and their branches, acting as fiscal agents for the Treasury, sells securities to the public through a competitive auction process. The Treasury auctions 3- and 6-month Treasury bills to the public each week. Fifty-two week bills are auctioned every 4 weeks. All bills carry a minimum denomination of $10,000. Treasury bills are sold at a discount from face value, and the highest bids in terms of price are accepted.[1] Non-competitive bids may be submitted when the bidder agrees to pay the average issuance price computed on the basis of the competitive bids accepted at the auction. Non-competitive bids are limited to $1,000,000 per individual bidder.

The Federal Reserve banks remit the proceeds from the auction to the Treasury by crediting Treasury accounts they hold. At maturity, bills are redeemed at their face value. Compared to the other district banks, the Federal Reserve Bank of New York has by far the largest volume of cash market transactions.

The Treasury also auctions Treasury notes and bonds, which pay interest semi-annually and mature in 2 to 30 years. Notes and bonds are sold on a regular schedule, with particulars about each issue announced in advance to the public. Bids are made in terms of the "yield-to-maturity." The minimum denomination for notes and bonds is usually $1,000, except for notes with maturities of less than 4 years. These notes are sold in $5,000 denominations. As with Treasury bills, bids for notes and bonds may also be non-competitive. Non-competitive bids are awarded in amounts of up to $1 million at the average yield for accepted competitive bids.

In 1985, the Treasury raised a total of almost $1.2 trillion from the auction market to finance the budget deficit and to refinance maturing debt. The totals for the years 1980 through 1985 are shown in table 2.2.

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[1] If an investor's bid is accepted, that investor pays the price bid. Thus, not everyone pays the same price. Because the Treasury does not remit interest payments on Treasury bills, the amount of interest earned by the investor is the difference between the amount paid for the bill and the bill's face value, which is paid in full by the Treasury at maturity.

Table 2.2

Funds Raised in Treasury Auctions, Fiscal Years 1980-85

	New funds raised	Refinancing of maturing debt	Total
	- - - - - - - (billions) - - - - - - - -		
1980	$ 83.6	$481.4	$ 565.0
1981	90.6	580.6	671.2
1982	143.1	655.5	798.6
1983	202.3	783.2	985.6
1984	164.8	861.5	1,026.3
1985	173.2	986.4	1,159.6

Source: Department of the Treasury.

The Treasury neither purchases advertising for its marketable securities nor pays commissions to dealers who make markets in Treasury securities. Dealers hope to cover their expenses by the difference between the price they pay to the Treasury and the price they receive from resales to their customers. The Treasury and the Federal Reserve do incur administrative costs in issuing, processing, and redeeming public debt. These costs total about $100 million per year.

The Federal Reserve Bank of New York has designated a group of securities dealers and commercial banks as primary dealers. These are dealers with whom the Federal Reserve may have a business relationship, and they are required to demonstrate market-making capacity, creditworthiness, and other factors that indicate fitness for this business relationship. The Federal Reserve uses them exclusively in its purchases and sales of securities for monetary policy purposes. At the time the report was written, 36 dealers met the Federal Reserve's criteria for being designated as primary dealers. (See app. IV for a list of the primary dealers.) Primary dealers purchase a large portion (about 55 percent) of the Treasury securities sold at auction. They are also active in making markets in the over-the-counter[2] secondary markets for Treasury and federal agency securities. To make markets, dealers stand ready to buy and sell securities at their quoted bid and offered prices. Dealers' customers are generally other primary dealers; other dealers in government

[2]"Over-the-counter" refers to the methods of trading where securities are not bought and sold on a recognized securities exchange.

securities (known as non-primary dealers); financial institutions (banks, insurance companies, pension funds); and other large investors, such as corporations and state and local governments.

The Federal Reserve uses the secondary market for the conduct of monetary policy. For the System Open Market Account (SOMA), an account in which the Federal Reserve holds Treasury securities, the Open Market Desk of the Federal Reserve Bank of New York buys or sells securities outright or enters into repurchase agreements. SOMA transactions for the years 1980 through 1985 are summarized in table 2.3.

Table 2.3

Federal Reserve Open Market Transactions in U.S. Government Securities, 1980-85

	Outright sales or purchases			Repurchase agreements[a]		Matched Transactions[a]	
	Purchases	Sales	Redemptions	Gross purchases	Gross sales	Gross sales	Gross purchases
	(billions)						
1980	$12.2	$7.3	$3.4	$113.9	$113.0	$674.0	$675.5
1981	16.7	6.8	1.8	79.9	78.7	589.3	589.6
1982	19.9	8.4	3.0	130.8	130.3	543.8	543.2
1983	22.5	3.4	2.5	106.0	108.3	578.6	576.9
1984	23.8	8.9	7.7	127.9	127.7	809.0	810.4
1985	26.5	4.2	3.5	134.3	132.4	866.2	866.0

[a]When the Federal Reserve makes a repurchase agreement with a government securities dealer, the Federal Reserve buys a security for immediate delivery with an agreement to sell the security back at the same price by a specific date (usually within 15 days) and receives interest from the dealer at a specified rate. This arrangement allows the Federal Reserve to temporarily inject cash reserves into the banking system to meet a temporary need and to withdraw these reserves as soon as that need has passed. Matched transactions are the reverse of repurchase agreements and are used to temporarily withdraw reserves from the banking system.

Source: Federal Reserve Bank of New York.

The following paragraphs briefly describe several of the key participants in the cash market, including the primary dealers, non-primary dealers, brokers, clearing agents, the Treasury, and the Federal Reserve System.

Table 2.4 shows the number of primary dealers and their average daily transaction volume in U.S. Treasury and federal agency securities in 1970 and 1975 and from 1980 through 1985.

Table 2.4

Number of Primary Dealers and Their Average Daily Transactions[a]

Year ended	Dealers	Treasury securities		Federal agency securities	Total
		Bills	Notes and bonds		
		----------(millions)----------			
1970	20	b	b	$ 463	$ 2,976
1975	29	$ 3,886	$ 2,130	1,049	7,065
1980	34	11,227	6,705	3,102	21,034
1981	36	14,649	9,875	3,291	27,815
1982	36	18,392	13,841	4,134	36,367
1983	37	22,393	19,742	5,576	47,711
1984	36	26,035	26,743	7,846	60,624
1985	36	32,898	42,430	11,640	86,968

[a]Transactions are reported at par value of securities and exclude repurchase agreements and forward transactions. Purchases and sales are added together so the purchase and sale of the same $1 million security would be reflected as $2 million in transaction volume.

[b]Transactions in bills, notes, and bonds totaled $2,513 million in 1970.

Source: Federal Reserve Bank of New York.

The transaction volume represents the market-making activities of the primary dealers which, during the 1970s and 1980s, increased greatly. In 1985, the volume of dealer transactions in Treasury securities of about $18 trillion represented over a 16-fold turning over of the $1.1 trillion in marketable Treasury securities held by the public and the Federal Reserve. In the first quarter of 1986, primary dealers' average daily transaction in Treasury securities had risen substantially to $100 billion.

Primary dealers once relied on collateralized loans from commercial banks to finance their positions in Treasury securities and other instruments. However, as table 2.5

indicates, dealers now finance their positions mainly through their net repurchase agreements (i.e., their repurchase agreements less their reverse repurchase agreements).

Table 2.5

Average Daily Financing of Primary Dealers[a]

Type of Financing	1981	1982	1983	1984	1985
	----------		(millions)		----------
Collateralized loans	$ 1,858	$ 2,745	$ 2,371	N/R	N/R
Net repurchase agreements[b]	18,752	18,104	20,764	$20,329	$30,614
Memorandum:					
Repurchase agreements (dealer obtains use of money)	65,368	93,105	102,356	132,764	179,158
Reverse repurchase agreements (customers obtain use of money)	46,616	75,001	81,592	112,435	148,544

N/R = Not reported.

[a]Figures are based on the actual amounts of outstanding borrowings plus loans as of the close of business each Wednesday during the year.

[b]In a repurchase agreement, or "repo," a dealer obtains funds by temporarily selling securities to an investor, with a simultaneous commitment to repurchase the securities at a fixed (higher) price at a specified future date, usually a period of 1 or a few days. The difference between the sales price and the repurchase price represents the interest cost of the transaction. Such financing is provided to dealers by banks, federal agencies, state and local governments, and other investors. In a reverse repurchase agreement, or "reverse," a dealer lends money to an investor while temporarily taking possession of securities. By borrowing more than they lend, i.e., by doing more repos than reverses, dealers acquire funds to finance their purchase of securities.

Source: Federal Reserve Bank of New York.

The dealers' daily net borrowings of this type from 1981 to 1984 remained in the $18 to $20 billion range. However, the total volume of repurchase and reverse repurchase agreements has

more than doubled. This signifies the increasing extent to which dealers are acting as financial intermediaries; that is, they accept customers' funds and lend them out to others.

Two primary dealers encountered serious financial problems in the last few years (not related to their securities activities), but no primary dealer has failed. One primary dealer, Continental Illinois National Bank and Trust Company, was rescued by the combined efforts of the Federal Reserve System, the Comptroller of the Currency, and the Federal Deposit Insurance Corporation. Another primary dealer, New York Hanseatic, had its name removed from the primary dealer list pending a review of its status during its merger with a savings and loan association.

Role of non-primary dealers

Non-primary dealers are made up of other, usually smaller, SEC-registered firms, unregistered firms, regional banks, and others. Some of the larger non-primary dealers are larger than the smallest of the primary dealers. The trading volume of non-primary dealers is estimated by one Federal Reserve official at roughly 25 percent of total market activity.

Non-primary dealers provide a variety of services to the market. Some bid actively at auctions for themselves and their customers, thereby helping Treasury distribute debt to investors. Also, by seeking out the best quotations available from primary dealers, they lower the search costs for investors. For certain securities they quote bid and ask prices to customers, thereby increasing liquidity in the market and providing competition to primary dealers. They provide investment consulting services to smaller investor customers, enabling these customers to access the market. Non-primary dealers also represent a source of potential primary dealers when they are able and willing to meet the Federal Reserve's criteria.

The total number of non-primary dealers is unknown but has been estimated by the Federal Reserve to be between 200 to 300. As with primary dealers, there is considerable variation in the regulatory status of non-primary dealers. Some are commercial banks, some are institutions regulated by the SEC, and some are specialist firms or separate subsidiaries of regulated firms that operate outside of the federal regulatory structure. From this last category have come the failed dealers described in appendix VIII.

Non-primary dealers are not subject to Federal Reserve oversight. They are not required to submit trading or financial data to the Federal Reserve (as primary dealers do daily) and are not subject to Federal Reserve Bank of New York dealer surveillance visits. However, in early 1984, the Federal

Reserve Bank of New York requested that non-primary dealers voluntarily submit position, transaction, and financing data on a monthly basis in order to improve monitoring of the market. By June 1, 1984, 26 dealers were reporting monthly and 7 daily.

Role of brokers

There are basically two types of brokers--inter-dealer brokers and retail brokers.[4] Inter-dealer brokers arrange trades between recognized market makers--primary dealers and firms recognized by the Federal Reserve Bank of New York as aspiring to become primary dealers.[5] Retail brokers arrange trades among all types of market participants that meet the brokers' credit criteria. For a list of brokers, see appendix IV.

Until a decade ago, inter-dealer brokers and dealers relied on direct wire telephone communication to do their trading in the secondary market. However, during the 1970s, a more sophisticated type of electronic brokerage service appeared in the inter-dealer Treasury market. This service was the result of technological change which helped to link the increased number of primary dealers and overcome inefficiencies in dealer-to-dealer and broker-to-dealer telephone communications. In rapidly changing markets, there was not enough time for dealers to learn the quotes of all the other dealers.

In 1974, automated brokerage services were offered to primary dealers in Treasury securities. Brokers providing this service came to be known as "screen brokers" in contrast to older "telephone brokers." Each primary dealer has video display screens in its offices, provided by the brokers, showing the bid and offered prices of the dealers. A dealer interested in bidding or offering can telephone the broker to offer or accept a displayed quotation. This dealer pays the quoted price plus a commission if buying, and if selling the commission is deducted from the sale price.

The screen brokers offered two incentives for primary dealers to use their services. First, their services were fast. New bids and offers appeared on the screen of every dealer at the same time. Second, the usual brokerage commissions were reduced.

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[4]The firms discussed here provide only brokering services--they conduct only matched transactions and do not take positions for their own account. These firms are different from non-primary and primary dealers who may also perform a broker function when they conduct matching transactions between customers.

[5]As of May 30, 1986, there were over a dozen aspiring primary dealers who were customers of most of the interdealer brokers.

Currently, nine screen (inter-dealer) brokers provide service in the secondary market. Of the nine interdealer brokers, seven limit access to their screens to primary or aspiring primary dealers. These seven brokers serve strictly as agents in arranging trades between dealers. These limited access brokers permit the orderly and anonymous buying and selling of Treasury securities between dealers. The bids and offers appearing on the screens are continually updated, and bid-ask spreads are very narrow. Dealers no longer need to look to 1 or 2 other dealers to make an immediate market in an issue but can look to the best quotes of nearly 50 dealers. These quotations are currently only available to the dealers who can act on them.

The two other interdealer brokers, often characterized as retail brokers, also provide for anonymous trading among their clients. In contrast to the other seven brokers, these brokers serve as a principal by guaranteeing the execution of all trades that they arrange as an agent. The retail brokers' customer bases include, in addition to primary and aspiring primary dealers, certain non-primary dealers, regional banks, pension funds and other whom the brokers consider to be creditworthy trading partners. These customers pay for the right to access the price information on the brokers' screens and to trade on the basis of that information. Other investors can see the transaction activity on these screens by subscribing to the financial information services that display it.

Expanding brokerwire access

The question of whether brokers and their primary dealer customers will allow non-primary dealers access to the seven limited access brokers' screens is a controversial one. Some non-primary dealers who do not aspire to be primary dealers argue that brokers' decisions to restrict the use of brokers' screens hampers competition and results in higher prices for Treasury securities. These non-primary dealers believe competition is restricted because non-primary dealers cannot access market prices as quickly and accurately, and thus cannot trade as efficiently as primary dealers. Furthermore, these dealers state that Treasury securities are priced higher to investors than they otherwise would be because non-primary dealers must pay two commissions on a trade, not one. They must pay not only the broker's commission, as primary dealers do, but also a commission to the primary dealer for executing their trades. The end result, according to these non-primary dealers, is that the Treasury securities market is not as competitive and efficient as it could be.

Some primary dealers have argued for the present arrangement on the basis of the market risks they take.[6] Primary dealers are required by the New York Federal Reserve Bank to make markets in good times and in bad and to participate regularly in Treasury auctions of new securities. Some primary dealers have pointed out that this increases the risks they take in the market for new securities. They therefore believe that the restrictions on access to the brokers' screens in the secondary market are fair and only compensate them for their added risks in fulfilling their requirement to participate in Treasury securities auctions.

Some primary dealers prefer to stress a second argument for limiting access to the brokers' screens. Since trading through brokers is anonymous (or "blind"), they believe if non-primary dealers have access, then primary dealers' credit risk will increase. Restricting access to brokers' screens to primary dealers (and those aspiring to be primary dealers) is a way of limiting dealers' credit risk since brokers and dealers consider that all primary dealers are deemed creditworthy because of their status.

In commenting on this report, the Public Securities Association emphasized that the decision to limit access to a particular broker's screen is made by the individual broker involved. The decision is based on the broker's judgment that confining screen access to a specific group of dealers is beneficial to that broker's business. The Public Security Association also emphasized the role that limited access brokers play in maintaining market liquidity. The Association stated:

> ". . . many primary dealers believe that if non-primary dealers are permitted access to brokers screens, the utility of the screens will be lessened and the liquidity of the market compromised. Primary dealers will have less incentive to use the broker screens if the quality and reliability of their trading counterparties cannot be assured. If the integrity of brokers' screens is compromised, the screens, which greatly facilitate government securities trading, may be used less, and the efficiency of the market reduced. It is important to note in this context that brokers' screens are an integral part of the government securities market.

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[6]See the remarks of Richard M. Kelly, President of Aubrey G. Lanston & Co., Inc., in his appearance before the House Banking Committee, Subcommittee on Domestic Monetary Policy, July 9, 1985, Serial No. 99-28, pp. 266-270.

Altering this mechanism could have unintended system-wide effects which could reduce the depth, breadth and liquidity of the market."[7]

The Federal Reserve Bank of New York has neither restricted nor encouraged the practice of using its primary dealer list as a means of limiting access to brokers' screens. According to officials of the Federal Reserve Bank of New York, use of the list apparently reflects a judgment by the brokers that confining transactions to those dealers will provide some assurance to their customers that the party on the other side of any transaction is financially sound, honest, and capable of transacting business in sufficient volume. The Federal Reserve System officials also doubt that the current limitations on use of the brokers' screens significantly affect the liquidity of the secondary market in Treasury securities. Therefore, they see no reason for official intervention to change the current situation. The controversy over access to brokers' screens has resulted in congressional interest in and proposed legislation requiring a study of secondary market practices and structure to see if alternatives could reduce transaction costs and increase competition and efficiency without unacceptable risks to market stability.

Since this legislation was proposed, new arrangements have occurred between brokers and primary dealers. Specifically, one broker is now owned by a majority of the primary dealers while another has agreed to let its dealer customers share in its profits. These events have led to reductions in broker fees. Increased competitive pressures may result in changes in broker screen access as brokers seek to maintain their market share.

Operational role of the Treasury and the Federal Reserve System

As issuer of securities, the Treasury decides the form, timing, maturity, and dollar amount of new issues. In doing so, the Treasury consults with the Federal Reserve and the financial community to obtain advice and recommendations as to how it can best market the debt at the lowest cost. For example, the Treasury and the Government and Federal Agencies Securities Committee of the Public Securities Association meet quarterly to provide the Treasury with an assessment of the size and maturity mix of bills, notes, and bonds that would be most favorably received. The Committee has also provided advice on market practices that were contributing to increased risk or difficulties.

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[7]See appendix X for the full text of PSA's discussion on the brokers' wire access issue.

Treasury decisions substantially affect market practice, and vice-versa, market practice can substantially affect Treasury decisions. For example, in the fall of 1983, the Treasury shortened the time period between auction announcement and settlement date in part as a response to a Committee concern. On the other hand, in its April 28, 1982, meeting memorandum, the Committee observed that some dealers' practice of separating the interest coupons from the principal portion of Treasury securities and selling them separately, called stripping, was becoming more prevalent in the market and would likely continue to grow. The trading of stripped bonds, while beneficial to the market in Treasury securities, raised tax questions. After obtaining changes in the tax laws that eliminated undue tax advantages for such stripped trading, the Treasury encouraged its growth. In 1985 the Treasury further facilitated this market by enabling the separation of newly issued bonds and 10-year notes into principal and interest components on the commercial book-entry system. The Treasury's action allows the trading and holding of these component parts as zero-coupon instruments on the book-entry system through which most of the marketable public debt is held and traded.

The Treasury also controls the system that keeps track of the ownership of government securities that are held in registered form or, if in book-entry form, either in direct accounts with the Treasury or by depository institutions that have securities accounts with the Federal Reserve Banks.[8] This system is operated in part by the Federal Reserve System as the Treasury's fiscal agent and in part by the Treasury's Bureau of the Public Debt. The Federal Reserve as Treasury's fiscal agent also operates the closely related securities transfer and financial settlement systems. Such funds transfers and settlements are carried out through the Fedwire, a dedicated Federal Reserve telecommunications network.

Federal Reserve banks record aggregate securities ownership on their books on behalf of depository institutions that in turn maintain detailed records of ownership by their customers. When a security is sold, the transfer of funds and the change in ownership is accomplished through the Fedwire network between depository institutions. The depository institution selling the security (or acting as an agent for the seller) transmits a message of instruction to its Federal Reserve bank. The Federal Reserve bank then charges the institution's securities account and credits its funds account with the proceeds of the sale. The Federal Reserve System then credits the securities account

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[8]Ownership records of Treasury book-entry securities held by institutions other than depository institutions (such as registered brokers or dealers) must be kept by depository institutions.

of the receiving depository institution (the buyer or buyer's agent) and charges that bank's reserve account. In the transfer and settlement process, the Federal Reserve also confirms the sale with the receiving depository institution.

Clearing banks

Several banks act as clearing agents for the settlement of purchases and sales of government securities. A clearing bank processes the information needed to accomplish the transfer of securities from sellers to buyers and the transfer of cash from buyers to sellers. At one time this function was performed manually, but because of the rapid growth of the market and the Federal Reserve's development of the computer based book-entry system, clearing is now performed almost entirely by computer. Because of these computer systems, the settlement of such trades is, under normal circumstances, almost instantaneous.

Every day thousands of transactions are cleared by clearing banks. For example, one clearing bank recently set a record by clearing 29,000 government securities transactions in 1 day. Clearing banks assist market operations by processing transaction information that would otherwise have to be done by the Federal Reserve itself.

THE DERIVATIVE MARKET

Derivative markets for Treasury securities allow dealers and investors to exercise more precise control over their exposure to risk. Their use in managing risks is described in chapter 3. These markets are used both to speculate (assume more risk to try to increase profits) or to hedge (reduce market risk). Derivative markets have become so integrated with the cash market for Treasury securities that any disruption in the orderly functioning of the former would no doubt affect the latter. Brief descriptions of each derivative market follow.

Financial futures

Financial futures are contracts to buy or sell large dollar-value quantities of financial instruments for delivery at a specified future date. Markets for financial futures represent an outgrowth of traditional futures markets in agricultural commodities. Regulated by the CFTC since 1975, financial futures contracts based on debt instruments have developed for (1) Treasury bills, notes, and bonds; (2) federally guaranteed securities; (3) domestic certificates of deposit (CDs); and (4) Eurodollar time deposits. Most financial futures are traded on the Chicago Board of Trade and the International Money Market of the Chicago Mercantile Exchange. The growing use of financial futures by securities dealers, banks, financial institutions, and others has made cash markets more liquid. Their use has also allowed market participants to hedge risks or to speculate in the highly volatile interest rate environment of recent years.

The futures exchanges act as self-regulatory organizations (SROs). These organizations monitor market activity, establish contract specifications and initial margin requirements, and guarantee execution of trades. Exchange-affiliated clearinghouses clear all trades and daily mark traders' open contract positions to current market value. They also require margin deposits to be reestablished daily. Holders of futures contracts usually sell them before they actually deliver or take delivery of the underlying security, but the possibility of physical delivery causes a convergence of futures prices with cash market prices at the time of contract expiration.[9] The three exchanges that trade futures contracts on Treasury securities reported 1985 total annual trading volume of 2.4 million contracts for Treasury bills,

[9]If a futures contract is selling at either a premium or discount over the spot or cash price, then the process known as arbitrage between the two markets is possible. A major factor is the level of the repo rate (the rate of financing the cash market position) in comparison to the yield on the cash market position and the futures price. For instance, if the futures price is lower than the spot price, firms who need the security can be expected to buy futures contracts and accept delivery rather than pay the higher price for the security in the cash market. It is interactions such as these between buyers and sellers as delivery time approaches that tend to bring the futures market price into line with the prevailing spot price.

2.9 million contracts for Treasury notes, and 40.7 million contracts for Treasury bonds.[10]

Forwards

Forward trading is conducted on a private basis rather than through an exchange. With forwards, market participants can tailor contracts to their individual needs instead of using the exchanges' standardized contracts. Moreover, delivery is frequently contemplated, whereas futures contracts are generally offset prior to the delivery date. Forward contracts usually have a maturity date of less than 30 days. However, their maturity date may be as far off as 6 months.

Forward trading is not subject to CFTC regulation, but dealers reporting to the Federal Reserve include position and transaction data on forwards, futures, and options in addition to their cash securities positions.

When-issued trading

The when-issued market is a term used to describe secondary market trading in new Treasury securities issues between the time of the Treasury's issuance announcement and final settlement after auction. During this period of about 2 weeks, dealers and customers contract to trade Treasury securities at set prices before they are issued. When-issued trading is also important in the distribution process for government securities. An active when-issued market, whereby bid and ask quotes are available to dealers through the brokers' wires, enables the dealers to know within a few basis points what the Treasury auctions results are likely to be. When-issued positions of over $200 million are counted by the Treasury in administering its rule that no more than 35 percent of the amount offered at an auction will be awarded to a single bidder.

The Federal Reserve has called when-issued trading a potential problem area because of the absence of established margin (collateral) requirements of customers making financial commitments. While some dealers require margin from certain customers, the industry does not usually do so. The Federal Reserve has also expressed concern about the total commitment a single customer could make in this market. Since April 1984, the Federal Reserve has requested that primary dealers report daily on all when-issued commitments of $10 million or more. Total transactions volume for the when-issued market is not compiled by the Federal Reserve, however.

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[10]Contract sizes are $1 million for bills and usually $100,000 for notes and bonds. Appendix V contains more detailed information on futures trading.

Options and options on futures

Financial options give the purchaser a right, but not an obligation, to either buy (a call option) or sell (a "put" or "standby" option) securities or futures contracts for securities at a given price for a set period of time. Presently, options contracts are traded for Treasury bills and notes at the American Stock Exchange and for Treasury bonds at the Chicago Board Options Exchange. In October 1982, the CFTC first permitted futures exchanges to offer options on futures contracts. Options on futures contracts for Treasury notes and bonds are traded at the Chicago Board of Trade. Treasury bill futures options began trading on April 10, 1986, at the Chicago Mercantile Exchange. The exchanges that trade options on Treasury securities reported an annual total of 437,959 contracts in 1985. The one exchange that trades options on futures on Treasury bonds reported trading volume of 11.9 million contracts in 1985.

Primary dealers' use of derivative markets

Primary dealers participate actively in the derivative markets. Table 2.6 shows primary dealers' average daily dollar transaction volume in futures, forwards, and options for the years 1981 to 1985.

Table 2.6

Average Daily Transactions Volume in Derivative Markets by Primary Dealers

Market/Instrument	1981	1982	1983	1984	1985
	(millions)				
Futures:					
Bills	$3,523	$5,031	$6,655	$6,947	$ 5,560
Notes and bonds	1,330	1,490	2,501	4,503	6,069
Agencies	234	259	265	262	240
Money market instruments[a]	NA	1,997	2,960	7,828	15,211
Forwards:					
Bills	215	431	801	686	542
Notes and bonds	143	402	690	680	741
Agencies	1,370	977	1,648	2,837	3,857
Money market instruments[a]	[b]	5	7	8	12
Options including options on futures:					
Put options	[b]	6	72	305	453
Call options	[b]	4	133	344	304

[a]Certificates of deposit, bankers acceptances, commercial paper, and foreign exchange and stock indexes.

[b]NA-not available

Source: Federal Reserve Bank of New York.

All primary dealers trade in futures, with eight accounting for about half of the trades. Currently, all primary dealers trade in futures on Treasury bills, notes, and bonds. Most dealers also trade in futures on federal agency securities. During 1984 the bulk of trading, as measured by the par value of the underlying securities, not the volume in terms of the number of contracts traded, was in Treasury bills; in 1985 it was in notes and bonds. Daily trading in Treasury bill futures and notes and bond futures, was about 25 times greater than futures trading in federal agency securities. The leading futures contract on government securities in terms of the number of contracts traded is the Chicago Board of Trade's long-term bond contract.

According to Federal Reserve officials, most forward trading is transacted between primary dealers and their customers, principally using mortgage-backed agency securities. In 1984, 32 primary dealers used forward contracts on U.S. Treasury and federal agency securities, and volume grew substantially. Of the 32 dealers, 10 accounted for over 75 percent of average daily

transaction volume. The $3.9 billion daily value of 1985 forward transactions in federal agency securities far exceeded that of forward contracts in Treasury securities.

Primary dealers' use of options (including options on futures) has also grown substantially. The average daily dollar value of all options transactions reported by primary dealers grew from $10 million in 1982 to $757 million in 1985. The number of primary dealers using options increased from 3 in 1982 to 14 in 1984. Five dealers accounted for over 89 percent of the transactions in 1984.

CONGRESSIONAL CONCERNS

The principal objective of recent congressional interest in the Treasury securities market has been protecting investors and the market generally from the adverse effects of dealer failures such as the several that have occurred since 1982. Proposals for trying to accomplish this objective do not involve major changes in the market structure described in this chapter.

To protect investors and the market against dealer failures, the bills described in chapter 1 involve (1) registering currently unregulated dealers and adopting rules for financial responsibility, applicable to all firms operating in the market; (2) adopting capital adequacy rules for firms not currently regulated; and (3) supervising the government securities activities of all firms. No changes in the primary dealer system have been proposed, but, as mentioned in chapter 4, the development of a more informed regulatory apparatus applicable to all firms could affect the primary dealer system in ways that cannot be anticipated.

In testimony during the summer of 1985, the Treasury advised Congress that it was considering recommending that Congress use changes to the computerized recordkeeping system (known as the book-entry system) operated by Treasury and the Federal Reserve System to provide market participants with additional protection. As described in chapter 3, the fraud uncovered in recent failures consisted of dealers using securities owned by customers as if the securities were their own. Also, defrauded municipalities complained that they could not verify their ownership of securities beyond the assurances provided by their banks and by their securities dealers.

The changes Treasury was considering would have expanded access to the book-entry system by requiring dealers and other book-entry custodians to have securities accounts at the Federal Reserve in order to verify Treasury securities held for their customers. Such a system was designed to assure all investors that their securities are held directly in a securities account at a Federal Reserve Bank. Additional protection would come from

rules that all firms would have to meet to be connected into the book-entry system, such as capital adequacy and handling of customer accounts.

Treasury eventually decided not to go forward with a proposal for changing the book-entry system as a way to regulate the market. Treasury could not, by regulation, provide for a funds account at the Federal Reserve for dealers and others who were not depository institutions, and Treasury determined that the proposal would have resulted in significant duplication and delay in the system, substantially mitigating any beneficial effects. To provide for a funds account would have required amendment of the Monetary Control Act of 1980 and would have represented a major break with past policies of restricting access to Federal Reserve services of this type to the banking system. Were access to these other systems changed, the dynamics would be hard to predict but could easily affect the roles of clearing banks and perhaps of other participants as well.

In March 1986, the Treasury did, however, publish a proposed regulation that provides significant modifications in its book-entry system. While preserving the current tiered nature of that system, the proposed regulation sets forth uniform rules for transferring and pledging book-entry Treasury securities. The comment period for this regulation expired June 6, 1986.

Also, in December 1985, the Treasury directed the Federal Reserve banks to establish a maximum of two book-entry accounts for state treasurers requesting such accounts. The two accounts were an investment account for the state's own holdings and a general account to accommodate the pooling of other public entities' securities through the state treasurer's account at the state treasurer's option. In addition, in December 1985, the Treasury announced proposed regulations for a new direct-access book-entry system designed primarily for investors whose interest is in holding securities to maturity.

Operational concerns

Although H.R. 2032 was concerned principally with regulation, the bill and its accompanying report point to topics that need further study because they could significantly affect the market. As drafted, H.R. 2032 would require GAO, in coordination and consultation with the Federal Reserve, the Treasury, and the SEC, to study the nature and efficiency of the current trading system in the secondary market for government securities. The study would include reviewing the availability of the services of government securities brokers and determining whether quotations for government securities are available to market participants other than primary dealers in terms consistent with the public interest and investor protection.

The report accompanying H.R. 2032 also identified two other areas for our study. One is whether an enhanced broker system with greater trading access for all creditworthy dealers might lead to lower trading costs and whether a centralized cash market or a computerized exchange system might improve market efficiency. The other area is determining whether the existing relationships between the Federal Reserve and secondary dealers should be restructured. According to the report:

> "Such new arrangements might include establishing, on a limited basis, various business relationships between the Federal Reserve banks and dealers who agree to provide regular reports, permitting smaller dealers to borrow oddlot securities on a fully collateralized basis, and authorizing some dealers to have access to the payments and book entry system."[11]

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[11]H.R. Rep. 99-258 at 36, 37 (1985).

CHAPTER 3

RISKS IN THE TREASURY SECURITIES MARKET

Risks in the Treasury securities market refer to the potential for financial loss by dealers or other market participants.[1] These risks result from price fluctuations and other factors that have nothing to do with the default-free nature of the Treasury securities themselves.

Because of the impact of dealer firm failures, the Congress has been concerned about whether federal regulation for controlling risks is adequate. The Congress is considering regulation which would seek to provide added protection to investors by reducing chances for fraud, providing accurate financial information, and restricting poorly capitalized firms' operations.

MARKET RISK

The principal risk dealers and their customers face in the Treasury securities market is market risk, which also exists in all other securities markets. Subsequent sections describe other risks that are also present in the market--credit risk, business risk, and unexpected changes in the institutional structure of the market.

Market risk arises from gains or losses due to fluctuations in market prices of Treasury securities. The prices of Treasury securities are inversely related to yields. The price of a Treasury security will rise when the market interest rate for securities of equal maturity falls. Conversely, the price will fall when the market interest rate rises. Prices of longer term securities are more sensitive to a given interest rate change than are shorter term ones.

The interest rates for different maturities of the same kind of security can be graphically depicted by a yield curve, which plots percentage yield versus time to maturity (see fig. 3.1). For example, a 20-year security has a higher percentage yield than a 5-year or shorter-term security. When interest rates change, yields of different maturity securities can either change by the same amount, in which case the yield curve would experience a parallel shift up or down, or change by different

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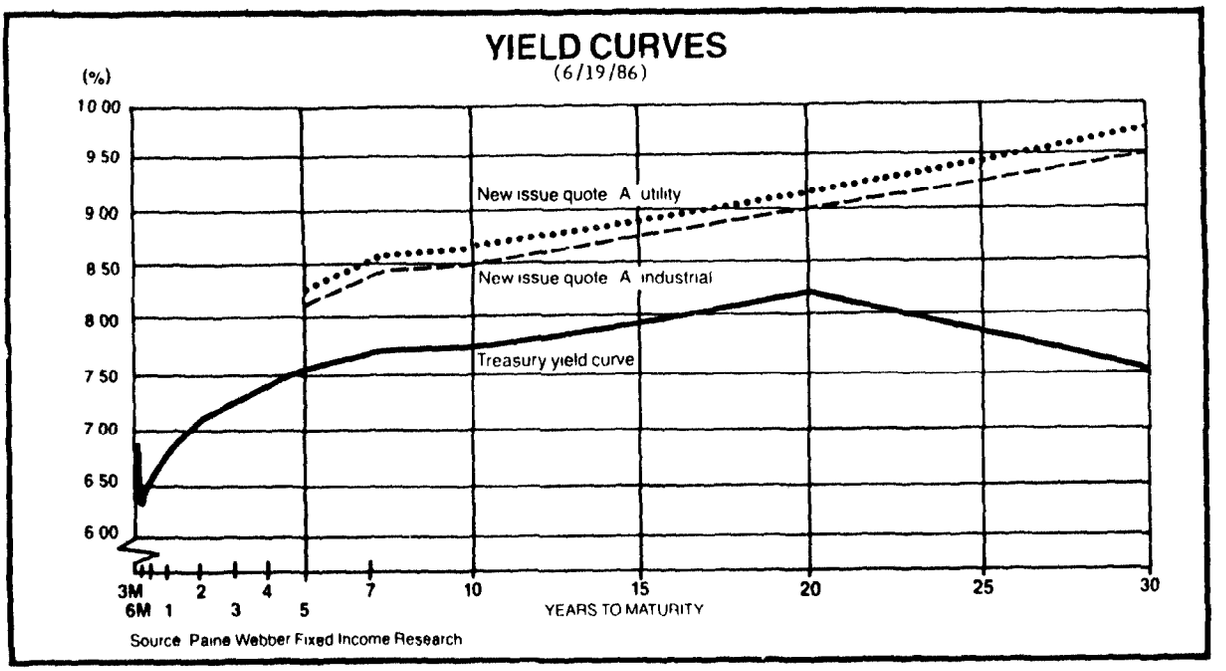
[1]Dealer risk and risk management techniques are explained in more detail in appendix VII.

amounts, in which case the yield curve would change its slope. When interest rates change, the yield curves of different securities can change by different amounts (and the change can even be in opposite directions) due to different expectations of inflation and varying supply and demand conditions for the securities. Dealers use their knowledge of the market to try to predict these changes.

Figure 3.1



The effects of market risk on dealer activities can be illustrated by describing the activities of three hypothetical dealers, each of which attempts to earn profits by pursuing different trading strategies. Dealer One is a "market maker" that makes profits from the spread between the buying and selling prices. Dealer Two earns "carry" profits by financing the purchase of Treasury securities at a cost lower than the yield of the securities. Dealer Three is an active position-taker who trades for its own account, hoping to profit from price changes.

Dealer One--make markets

Dealer One provides liquidity to the market by acting as a "market maker"--standing ready to buy (sell) Treasury securities at a price slightly below (above) the market price. The spread between the dealer's buy, or "bid," and sell, or "ask," prices is the payment to the dealer for providing liquidity. To profit from this activity, the dealer tries to gauge where interest rates are headed and the quantity of buy and sell orders that will be received at the ask and bid prices. The dealer attempts to control the quantity of orders received by varying its bid and ask prices. For example, if a dealer has a large amount of a particular Treasury security and wants to reduce a net position in this security, it will either reduce the ask price (offer to sell its securities at a lower price) or reduce the bid price (offer to buy securities at a lower price). These two actions will make it more attractive for others to buy the dealer's security inventory and reduce the likelihood that the dealer will acquire additional securities.

A particular dealer will adjust the bid and ask prices in response to its perception of supply of and demand for a particular security. The dealer forms these perceptions by observing market reaction to its quotations and changes to its inventory of a particular security. These same conditions do not necessarily apply to all dealers at the same time, so that bid and ask prices for the same security will vary among dealers. Changes in market conditions that apply to all dealers trading a particular security, such as reduction in the overall level of trading activity, will tend to cause all dealers to change their bid-ask spread in the same way--in this case, to widen the spread.

Dealer One faces the risk that securities prices might fall after it has bought securities at the bid price but before it has found another buyer. When this occurs, the dealer

experiences a capital loss on its securities position since the market value of its holdings will have decreased. Similarly, if securities prices rise after Dealer One has agreed to sell securities at the ask price but has not yet found a source of supply, the dealer will experience a capital loss on its securities position since it will have to pay a higher price for the securities it must deliver.

This illustration highlights that in the ordinary course of fulfilling customer orders, securities dealers are often "long"--holding securities that have not been sold to customers yet and, therefore, vulnerable to the risk of interest rates rising--or "short"--having agreed to sell securities for a fixed-in-advance price before having bought them and, therefore, vulnerable to the risk of interest rates falling.

Dealer Two--financing spread

Dealer Two earns profits by buying Treasury securities with yields higher than the cost of funds used to finance the purchases. If the securities are held to maturity (or have already been sold on the forward market) and are financed by liabilities of the same maturity, market risk exists only if the securities are sold prematurely. However, a dealer may purchase securities of longer term than the liabilities used to finance them in order to take advantage of the fact that short-term interest rates typically are lower than long-term rates. In this case, market risk exists because both the prices of the securities and the cost of financing them will change as interest rates change.

Dealer Three--speculate

Dealer Three is an active position-taker. The dealer incurs long or short positions not only as an adjunct to customer orders (as with Dealer One) but also as a deliberate strategy to speculate on potential gain from changes in interest rates. The dealer tries to anticipate not only short-term movements in the level of interest rates but also changes in relative rates--the yields of longer term maturity securities relative to the yields of shorter term maturity securities.

For example, if Dealer Three believes that interest rates will rise, it will want to take a short position on the movement in interest rates, that is, a position that will gain when rates rise. The dealer can do this by using the forward, futures, or repurchase agreement markets to, in effect, sell securities it does not own at a fixed-in-advance price for

delivery at a future time. If interest rates increase as the dealer expects, it buys the securities at a lower price than the contracted selling price. The dealer faces the risk that rates might go down instead of up, turning the expected gain into a loss.

By varying the amounts in the long and short positions and by holding these positions in securities with maturities ranging from short term to long term, the dealer can change its net position on the movement in interest rates.[2] The closer a dealer's net position is to an outright long or short position, the riskier is the dealer's net position; that is, the more that the dealer could potentially gain or lose from a movement in interest rates. The size of a dealer's position on a change in the level of interest rates or in relative interest rates depends on the dealer's certainty about the change, on its capacity to sustain losses, and on its willingness to bear risk.

Managing market risk

A typical dealer combines the above described operating strategies, although some dealers specialize in certain activities or maturity ranges. Regardless of the approach, all dealers experience market risk. This risk will be greater the more a dealer takes outright long or short positions to speculate on interest rate movements.

Market risk can be managed by having offsetting positions in securities or in the instruments of the derivative markets--futures, forwards, options, and options on futures. In the case of a single security, the market risk can be partially offset by holding an opposite position in the cash market or in the instruments of the derivative markets. Such use enables the dealer to lock in the gain or establish a maximum for the loss from a given transaction. The overall market risk of a portfolio can be reduced by diversifying among securities and derivative instruments having different maturities, coupon rates, and credit-risk characteristics because their prices will tend not to move in exactly the same way.

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[2]For more information on how dealers position their portfolios based on expected changes in the level and structure of interest rates, see appendix VII of this study and Marcia Stigum, The Money Market (Dow Jones-Irwin, 1983).

Example of primary dealers

Primary dealers make active use of both the cash and derivative markets in managing market risk. The use of these markets for both Treasury and other types of securities is summarized in table 3.1. This table shows the average of primary dealers' daily net positions for the years 1981 through 1985.

Table 3.1

Average of Daily Net Positions of Primary Dealers[a]
(Securities at par value in millions of dollars)

	1981	1982	1983	1984	1985
Treasury Securities					
Immediate positions	9,033	9,328	6,263	5,538	7,391
Futures positions	(11,667)	(4,869)	(5,157)	(2,731)	(2,857)
Forward positions	(603)	(788)	(1,935)	(1,643)	(910)
Federal Agency Securities					
Immediate positions	2,277	3,712	7,172	15,294	22,860
Futures positions	522	(224)	170	233	(722)
Forward positions	(451)	(1,190)	(3,561)	(9,205)	(9,420)
Other Money Market Instruments:[b]					
Immediate positions	7,839	11,736	12,285	15,031	19,348
Futures positions	N/A	(2,667)	(6,472)	(6,356)	(11,331)
Forward positions	N/A	(11)	(15)	26	37

[a]Positions are reported on a net basis which is the sum of the long and short positions. Non-bracketed amounts represent net long positions, i.e., securities on hand or securities purchased for future delivery. Bracketed amounts represent net short positions, i.e., securities sold for future delivery. The table does not show the total securities owned by the dealers because the positions are reported on a net rather than gross basis.

[b]Certificates of deposit, bankers acceptances, and commercial paper.

N/A=not available.

Source: Federal Reserve Bank of New York.

In general, for the period 1981 through 1985, primary dealers took net long positions in the immediate (or cash) market and net short positions in the futures and forward markets. During this period, they also decreased their immediate net long positions in Treasury securities while they increased their net long positions in federal agency securities and other money market instruments. Dealer long positions in Treasury securities declined by about 40 percent from 1981 to 1984, but increased by 33 percent from 1984 to 1985. Long positions in federal agency and money market instruments increased by 904 and 147 percent, respectively, from 1981 to 1985.

The information shown in table 3.1 is not detailed enough to be able to comment on the risk exposure of the primary dealers or whether it has changed since 1981. For example, to make such a determination, it would be necessary to analyze current market values rather than par values. It would also be necessary to examine dealer activities by maturity class, since the balance between long-term and short-term securities can have a great deal to do with sensitivity to changes in interest rates.[3]

CREDIT AND OTHER RISKS

Even though there is no risk with respect to Treasury's payment on a Treasury security, credit risks exist because of the possibility that private parties may default on a loan or contract. Such risks may be taken on deliberately, as when a bank makes an unsecured loan to a dealer, or unexpectedly as a result of a transaction failure, as when the securities initially exchanged for cash in a repurchase agreement cannot be recovered when the repurchase is scheduled to occur.

Credit risk also arises whenever a dealer purchases an option directly from another dealer. A typical "over-the-

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[3]In examining these data, it is also important to understand that dealers' positions in securities can vary considerably in a short period of time. For instance, by examining monthly data, we found that dealers' net immediate positions in Treasury securities went from being short $6.1 billion in July 1984 to being long $3.4 billion in August 1984. Because of such variations, any trends observed in dealers' positions by market participants and market analysts must be interpreted carefully.

counter" options transaction would be one where dealer "A" pays for the right to purchase a security from dealer "B" at a fixed price at some future date. Especially if market prices rise, dealer "B" may not be able to afford to buy the security it promised to deliver and hence would default on its obligation.

Fraudulent activities by a trading partner pose another source of credit risk. A dealer (investor) expects that when another party delivers securities, that party has the legal right to sell them so that ownership transfers free and clear of any claims by others. A dealer expects that the other party is financially solvent and able to complete the trade. Misrepresentation of security ownership and financial condition were reported to be reasons behind the failure of E.S.M. Government Securities, Inc.

Managing credit risks

Credit risks can be reduced by knowing your counterparty, by restricting the size or type of transactions done with any one trading counterparty, by requesting audited financial statements, and by diversifying--doing business with several trading counterparties. Most large dealers try to limit credit risk by restricting the size or type of transactions that they will enter into and the volume of outstanding deals that they will engage in vis-a-vis particular counterparties. For example, one primary dealer limits its exposure to any trading partner to the lesser of 5 to 10 percent of the trading partner's capital or 5 to 10 percent of its own capital. In that way, even the worst events can be weathered by the firm. Credit risks can be reduced by obtaining appropriate margins consistent with the price volatility of the securities used as collateral and by taking possession of securities acquired as collateral through reverse repurchase agreement transactions.

By their nature, standards and procedures to control risk create demands on other market participants to prepare and furnish financial data and to record and price transactions in similar ways. Development of these prudent business practices that apply to any market situation has been encouraged by such bodies as the PSA, industry trade associations, the New York Stock Exchange, and state and federal securities regulators.

An important feature of the primary dealer system is that when primary dealers make trades among themselves, they usually trust that each dealer will remain creditworthy. Trades conducted by primary dealers through interdealer brokers usually

are conducted so that the dealer does not know the identity of the dealer on the other end of the transaction.

Business risks

Business risks arise from how the business of Treasury securities dealing is managed and controlled. The quality of a dealer's management is a large factor in the control of business risks. Possible sources of losses arising from inadequate management or control include a loss of business volume because of competitive pressures, poor service or mispricing, high overhead or other costs, bad business judgment, accounting or control problems, and internal fraud.

An example of a business risk is the possibility that an employee will embark on speculative position-taking far in excess of authorized limits. Breakdown of a computer system involved in arranging or clearing trades could also result in business losses for the firm experiencing the breakdown.

Managing business risks essentially involves establishing good systems of internal controls to ensure that transactions are carried out and recorded properly, that computer systems are well designed and tested, that back-up arrangements are in place, and that credit and market risks are maintained within acceptable limits. Bonding for employees also provides a safety net to protect the firm against employee fraud.

Legal or institutional risks

The Uniform Commercial Code, which all states have adopted in some version,[4] provides the basic legal framework for the marketplace. It defines the rights and obligations of buyers and sellers, provides the criteria for claims against a defaulted firm; provides the criteria for such issues as "perfecting a security interest" (i.e., the recording of an

[4]According to Uniform Commercial Code in a Nutshell, by Bradford Stone (2nd Ed., 1984, West Publishing Company), the Code has been enacted in 50 states (although Louisiana adopted only articles 1, 3, 4, 5, 7, and 8), the District of Columbia, and the Virgin Islands. There may be some variations in certain provisions, however, because the Code provides for certain alternative provisions and non-uniform amendments. Article 8, dealing with securities, was amended in 1977 to set forth rules for book-entry securities. To date, 20 states have enacted some form of these amendments.

the appointment of FSLIC as receiver or in a similar capacity. The federal bankruptcy code was amended on July 10, 1984[7] to clarify the status of repurchase agreements in the event of the bankruptcy of a securities firm, without explicitly addressing the ownership issue. However, since bank dealers are not covered by this statute, the problem has not been completely addressed. As a result, market participants have been encouraged to use written contracts for repurchase agreements because of the many subtleties that may affect pricing and the value and availability of collateral in cases of default.

In March 1986, the Treasury published proposed new book-entry regulations[8] which would provide a Federal framework with respect to the rules governing the transfer and pledge of Treasury securities. A uniform and clearer set of rules should help the marketplace by reducing legal risk. In addition, in December 1985, the Treasury proposed regulations for a new system for allowing investors to keep securities directly in a book-entry account.[9]

THE ROLE OF CAPITAL IN DEALER RISK MANAGEMENT

Diversification and sound management practices reduce, but do not eliminate, market, credit, and the other risks we have described. Ultimately, the dealer's last line of defense against large unexpected losses is capital.

Capital can be considered as being synonymous with net worth--i.e., the excess of the value of assets over the value of liabilities. In principle, sale of a solvent firm's assets

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[7]Public Law 98-353 (July 10, 1984), 98 Stat. 364.

[8]51 Fed. Reg. 8846 (March 14, 1986) to be codified at 31 CFR part 357.

[9]Proposed regulations for this system, known as the TREASURY DIRECT Book-entry Securities System, were published for comment on December 2, 1985 (50 Fed. Reg. 49,412). The new system is expected to be used by investors who buy their securities by submitting non-competitive bids at Treasury auctions and who intend to hold their securities to maturity. The system, which will eventually replace one operated directly by the Treasury for investor-owned bills, is being extablished to enable the Treasury to fulfill its plans to eliminate all definitive securities. The accounts will be maintained at the Federal Reserve Bank of Philadelphia, acting as fiscal agent of the Treasury.

should more than cover the firm's liabilities. However, in practice, it is usually the case that not all of a firm's assets can be readily converted to cash for the amount shown on the firm's books if needed to meet a financial commitment. Buildings, furniture, or equipment may be difficult to sell without disrupting operations. Market conditions could also make it difficult to sell other assets on short notice. Market participants (and federal regulators) therefore often use a concept known as "liquid capital" as a measure of a dealer's ability to sustain losses. Liquid capital represents the assets available to meet unexpected financial commitments that can be decrease in value.

How much capital a dealer has and how much of it is liquid capital is a crucial determinant of the current riskiness of the firm and its capacity to take on risk in the future. Holding more capital reduces the risk of insolvency, and holding a higher proportion of this capital as liquid capital reduces the risk of illiquidity. However, these actions also tend to reduce the firm's profits because highly liquid assets usually have a lower rate of return than less liquid or longer term assets.

Dealers will differ in their assessments of optimal capital levels because of differences in their willingness to assume risk and because estimating risk involves predicting such factors as the future movement of interest rates. While historical data on interest rate volatility is helpful for such estimates, the assessment of the relative probability of future rates is essentially a judgment matter.

RISKS FACED BY CUSTOMERS

Dealers' customers in the Treasury securities market encounter most of the risks faced by dealers: market, credit, and legal and institutional risks. Like dealers, investors can usually reduce these risks through hedging strategies, diversification, good internal controls, and written agreements. However, customers may have limited expertise in this regard, e.g., in "knowing your counterparty." In addition, customers may face limitations in managing their risks because of the incompleteness and cost of obtaining information on dealer activity and market developments. Consequently, certain investors appear to have entered the market without an adequate appreciation of the risks they were assuming and have lost money because of fraudulent dealer practices.

Circumstances surrounding several of the dealer failures that have occurred in recent years illustrate the risks that

customers can encounter when dealing with firms in the Treasury securities market. The failure of Lion Capital Group, Inc., in 1984 resulted in alleged losses before recoveries, if any, of approximately $40 million to about 60 customers. Many of these customers allegedly had engaged in repurchase agreements believing that the securities subject to repurchase were held on their behalf by Lion's clearing agent. Instead, Lion's clearing agent claimed it was holding these securities as security for loans it had made to Lion rather than in custody for Lion's customers. A similar situation occurred in the failures of E.S.M. Government Securities, Inc., and Bevill, Bressler, and Schulman Asset Management Corporation in 1985. Many of their repurchase agreement customers found the securities underlying their transactions were claimed by other parties. It appears that in many instances government securities purportedly held for the benefit of customers had been resold or otherwise converted for use by the failed firm or perhaps were never held by the failed firm.

The Director of the Technical Service Center, Government Finance Officers Association (GFOA) told us that the association was concerned that dealers operate in a scrupulous manner and are financially stable. He stated that it is virtually impossible to assess the creditworthiness of dealers with the "woefully inadequate" financial statement data provided to institutional investors. About 15 finance officers had provided him examples of the financial data submitted to them by dealers, and it was usually only a balance sheet, which did not allow for meaningful evaluation of the firm.

To the extent that information is costly and that economies of scale exist in information gathering and in transactions, smaller investors may face an additional risk due to their size and lower level of sophistication. If either the cost of information is too high or if smaller, less sophisticated investors are unaware of the need for gathering relevant information, they may make poor decisions and unknowingly assume undue risk. This scenario is especially true in the case of credit risk arising from fraud. More sophisticated market participants may be less susceptible to fraud since they may be able to extract more information from their counterparties than

others.[10] Investors can also be poorly informed about prudent market practices so that they may fail to protect themselves against unnecessary credit risks.

IMPLICATIONS FOR REGULATION

Following the failure of Drysdale in 1982 and again after the failure of several dealers in early 1985, the Federal Reserve Bank of New York, regulators of financial institutions, municipal investment regulators, the GFOA, and the AICPA all conducted efforts to educate their constituencies about the risks inherent in certain transactions. Such efforts included educational pamphlets, conferences, and new capital adequacy guidelines. In general, these efforts stressed the safe options that exist for the purchase and sale of federal securities.[11] The Treasury is also taking actions to improve safety including (1) expansion of Treasury's system of book-entry accounts (operated by the Federal Reserve); (2) revision of the regulations governing transfer of Treasury securities and security interests in those securities; and (3) authorizing two securities accounts at the Federal Reserve Banks for each state so that states (and local governments through their states) can hold securities directly at the Federal Reserve.

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[10] For example, the Federal Reserve Bank of New York, a large influential market participant, requires primary dealers to supply it with daily data on their positions. Similarly, dealers applying for access to wholesale broker screens must supply adequate information for credit approval.

[11] See, for example, the publications: "It's 8:00 A.M., Do You Know Where Your Collateral Is" (Federal Reserve Bank of New York, July 1985) and "Business Practice Guidelines for Participants in the Repo Market" (the Public Securities Association, October 1982). These were prepared with the intention of fostering sound credit, business, and trading practices for participants in the "repo" market and suggest a means available to reduce risk and diminish uncertainty when conducting repurchase transactions. In addition, the Federal Reserve Board announced on November 1, 1985, the adoption of a supervisory policy on repurchase agreements that had been recommended by the Federal Financial Institutions Examination Council. The policy statement is intended to provide financial institutions with minimum safety-and-soundness guidelines for managing credit risk exposure.

In addition, as mentioned in Chapter 1, legislation is under consideration to increase market regulation. This legislation would increase the amount of information available to customers on the activities of currently unregulated dealers and require that all dealers abide by certain rules of fair and sound practice. For example, all dealers would have to prepare annual audited financial statements, maintain securities in segregated accounts, open their books to regulatory inspections, and maintain a minimum level of capital.

If enacted, the proposed legislation should reduce unintended exposure to credit risk, such as that caused by fraud, by making better information available to market participants and increasing regulatory surveillance of dealer operations. The proposals would also enhance the ability of firms to withstand their exposure to these risks if firms actually end up with greater amounts of capital relative to their risk exposure. However, firms and their customers would continue to be exposed to market, credit, and other risks described in this chapter.

Ultimately, the degree of regulation that should be sought for the Treasury securities market is a matter of judgment. Lack of confidence in the soundness of firms operating in the market can be costly to the Treasury if it translates into higher interest rates for the Treasury. On the other hand, regulation that would stifle innovation or require dealers to keep excessive amounts of capital can be costly. It is unrealistic to expect new legislation to prevent all fraud or all firm failures because both occur among the financial firms (banks and securities firms) most highly regulated by the federal government. Unless the federal government guarantees the funds of all participants in all parts of the cash and derivative markets (thereby itself assuming all of the market and credit risks), an element of risk will remain for investors unwilling to stick to safe options or those seeking returns higher than those that can be obtained by such options.

CHAPTER 4

REGULATION, SUPERVISION, AND OVERSIGHT OF THE GOVERNMENT SECURITIES MARKET

This chapter describes the scope of formal and informal federal regulation of the Treasury securities and related markets. Regulation supplements the market discipline that major players impose on each other and the influence that the Treasury and Federal Reserve exert through their participation in the market. This chapter also points out how the framework would be modified by proposals currently being considered by Congress.

INSTITUTIONAL FRAMEWORK FOR REGULATING THE GOVERNMENT SECURITIES MARKET

State laws alone covered securities transactions until the Great Depression. To deal with securities market problems that may have helped to precipitate the Great Depression, the Congress passed the Securities Act of 1933 and the Securities Exchange Act of 1934. The system established by these laws for regulating the markets for corporate stocks and bonds has two main elements, each of which is administered by the SEC. First, corporate securities that are sold and traded in public markets are regulated. Second, all firms involved in the sale or brokering of regulated securities are also subject to regulation. These laws provided the legal basis for the SEC to investigate and prosecute fraudulent activity in connection with the purchase and sale of securities.

Significantly, Congress exempted certain classes of market instruments from all provisions of these laws except the antifraud sections. Treasury securities were among those

exempted.[1] The exemption was made because the federal government, as issuer of the securities, would not default. Thus, the high credit quality of the securities eliminated the need for disclosure of information relating to the financial health of the issuer and made these obligations less subject to abuses in secondary market trading. In addition, major transactions in Treasury securities were carried out by a small network of knowledgeable institutional investors with little direct involvement by individual investors.

FEDERAL REGULATION OF THE TREASURY SECURITIES MARKET

The following sections describe the nature and degree of federal regulation of Treasury securities markets. The discussion covers regulation of products, transactions, dealers, and different types of institutional investors. The SEC's anti-fraud activities, which protect all investors, are also discussed.

Regulation of products and transactions

Although certain product and transaction regulatory measures applicable to many registered securities are not relevant to the Treasury securities market because default risk is negligible, the Treasury, Federal Reserve, Office of the Comptroller of the Currency (OCC), FDIC, CFTC, and SEC all have important roles in this area.

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[1]Exempt securities included direct obligations of the government, obligations whose principal and interest are guaranteed by the government, and securities issued as guaranteed by corporations designated by the Secretary of the Treasury in which the government has an interest. CDs, short-term bankers acceptances, commercial paper and municipal securities were also considered exempted securities for purposes of registration requirements of the Securities Exchange Act.

In 1975 the Congress removed municipal securities from the exempt category by creating the Municipal Securities Rulemaking Board to establish rules, subject to enforcement by other regulators, covering the issuance and trading of those securities.

As noted in Chapter 2, the Treasury, as issuer of securities, decides the form, timing, and maturity of new issues; the dollar amount to be issued; the bids it is willing to accept from among those bid on new issues; and the form of ownership record to be maintained.

As previously noted, the Federal Reserve, in its role as fiscal agent for the Treasury, takes care of many of the operational details involved in selling new issues of government securities, operates the system for maintaining ownership records, and operates a system that allows securities to be transferred electronically from one party to another. The Federal Reserve transacts its own open market operations on the book-entry system. Furthermore, to ensure that trades are properly recorded, the Federal Reserve also establishes record-keeping rules for banks which maintain accounts with it. This operational role allows the Federal Reserve, working closely with the Treasury, to influence in a technical way the nature of market instruments and the transactions process.

The bank regulatory agencies (OCC for national banks, the Federal Reserve for bank holding companies and state member banks, and the FDIC for state non-member banks) have responsibility for examining how well clearing agents perform their function. They do this as a part of their regular bank supervision and examination functions.

Since the SEC is responsible for interpreting securities laws, it can determine, subject to judiciary review, whether derivative instruments based on Treasury securities, such as repurchase agreements or zero-coupon bonds, are separate securities that come under normal SEC regulatory procedures. The SEC has no authority over the clearing activity in Treasury securities because such activity is performed by depository institutions which have clearing accounts with the Federal Reserve. However, the SEC registers national securities exchanges, such as the American Stock Exchange and the Chicago Board of Options Exchange, that trade options on Treasury securities. To obtain registration, options exchanges must show that they are organized to comply with the provisions of the Securities and Exchange Act and SEC rules and regulations, and the exchanges' rules must ensure fair dealing and protect investors. No federal regulator has authority to set margin

(collateral) requirements for Treasury securities transactions.[2]

The CFTC regulates exchange trading of futures contracts and options for futures contracts on Treasury securities.[3] As self-regulatory organizations (SROs), futures exchanges provide a marketplace and develop rules to implement CFTC regulatory oversight of the market. After CFTC approval, exchanges are required to enforce their rules. The CFTC ensures enforcement through daily market surveillance, sales practice reviews, minimum financial requirements, or anti-fraud and other enforcement activities.[4] Each futures exchange has a clearinghouse. The clearinghouse settles transactions executed on the floor and ensures clearinghouse-established margin requirements are met on a daily basis. The clearinghouse also helps control credit risks in futures transactions. It does this by acting as a third party in every futures trade--the buyer to every seller and the seller to every buyer.

Regulation of dealers and brokers by the SEC and bank regulators

One of the characteristics of the Treasury market that helps the Treasury to sell the public debt efficiently is that many different types of firms can participate in the market as dealers or brokers. One consequence of this diversity, however, is that different dealers or brokers come under different Federal regulatory procedures--or, in some cases, none at all. All Treasury securities dealers, except those non-primary, non-bank dealers who trade only in exempt securities, are

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[2]The Securities Exchange Act of 1934 gave the Federal Reserve authority to set margin requirements for securities transactions except for those involving exempt securities.

[3]Registration processing procedures for several groups of registrants, including those who trade for or advise the public, is conducted by the National Futures Association (NFA).

[4]Securities and Futures: How the Markets Developed and How They Are Regulated (GAO/GGD-86-26, May 15, 1986) contains a more detailed explanation of the role of the CFTC and the NFA.

subject to some regulatory mechanisms involving registration, recordkeeping and financial reporting requirements, examination of operations, and capital adequacy guidelines. However, these mechanisms are applied differently to different types of dealers.

One group of government securities dealers, including 12 of the primary dealers, is subject to full regulation by the SEC because these dealers also trade in regulated securities. The SEC, directly and through SROs, employs the regulatory measures discussed earlier to monitor dealer risk-taking and protect customer funds.[5] The SEC cannot prescribe rules directly governing the activities of Treasury securities dealers. However, the SEC can make rules to ensure the protection of customer accounts and to promote dealer responsibility (i.e., capital adequacy requirements). Therefore, the SEC does not separately analyze transactions in Treasury securities, but it does observe the transactions in the context of the dealers' total operations.

A second group of dealers, including 15 of the primary dealers, is subject to federal banking supervision because these dealers are also banks or subsidiaries of bank holding companies. Regulatory agencies include the OCC for national banks, the Federal Reserve for bank holding companies and state banks that are members of the Federal Reserve System, and the FDIC for other state banks. The focus of regulatory oversight of bank dealer operations is different from the SEC's oversight of dealers. Bank regulators focus on the bank dealers' securities trading activities to ensure that the banks properly manage their risks and conduct their operations on a sound and legal basis. The bank regulators' primary orientation is the safety and soundness of the bank as a whole.

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[5]Important SROs for the Treasury securities cash market are the New York Stock Exchange (NYSE) and the National Association of Securities Dealers (NASD). All of the diversified primary dealers in Treasury securities are members of the NYSE which serves as the primary regulator for these firms. The NASD regulates broker/dealers that must register because they conduct business in over-the-counter regulated securities in addition to their government securities business.

Bank regulators do not determine separate capital adequacy requirements for the bank's dealer operations. Instead, they measure the capital adequacy of the bank as a whole and evaluate the dealer operation to determine if it is contributing positively or negatively to the bank's profitability. According to an OCC official, in most cases the safety and soundness aspects of a bank dealer's activities are quickly determined. After that determination is made, the majority of the bank dealer department examination effort is spent on investor protection. OCC has conducted four public enforcement actions which have been based on investor protection issues involving U.S. government securities. Policies developed through the bank regulator supervisory process can become accepted as the appropriate way of doing business in the market, for example, in the securities lending and repurchase agreement areas.[6]

A third group of Treasury securities dealers, including nine of the primary dealers, is not subject to any formal regulatory oversight because these dealers trade only in unregistered securities and are not banks. These firms can be separate entities not affiliated with any other firms or they can be affiliated with a non-financial firm or a diversified financial corporation (firms in this latter group are called GSIs since their title usually includes the term "Government Securities, Inc."). These specialized firms are not subject to any of the mandatory federal regulatory activities applicable to registered dealers or bank dealers. Similarly, interdealer brokers in this market are not subject to any formal regulation.

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[6]Bank dealers must also register with the SEC if they are also municipal securities underwriters and dealers. The bank regulators are then required to enforce the requirements imposed by the Municipal Securities Rulemaking Board. These requirements are comparable to those imposed by SROs on registered securities dealers. To the extent a bank conducts its municipal securities activities in conjunction with its Treasury securities transactions, many of its personnel and systems involved with Treasury securities are subject to additional requirements and oversight. We did not attempt to measure the extent to which banks typically combine Treasury and municipal security operations. However, an OCC bank examination official told us that this combination is usually true for the bank dealers it regulates.

CFTC regulation of futures dealers and futures trading

The CFTC regulates persons who solicit and accept customer orders for execution on designated futures markets in Treasury securities by registering such firms and individuals. The CFTC provides market surveillance and investigates and prosecutes alleged violations of the Commodity Exchange Act and CFTC regulations. The CFTC has delegated some of its registration and auditing responsibilities to the National Futures Association (NFA) which is a self-regulatory organization. In addition, the CFTC regulates exchange trading of futures contracts for Treasury securities by approving the rules under which an exchange proposes to operate, by monitoring exchange enforcement of those rules, and by reviewing the terms of proposed new futures contracts. By monitoring large traders' and registrants' activities, the CFTC and the exchanges attempt to anticipate and prevent market disruptions caused by abusive trading practices or extraordinary economic phenomena. Additional oversight is provided by the clearinghouse for each exchange.

Federal Reserve oversight of the market

Although the Federal Reserve does not have explicit legal authority to supervise the government securities market, it is authorized to conduct dealer and market surveillance incidental to other activities expressly authorized by law. This authority arises under Section 4 of the Federal Reserve Act (12 U.S.C. §341) which permits Reserve banks to exercise "such incidental powers as shall be necessary to carry on the business of banking within the limitations prescribed by this Act." The most notable authority is to engage in open market operations, and to act as fiscal agent of the United States. However, dealer and market surveillance is also incidental to the Federal Reserve Bank of New York's authority to maintain accounts for foreign governments and central banks and to the authority of the Board of Governors to require reports of assets and liabilities from depository institutions.

The Federal Reserve Bank of New York's dealer surveillance is intended to provide the FRS some assurance that it is dealing with reliable dealers and that these dealers will continue to observe prudent business practices. The FRS's objective in appointing dealers to the primary dealer list is to have a stable community of financially sound dealers to (1) buy and sell Treasury securities for its own account in its conduct of monetary policy and (2) serve the Treasury's financing needs by

providing an adequate market for its securities. According to the Federal Reserve Bank of New York, each primary dealer must:

--actively engage in the distribution of U.S. Treasury securities to investors (this includes continuously bidding at Treasury auctions);

--demonstrate a willingness to make markets at all times in a full range of Treasury securities and have an adequate customer base and trading volume;

--have capable management of proven reputation and character;

--have sufficient business capacity, trained personnel, managerial controls, and expertise in trading and risk management;

--have an adequate capital base relative to the risks taken in fulfilling its market-making responsibilities; and

--show a long-term commitment to the market by devoting sufficient capital and other resources thereto.

Aspiring primary dealers demonstrate their capabilities during a trial period of at least 6 months. Although the Federal Reserve informally collects information on the firm's activities and reputation during this trial period, it does not require the firm to furnish either the detailed information on principal employees or the fingerprints and criminal record checks that SROs require of registered broker-dealers. Once a firm is approved as a primary dealer by the manager of the Open Market Trading Account, it will retain this status as long as, in the judgment of Federal Reserve officials, it continues to meet their criteria.

The Dealer Surveillance Unit of the New York Federal Reserve Bank was established in 1982 to monitor more closely the activities of primary dealers and market practices. Techniques used include desk review and analysis of dealer financial statements and daily activity reports of transactions and positions to identify abnormal dealer behavior and potentially unhealthy trends, telephone inquiries to obtain additional data or explanations for anomalies, and at least annual visits to dealers to enhance understanding of the dealers' operations.

The Dealer Surveillance Unit evaluates capital adequacy in relation to the credit and market risks the dealers assume. The

securities positions reported daily by primary dealers are multiplied by factors representing credit risk exposure and typical price changes that could occur in each security category reported. The total of these products for each dealer is an estimate of the capital needed. This amount is compared to the dealer's available liquid capital to arrive at a ratio of liquid capital to risk.[7] If a dealer's liquid capital does not exceed its risk exposure by an appropriate margin,[8] the surveillance unit's officers consider followup action with the dealer.

The Federal Reserve does not have regulatory control and enforcement power over government securities dealers comparable to the SEC's power over registered dealers (directly and through SROs), the bank regulators' power over bank dealers, or the CFTC's power over futures dealers. The Federal Reserve does, however, have the threat of cancelling primary or reporting dealer status as a means to ensure voluntary compliance with its requirements.

The Federal Reserve has no direct oversight role for non-primary dealers. However, in 1984, the Federal Reserve instituted a voluntary reporting program for non-primary government securities dealers. The program calls for periodic (usually monthly) reporting of securities positions, transactions, and financing, and is intended to assist the Federal Reserve in monitoring practices and standards in the non-primary dealer sector of the market. In November 1984, 28 non-primary dealer firms were reporting monthly to the Federal Reserve. As of June 1, 1986, 26 were reporting monthly and 7 were reporting daily.

On May 20, 1985, the Federal Reserve issued voluntary capital adequacy guidelines aimed at those dealers who are not

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[7]If the dealer is a commercial bank, the Federal Reserve surveillance staff relies on the bank regulators to evaluate the bank's overall capital level in conjunction with formal bank supervision activities.

[8]The Federal Reserve Bank of New York's Capital Adequacy Guidelines for Government Securities Dealers (May 20, 1985) recommend that liquid capital always exceed measured risks by 20 percent (a ratio of 1.2 to 1). This guideline is intended for unregulated and unsupervised dealers, but the Dealer Surveillance Unit considers follow-up action for primary dealers when this standard is approached.

already subject to federal oversight by the SEC, bank regulators, or the Federal Reserve. The guidelines are intended to provide customers of unsupervised dealers with an additional means for determining that dealers are conducting their business according to recognized prudential standards.

Because the Federal Reserve cannot require compliance or reporting and cannot make on-site examinations to evaluate dealers' condition, the guidelines were made voluntary. The Federal Reserve encourages market participants--dealers, clearing and lending banks, and customers--to enforce the standard by requiring their unsupervised counterparties to

--certify that they will adhere to the standards on a continuous basis,

--prepare audited financial statements confirming compliance as of the audit date, and

--produce a letter from the firms' certified public accountants stating that they found no weaknesses in the dealers' internal systems and controls with respect to the standard.

Federal oversight and protection for institutional investors

Regulation of certain types of institutional investors is based on responsibility for the safety and soundness of institutions in which there is a considerable degree of public interest. This regulation is imposed by federal and state government agencies to preserve the soundness of financial institutions, governmental units, pension funds, and other trustees of the public's money.

Oversight of institutional investor practices involves such tasks as

--defining acceptable products, services, and transactions and the way and extent to which they can be used;

--establishing sound financial standards for participants in such areas as margin requirements and capital adequacy;

--monitoring investment manager compliance; and

--taking action against non-compliance.

In addition to providing oversight of institutions, federal insurance funds protect investors from certain types of losses.

Several federal agencies provide regulation and supervision over major market participants. The agencies that provide regulations and guidelines to the institutions they supervise are the bank regulatory agencies (OCC, FRB, FDIC); the Federal Home Loan Bank Board (FHLBB); the National Credit Union Administration (NCUA); the Federal Financial Institutions Examination Council (FFIEC); and the Department of Labor for pension funds. These agencies evaluate the use of certain investment and financing transactions, such as futures, forwards contracts, repurchase agreements, and reverse repurchase agreements through periodic examinations.

The FHLBB provides an example of this type of regulation. FHLBB rules are explicit about the procedures that savings and loans should follow in conducting repurchase and reverse repurchase agreement transactions. Specifically, savings and loans are to follow FHLBB guidelines for proper collateral levels to make sure they obtain adequate collateral to cover the amount of money loaned and not overcollateralize when borrowing funds.

In addition, FHLBB rules and regulations for federally chartered savings and loan institutions limit these S&Ls to investing in repo loans with borrowers which are financial institutions insured by the FDIC or the Federal Savings and Loan Insurance Corporation or which are broker/dealers registered with the SEC. However, several S&Ls lost money through improperly arranging repo transactions with Bevill, Bressler, and Schulman Asset Management Company, which was an unregistered dealer subsidiary of a registered dealer firm. Thus, the existence of regulation in this or other areas does not ensure that proper practices are followed.

SEC investigates
fraudulent activities

Because anti-fraud provisions apply with equal force to transactions in otherwise exempted government securities,[9] the SEC may make rules implementing certain anti-fraud provisions of the federal securities laws and investigate government securities dealers for alleged violations. Using this authority, the SEC has been able to take action against certain government securities dealers. Generally, this action occurs after such dealers' financial problems have become evident.

Section 17(a) of the Securities Act and Section 10(b) of the Exchange Act are the anti-fraud statutes governing securities activities. Taken together, they prohibit misstatements or misleading information and fraudulent or manipulative acts and practices in the offer, purchase, and sale of securities. The SEC anti-fraud rule applicable to all securities dealers is rule 10b-5, which essentially restates the provisions of the two laws.[10]

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[9]As we were finalizing this report, the United States Court of Appeals for the Second Circuit ruled that fraud in connection with the purchase or sale of repurchase agreements is also subject to action under the Federal securities laws (Securities and Exchange Commission v. Drysdale Securities Corporation, 785 F.2d 38 (2d Cir. 1986)). The applicability of the anti-fraud provisions to repurchase agreements has been under question since the SEC brought action against Drysdale Government Securities, Inc. in May 1982.

[10]Rule 10b-5 provides

"It shall be unlawful for any person, directly or indirectly, by the use of any means or instrumentality of interstate commerce, or of the mails, or of any facility of any national securities exchange,

(1) to employ any device, scheme, or artifice to defraud,

(2) to make any untrue statement of a material fact or to omit to state a material fact necessary in order to make the statements made, in the light of the circumstances under which they were made, not misleading, or,

(3) to engage in any act, practice, or course of business which operates or would operate as a fraud or deceit upon any person, in connection with the purchase or sale of any security."

The SEC has broad authority to conduct investigations concerning possible fraud. Such investigations can be conducted with the voluntary compliance of the dealer or they may require the SEC to use its subpoena power if the dealer refuses to cooperate. An SEC Enforcement Division official described what happens when a subpoena is required:

1) On the basis of preliminary information or allegations, the SEC appoints staff and grants them power to issue subpoenas to obtain necessary data.

2) Staff issues subpoenas if necessary.

3) If the dealer chooses not to comply, the SEC can sue in district court to enforce the subpoena--the dealer must comply if the court so orders.

After examining the records provided, the SEC can seek a District Court order for the dealer to stop the improper practice or institute administrative proceedings as appropriate.

The SEC's ability to use this process to investigate alleged fraudulent activity of unregistered dealers came into question during hearings on regulatory alternatives for the government securities market.[11] The SEC had been trying to examine the books of E.S.M. Government Securities since 1981 because of suspected fraudulent activity. However, E.S.M. was able through legal action to prevent SEC from examining its operations. At the hearings, the SEC, FRB, and dealers concurred that the SEC would be better able to detect and deter fraud by unregulated dealers such as E.S.M. if these dealers were subject to certain requirements. Specifically, these witnesses supported registration, barring from business those guilty of violating securities laws, recordkeeping requirements, and the requirement that these dealers submit to periodic and surprise inspections by a Federal agency or a self-regulatory agency. These measures would provide an early warning of potential problems and allow the SEC to develop preliminary information on a firm's improper practices without opening a formal investigation.

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[11]Hearings before the Subcommittee on Telecommunications, Consumer Protection, and Finance of the Committee on Energy and Commerce, House of Representatives: Regulating Government Securities Dealers.

SUMMARY OF THE REGULATORY FRAMEWORK

The complex regulatory framework that exists in the Treasury securities market is summarized in table 4.1. No single agency has overall rulemaking or supervisory authority for the market, and firms dealing in exempt securities operate outside of most of the existing regulatory structure. All told, several federal agencies regulate or directly influence significant aspects of the market--the Treasury, Federal Reserve, SEC, CFTC, FDIC, FHLBB, NCUA, and the Labor Department.

Table 4.1

Federal Regulation, Supervision, and Oversight of the Treasury Securities Market and of Related Markets

	Activity/participant	Treasury	FRS fiscal agent, open market and market surveillance operations	SEC through SRO	Bank regulators. FRS, OCC, and FDIC	FHLBB	CFTC through SRO	SEC: anti-fraud investigation	NCUA	DOL
A.	Define product & uses	X	X	X[e]			X	X		
B.	Transaction processing (clearing)	X	X	X[d]	X		X	X		
C.	Dealer activity									
	--Primary dealer									
	-registered with SEC		X	X			X[f]	X		
	-bank[a]		X		X[c]		X[f]	X		
	-government securities specialist[b]		X				X[f]	X		
	--Non-primary dealer									
	-registered with SEC			X			X[f]	X		
	-bank[a]				X[c]		X[f]	X		
	-government securities specialist[b]						X[f]	X		
	--Futures traders that are not also cash market dealers						X	X		
D.	Broker activity									
	--Treasury & registered securities			X			X	X		
	--Treasury securities only							X		
E.	Investor regulation									
	--Bank & Trust Co.				X					
	--S&L					X				
	--Credit unions								X	
	--Pension funds									X

Notes.

[a]Includes bank dealers that are subsidiaries of bank holding companies.

[b]Can be a specialist firm or an affiliate or subsidiary of a multipurpose financial entity.

[c]Choice of regulation depends on how bank is chartered.

[d]Clearing of transactions in derivative products.

[e]Limited to products that can be classified as securities.

[f]Applicable only if firm utilizes futures markets.

Acronyms used in heading:

FRS - Federal Reserve System
SEC - Securities and Exchange Commission
SRO - Self-regulatory Organization
OCC - Office of the Comptroller of the Currency
FDIC - Federal Deposit Insurance Corporation
FHLBB - Federal Home Loan Bank Board
CFTC - Commodity Futures Trading Commission
NCUA - National Credit Union Association
DOL - Department of Labor

IMPLICATIONS FOR REGULATION

Legislative proposals mentioned in Chapter 1 would leave in place much of the regulatory framework that has been summarized in this chapter. The principal changes would be that

(1) an agency or a group would have authority to set rules for market conduct in previously exempt Treasury and government-backed securities, and

(2) all dealers, unless explicitly exempted, would be required to register with the SEC or the appropriate regulatory body; join an SRO if they are currently unsupervised; and be subject to financial reporting requirements, financial responsibility requirements, and periodic inspection by the cognizant SRO or regulator.

Under these proposals, all dealers in Treasury and other government securities would receive regulatory attention similar to that provided to corporate securities brokers/dealers --a level of attention greater than that provided to activities in CDs, bankers acceptances, and commercial paper, which remain unregulated.

The major area of disagreement in the legislative proposals concerns whether the rulemaker should be

--the Treasury, because as issuer of the debt it has the most to lose from market disturbances;

--the Federal Reserve, because of its fiscal agent role, market knowledge, and direct involvement in trying to maintain stable markets;

--a newly created rulemaking board consisting of dealers and investors supervised by one or more of the above federal agencies.

Regardless of which agency or organization is given responsibility for implementing new rulemaking and supervisory authority, an element of additional complexity can be anticipated. The proposed legislation referred to strives to reduce overlapping responsibilities among regulators. For example, the Government Securities Rulemaking Board proposed in H.R. 2032 would have no inspection and enforcement authority--banks and regulated securities firms would continue to be

supervised as they are now. However, the ultimate effectiveness of the changes depends in part upon a high degree of cooperation among rulemakers and supervisors.

Cooperation among regulators will also continue to be important because, under the proposed legislation, firms operating in the government securities market can still segment their operations in such a way that different regulators are responsible for different parts of a firm's activities--and some activities (for example, those dealing with exempt money market instruments, such as commercial paper) may be entirely exempt from regulation. The result can be that the overall health of a firm, based upon the interrelationship of its various parts (including separate constituent parts within a holding company or other corporate structure) may escape review.

Although the importance of cooperation among the regulators cannot be denied, experience in the area of financial regulation suggests that it is not easy to accomplish. Our evaluation of the Federal Financial Institutions Examination Council, established in 1979 to coordinate the activities of the five federal regulators of depository institutions, found that the degree of coordination actually accomplished by this statutory body was quite modest.[12] The degree of cooperation among agencies will no doubt remain an oversight problem for some time.

Other than bringing all dealers (including exempt primary dealers) within a basic regulatory framework, the proposed legislation makes no change in the primary dealer system or in the oversight role of the Federal Reserve Bank of New York, except that it presumably would drop its information gathering from non-primary dealers. Although the provisions concerning rulemaking authority in the bills being considered by Congress would permit special arrangements applicable to certain classes of firms, the report accompanying H.R. 2032 specifically noted that the Federal Reserve should not exempt primary dealers as such. Since the primary dealer system is essentially an informal one, there is no way to know at this point how much it might be affected by the adoption of a more formal regulatory system for all market participants.

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[12]Federal Financial Institutions Examination Council Has Made Limited Progress Toward Accomplishing Its Mission (GAO/GGD-84-4, Feb. 3, 1984).

APPENDIX I

U.S. HOUSE OF REPRESENTATIVES
SUBCOMMITTEE ON DOMESTIC MONETARY POLICY
OF THE
COMMITTEE ON BANKING, FINANCE AND URBAN AFFAIRS
NINETY-EIGHTH CONGRESS
WASHINGTON, D.C. 20515

August 12, 1983

Charles A. Bowsher
Comptroller General
U.S. General Accounting Office
Washington, D. C. 20548

Dear Mr. Bowsher:

Slightly more than 18 months ago, the Subcommittee on Domestic Monetary Policy undertook to assess the management of the national debt by the Department of the Treasury and the Federal Reserve System acting as its fiscal agent. The focus has been upon the impact of debt management activities on credit availability, interest rate movements, and monetary policy in general. These hearings explored the mechanisms by which the debt is actually funded, the objectives which the Treasury considers when financing the debt, and how these objectives are viewed by the various participants. As a part of that undertaking, the Subcommittee further examined the structure and function of those domestic institutions engaged in the primary and secondary purchase and sale of U.S. government debt instruments. The Subcommittee's initial impressions are that this market is the focus of the most powerful money decisions in this country. Large market participants are relatively few in number and are largely unregulated. The dealer participants enjoy special relationships with both the Treasury and the Fed through a variety of unique mechanisms that have a very large impact on the Treasury debt financing and Fed open market operations.

These relationships, the regulatory schemes, the impact on money and financial decisions, have all become a source of increasing concern, particularly in light of the recent failure and near failures of several security firms and certain unusual activities of other firms. These activities have prompted the Federal Reserve Bank of New York to increase its regulatory effort. This concern has also been increased by recent court decisions which have complicated the position of repurchase agreements in bankruptcy proceedings.

In light of these issues, I would be most appreciative if the GAO would update and expand upon its 1971 report entitled "Improvements Needed in the Federal Reserve Reporting System for Recognized Dealers in Government Securities" (B-169905) with a view towards identifying the strengths and weaknesses in the present government security dealer

APPENDIX I

system. I am particularly interested in assurances that the Federal Reserve, acting as the nation's central bank, possesses the capacity to maintain a safe, orderly, efficient and open market for U.S. government securities. Any recommendations which would be beneficial towards that end should be included in the Report. Among the areas I specifically would like to see covered are:

1. Capacity of the Federal Reserve for surveillance of government security dealers.

   What is the legal and other authority for this surveillance?

   What form should any surveillance take? Are reporting documents adequate? Is the information relevant to the current market, is it accurate, and is it sufficient?

   What is the current capacity of the Fed to detect unlawful or sham transactions?

   Should the Fed have, and does it need, additional and explicit regulatory authority?

2. Rationale of the reporting dealer system.

   Why do firms seek to become a primary reporting dealer?

   What is the profitability of reporting dealers vs. non-reporting dealers?

   What is the value of the current reporting dealer arrangement to the Federal Reserve; to the marketplace and the public; and, to the Treasury for the sale of government debt?

3. Standards applied by the Fed to dealers seeking reporting status.

   What are these standards now?

   What do these standards intend to accomplish?

   Are the standards adequate to the task?

   Are the standards consistently and uniformly applied?

   How do the standards impact on the size of the reporting dealer community?

   Should there be varying capital and reporting standards and requirements for different types and sizes of reporting dealers (include commercial banks, saving and loan associations, brokerage firms, and other dealers)?

   What minimum level of unimpaired capital should government security dealer firms possess at varying levels and types of operations?

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What actions should be taken when capital levels fall below standard, how quickly should any such actions be initiated, and by whom?

4. Relationship of government security dealers to their parent organization.

   What is the reason a parent corporation would create a separate subsidiary for the exclusive conduct of business in government securities?

   Should a government security dealer, which is a subsidiary of another corporation, be required to file consolidated financial statements setting forth the financial position of the parent corporation in addition to its own separate financial statement?

   Should the parent corporation's capital assets be available to the government security dealer subsidiary? What are the legal implications of such a proposal? How would this change the capital requirements of government security dealers generally and of those operating as subsidiaries in particular. Would it enhance or hinder the operations, safety and soundness of either the parent corporation or the government security dealer subsidiary? Would more firms be able to participate in the government securities business?

5. Relationship of government securities dealers among themselves.

   What is the nature of the government securities dealers trade association in the formulation of debt management advice to the Treasury?

   What steps have been taken to prevent collusion between dealers?

   What steps have been taken to protect against the unauthorized use of information garnered by dealers in their confidential relationships with the Federal Reserve and the Treasury?

As you may know, I have already begun preliminary conversations with your staff and I recognize that this project is an extensive and potentially time consuming undertaking. I want you to know, however, that I regard this study as extremely important to the work of this Subcommittee as it seeks to monitor the conduct of monetary policy. You will, therefore, have the full support and cooperation of the Subcommittee in carrying out this request consistent with existing legislation governing GAO investigations of the Federal Reserve.

Please address any questions and discussions concerning this request to Howard Lee, Staff Director of the Subcommittee. He may be reached at 226-7315.

Sincerely yours,

Walter E. Fauntroy
Chairman

GROWTH AND COMPOSITION OF THE FEDERAL DEBT

The amount of federal debt[1] to be financed, both new debt resulting from government deficits and old debt that must be rolled over, is one of the driving forces in the government securities market. In 1985, the Treasury needed to raise an average of over $4.8 billion a day in the credit markets.

In reviewing the federal budget deficits from 1970 to the present, one can see an upward ratcheting in their size, as measured in nominal dollars (see table II.1). From 1970 through 1974 the annual deficits averaged $14 billion, and from 1975 through 1984 they averaged $95 billion. The 1985 deficit was $212 billion. According to the Congressional Budget Office's (CBO) February 1986 estimate, from 1985 through 1991 they will average $162 billion. The federal debt has increased similarly (see table II.1). From 1970 through 1974 it increased at an average annual rate of $24 billion, and from 1975 through 1984 it rose at an average annual rate of $109 billion. The 1985 federal debt was over $1.8 trillion. According to the CBO's February 1986 estimate, from 1985 through 1991 the debt will increase at an average annual rate of $209 billion. In February 1986 CBO estimated the federal debt in 1991 would reach $3.3 trillion. The CBO estimates assumed no changes in current laws governing taxes or entitlement spending.

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[1]Federal debt comprises all securities issued by the U.S. Treasury and a small amount of debt issued in the past by executive branch agencies. Securities issued by the Treasury (public debt securities) comprise marketable issues held by the public, including the Federal Reserve and foreign investors; non-marketable issues in the form of savings bonds, foreign series securities; state and local government series securities; and non-marketable issues for government accounts.

APPENDIX II

Table II.1

Federal Budget Deficits, Debt, and Net Interest Payments

1970-91

End of fiscal year	Net interest payment[a]	Budget deficit[b]	Gross federal debt
	(billions)		
1970	$ 14.4	$ 2.8	$ 382.6
1971	14.8	23.0	409.5
1972	15.5	23.4	437.3
1973	17.3	14.9	468.4
1974	21.4	6.1	486.2
1975	23.2	53.2	544.1
1976	26.7	73.7	631.9
1977	29.9	53.6	709.1
1978	35.4	59.0	780.4
1979	42.6	40.2	833.8
1980	52.5	73.8	914.3
1981	68.7	78.9	1,003.9
1982	84.9	127.9	1,147.0
1983	89.8	207.8	1,381.9
1984	111.1	185.3	1,576.7
1985	129.4	212.0	1,827.0
1986 est.	138.6	208.0	2,114.0
1987 est.	145.0	181.0	2,362.0
1988 est.	154.4	165.0	2,607.0
1989 est.	157.6	144.0	2,842.0
1990 est.	159.1	120.0	3,070.0
1991 est.	$160.3	$104.0	$3,293.0

[a]Interest paid to government trust funds is counted as receipt and an outlay; it thus has no effect on net interest payments.

[b]Includes off-budget deficits.

Source: The Economic and Budget Outlook: Fiscal years 1987-1991, Congressional Budget Office, February 1986.

Net interest payments on the federal debt are expected to increase over the next 6 years (see table II.1). According to the CBO's February 1986 estimate, the payments will increase from $129 billion in 1985, to $160 billion in 1991.

Table II.2 shows interest payments, total deficits, and debt held by the public as a percentage of Gross National Product (GNP). Between 1981 and 1985, the budget deficit expressed as a percentage of the GNP doubled, but in February 1986 the CBO estimated that the percentage would remain under the 1985 level of 5.4 percent of GNP and decline through 1991.

Table II.2

Primary Deficit, Interest Payment on Debt, Total Deficit, and Debt Held by Public

Fiscal year	Interest payment on debt[a]	Total deficit	Debt held by Public
	-----(as percentage of GNP)------		
1970	1.5	0.3	29.4
1971	1.4	2.2	29.5
1972	1.4	2.1	28.7
1973	1.4	1.2	27.4
1974	1.6	0.4	25.1
1975	1.6	3.6	26.8
1976	1.6	4.5	29.3
1977	1.6	2.9	29.6
1978	1.7	2.8	29.2
1979	1.8	1.7	27.3
1980	2.0	2.9	27.8
1981	2.4	2.7	27.5
1982	2.8	4.2	30.5
1983	2.8	4.2	30.5
1984	3.1	5.2	36.7
1985	3.3	5.4	38.4
1986 (est.)	3.3	5.0	41.0
1987 (est.)	3.2	4.0	42.2
1988 (est.)	3.2	3.4	42.7
1989 (est.)	3.0	2.8	42.3
1990 (est.)	2.8	2.1	41.4
1991 (est.)	2.7	1.7	40.2

[a]Includes interest payment to Federal Reserve.

Source: Economic Report of the President, February 1986; Congressional Budget Office, The Economic and Budget Outlook: Fiscal Years 1987-1991, February 1986; The United States Budget in Brief, fiscal year 1987.

COMPOSITION, SALES, AND OWNERSHIP OF DEBT

Most of the federal debt is composed of marketable, interest-bearing Treasury securities held by the public (see

table II.3). Federal Reserve holdings of this debt are counted as publicly held. In 1985, marketable debt accounted for 74.4 percent of the federal debt, an increase of 19.6 percentage points since 1974. Marketable debt in 1985 was composed of 28.2 percent Treasury bills, 57.1 percent Treasury notes, and 14.7 percent Treasury bonds. (See table II.4.) During this period, the average time to maturity of marketable Treasury securities (excluding Federal Reserve holdings) increased to 4 years and 11 months in 1985. It is this marketable, interest-bearing Treasury debt with which this briefing report is mainly concerned.

Table II.3

Composition of Federal Debt, 1970-85

End of fiscal year	Federal debt[a]	Interest bearing public debt		Marketable debt as percentage of federal debt
		Marketable[b]	Non-marketable	
	(billions)			
1970	$ 383.4	$ 232.6	$ 136.4	60.7
1971	410.3	245.5	150.8	59.8
1972	437.3	257.2	168.2	58.8
1973	468.4	263.0	193.4	56.1
1974	486.2	266.6	206.7	54.8
1975	544.1	315.6	216.5	58.0
1976	631.9	392.6	226.7	62.1
1977	709.1	443.5	254.1	62.5
1978	780.4	485.2	281.8	62.2
1979	833.8	506.7	312.3	60.8
1980	914.3	594.5	311.9	65.0
1981	1,003.9	683.2	313.3	68.1
1982	1,147.0	824.4	316.5	71.9
1983	1,381.9	1,024.0	351.8	74.1
1984	1,576.7	1,176.6	383.0	74.6
1985	1,827.5	1,360.2	460.8	74.4

[a]Includes very small amounts of non-Treasury securities and non-interest bearing debt not shown separately.

[b]Includes Treasury bills, notes, and bonds.

Sources: Federal Reserve Bulletin, various issues.

Table II.4

Marketable Treasury Bills, Notes, and Bonds

End of fiscal year	Bills	Notes	Bonds	Total	Average maturity[a]
	------(billions)------				(years/months)
1979	$161.4	$274.2	$ 71.1	$ 506.7	3/7
1984	356.8	661.7	158.1	1,176.6	4/6
1985	384.2	776.4	119.5	1,360.2	4/11

[a]Does not include marketable Treasury securities held by the Federal Reserve.

Sources: Federal Reserve Bulletin, various issues, and Economic Report of the President, February 1985.

Not only must new Treasury securities be issued to finance federal deficits, but maturing debt also needs to be rolled over or refunded. Table II.5 shows new issues, refundings, and total issues of marketable, interest-bearing Treasury securities from 1976 through 1985. Total issues rose from $451 billion in 1976 to $1,160 billion in 1985, an increase of 157 percent.

Table II.5

Gross Issues of Marketable U.S. Treasury Securities

Fiscal Year	New issues	Refunding of maturing debt	Total issues
	(billions)		
1976	$ 72.8	$ 378.6	$ 451.4
1977	38.2	387.6	425.8
1978	46.0	399.7	445.7
1979	27.3	428.4	455.7
1980	83.6	481.4	565.0
1981	90.6	580.6	671.2
1982	143.1	655.5	798.6
1983	202.3	783.2	985.6
1984	164.8	861.5	1,026.3
1985	$ 173.2	$ 986.4	$1,159.7

Source: New Money from Marketable Issues, Office of Government Finance and Market Analysis, Treasury Department, May 15, 1986.

In addition, the ownership of the debt has been changing over the last 15 years (see table II.6). The primary change in debt ownership has been a shift of about 29 percentage points from federal government and individual accounts to foreign, state, local government, and miscellaneous accounts (e.g., S&Ls, credit unions, and corporate pension trust funds).

APPENDIX II

Table II.6

Estimated Percentage Ownership of Public Debt Securities 1970 through 1985

End of fiscal year	Total[a]	U.S. government accounts	Federal Reserve	Foreign and international	Private financial institutions[b]	Corporations	Individuals	State and local governments	Other[c]
1970	100.0	25.7	15.6	4.0	16.8	3.0	22.2	6.6	6.2
1971	100.0	25.8	16.4	8.2	17.7	2.5	19.6	5.4	4.3
1972	100.0	26.1	16.7	11.5	16.7	2.2	17.2	6.3	3.3
1973	100.0	27.0	16.4	13.0	15.0	2.1	16.6	6.3	3.7
1974	100.0	29.1	17.0	12.0	13.0	2.3	17.0	6.0	3.7
1975	100.0	27.3	15.9	12.4	14.9	2.6	16.3	6.0	4.7
1976	100.0	24.1	15.2	11.3	17.5	4.0	15.5	6.3	6.1
1977	100.0	22.4	15.0	13.7	17.2	3.3	14.9	7.6	6.1
1978	100.0	21.8	14.9	15.7	15.0	2.8	14.2	8.8	6.9
1979	100.0	22.7	14.0	15.1	13.8	2.7	14.0	8.1	9.7
1980	100.0	21.8	13.3	13.9	14.8	2.9	13.6	8.5	11.3
1981	100.0	20.9	12.5	13.1	15.2	1.8	11.0	10.0	15.6
1982	100.0	18.9	11.8	12.3	16.7	1.9	10.1	10.7	17.5
1983	100.0	17.4	11.3	11.6	18.1	2.6	9.4	10.9	18.8
1984	100.0	16.7	9.9	11.2	16.2	3.0	9.4	N/A	N/A
1985	100.0	17.3	9.3	11.5	12.0	3.1	8.3	N/A	N/A

[a]Totals may not add to 100.0 due to rounding.

[b]Includes commercial banks, mutual savings banks, and insurance companies through 1980. From 1981 on, excludes mutual savings banks, but includes money market funds.

[c]Includes S&Ls, nonprofit institutions, credit unions, corporate pension trust funds, dealers and brokers, certain U.S. government deposit accounts, and U.S. government sponsored agencies. From 1981 on, also includes mutual savings banks.

N/A = Not availble.

Source: Treasury Bulletin, various issues. Data for Federal Reserve and U.S. government accounts are actual holdings; data for other groups are Treasury estimates.

Gross versus publicly held debt

Debt held in government accounts arises mainly from government trust fund surpluses that are invested in Treasury

securities. Because the unified federal budget is on a cash rather than an accrual basis, the effect of the trust fund surpluses is to increase current receipts. That is, the surpluses represent a tax which lowers current deficits, while the future liabilities they represent would tend to raise future deficits.

Trust fund surpluses would not represent much of a financing consideration if they stayed near their $11.0 billion yearly average in the 1970s. However, in 1985 a military retirement trust fund was established that will, according to CBO, start boosting the annual trust fund surpluses from $28 billion in 1984 to an estimated $109 billion in 1989. In addition, surpluses in the social security trust fund, which have been very small and even negative at times, are projected to start growing in the 1990s and beyond. For example, using "average" assumptions, the surpluses in the social security trust funds (Old Age and Survivors Insurance and Disability Insurance) are projected to increase from $186.4 billion in 1990 to $1,329.2 billion in 2000. When the surpluses are needed to pay trust fund benefits, the outlays represent a factor tending to increase the consolidated budget deficit of the government.

APPENDIX III

BASIC INFORMATION ABOUT MARKETABLE TREASURY SECURITIES

Individuals can purchase marketable Treasury securities from local financial institutions, such as banks or securities dealers, or in person or by mail from Federal Reserve banks or the Department of the Treasury. If purchased through a financial institution or a brokerage firm, the collection and payment method will be determined by that institution. Listed here is basic information on purchasing Treasury bills, notes, and bonds directly from the Treasury or Federal Reserve Banks and Branches. A new book-entry system, designed primarily for individuals, is scheduled to become operational in mid-1986. Procedures for purchasing Treasury securities from local financial institutions are determined by each institution.

BILLS	NOTES AND BONDS
Issuance	Issuance
Treasury bills are issued by book-entry form (i.e., on computer records).	Treasury notes and bonds are issued in book-entry and registered (i.e. paper certificates) form. After mid-1986 all new notes and bond will be issued in book-entry form only.
Bills may be obtained directly from the Treasury or through a Federal Reserve Bank or a financial institution.	If book-entry, they are obtained only through a financial institution. If registered, they are obtained through the Treasury, a Federal Reserve Bank, or a financial institution. After mid-1986, book-entry notes and bonds may be purchased at the Treasury or a Federal Reserve Bank.
Bills are issued at a discount. The investor pays the face value when submitting a bid. A check for the discount as set by the auction is sent when the bill is issued and the face value is returned at maturity.	Issued at face value or a premium or discount from face value as determined by auction. The face value is paid when bid is submitted. A check for discount or a letter requesting premium payment is sent when the notes or bonds are issued.

APPENDIX III

BILLS

Denomination

$10,000 minimum, thereafter in multiples of $5,000.

Terms

3 months (13 weeks).
6 months (26 weeks).
1 year (52 weeks).

Sales

Treasury bills are sold by an auction process. 3-month and 6-month bills are auctioned every Monday unless Monday is a holiday, in which case they are auctioned the following Tuesday. One-year bills are usually auctioned every 4 weeks on a Thursday. The usual deadline for submission of tenders is 1:00 p.m., Eastern time on the day of the auction. Non-competitive tenders submitted by mail will be considered timely, provided they are postmarked no later than the day prior to the auction and are received by the issue date.

NOTES AND BONDS

Denomination

Treasury notes and bonds, whether book-entry or registered, may be purchased in denominations of $1,000, $5,000, $10,000, and $1,000,000, with the exception of notes with terms of less than four years, which have a $5,000 minimum denomination.

Terms

Notes have a term of at least one year but not more than ten years. Bonds have terms of more than ten years.

Sales

While the schedule for the sale of notes and bonds may vary, during recent years the Treasury has generally observed the following financing schedule:

(1) Two-year notes are usually issued at the end of each month;
(2) Four-year notes are usually issued every three months in late March, June, September and December;
(3) Five-year two-month notes are usually issued every three months in early January, March, July and October.
(4) Seven-year notes are usually issued every three months in early January, April, July and October.
(5) On the 15th day of February, May, August and

APPENDIX III

BILLS	NOTES AND BONDS
	November, the Treasury usually issues a three year note, a ten year note, and a thirty year bond.
	Tenders must be received at Federal Reserve Banks or Branches, or at the Treasury, by the deadline established in the public announcement, usually 1:00 p.m., Eastern time. Non-competitive tenders submitted by mail will be considered timely, provided they are postmarked no later than the day prior to the auction and are received by the issue date.
Interest	Interest
The price and the discount rate are not known prior to the auction since they are determined by competitive bidding. Refund (discount) checks will be mailed on the issue date, usually the Thursday following a Monday auction. The discount represents interest to the owner at maturity.	The price and the coupon rate are not known prior to the auction since they are determined by competitive bidding.
If purchased directly through the Treasury, the Treasury will mail the check. If purchased through a Federal Reserve Bank, the Federal Reserve Bank will mail the check.	Interest is paid semi-annually by the Federal Reserve Bank and passed through by a financial institution holding book-entry accounts. Interest for registered securities is paid by mailed checks.

APPENDIX III

BILLS	NOTES AND BONDS
For bills purchased by investors under the proposed Treasury Direct Book-Entry Security System, discount payments would be by electronic fund transfer to the customer's bank account.	For notes and bonds purchased by investors under the proposed Treasury Direct Book-Entry Security System, interest payment would be by electronic fund transfer to the customer's bank account. A semi-annual interest check is mailed automatically from the Treasury for definitive issues.
Principal Payment	**Principal Payment**
The principal on Treasury bills is paid on the maturity date through the issuance of a check to the owners of record on the Treasury's book-entry system.	The principal on Treasury notes and bonds is paid on or after the maturity date upon presentation of the definitive security. After receipt and examination of the securities a check is mailed to the owner. For notes and bonds purchased by investors under the proposed Treasury Direct Book-Entry Security System, principal payments would be made by electronic funds transfer to the customers' bank account.
Taxes	**Taxes**
Income in most cases is not considered earned until the bill has matured or unless it's sold prior to maturity.	Income is considered earned each year.
Exempt from state and local income taxes; must pay federal taxes.	Exempt from state and local income taxes; must pay federal taxes.

LIST OF GOVERNMENT SECURITIES PRIMARY DEALERS[a] AND BROKERS

Bank Dealers

Bank of America NT&SA
Bankers Trust Company
Chase Manhattan Government Securities, Inc.
Chemical Bank
Citibank, N.A.
Continental Illinois National Bank and Trust Company of Chicago
Crocker National Bank
First National Bank of Chicago
First Interstate Bank of California
Harris Trust and Savings Bank
Manufacturers Hanover Trust Company
Morgan Guaranty Trust Company of New York
Carroll McEntee & McGinley Incorporated
Irving Securities, Inc.
The Northern Trust Company[b]

Registered Dealers

Bear, Stearns & Co., Inc.
Donaldson, Lufkin & Jenrette Securities Corporation
The First Boston Corporation
Goldman, Sachs & Co.
E.F. Hutton & Company, Inc.
Kidder, Peabody & Co., Incorporated
Morgan Stanley & Co., Incorporated
Paine Webber Jackson & Curtis, Incorporated
Prudential-Bache Securities, Inc.
Salomon Brothers, Inc.
Dean Witter Reynolds, Inc.
Greenwich Capital Markets, Inc.

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[a]Primary dealer status is determined solely by the Federal Reserve Bank of New York.

[b]The Northern Trust Company was a primary dealer during the period of our review. The Federal Reserve Bank of New York removed this firm from the list in May 1986. As of June 1, 1986, there were 35 primary dealers.

Unregistered Dealers

Discount Corporation of New York
Drexel Burnham Lambert Government Securities, Inc.
Aubrey G. Lanston & Co., Inc
Lehman Government Securities, Inc.
Merrill Lynch Government Securities, Inc.
Wm. E. Pollock Government Securities, Inc.
Refco Partners
Smith Barney Government Securities, Inc.
Kleinwort Benson Government Securities

Inter-Dealer and Retail Screen Bokers

Chapdelaine & Co., Inc.
Fundamental Brokers, Inc.
Garban Ltd.
Hilliard Farber and Company, Inc.
Liberty Brokerage Inc.
MKI Government Brokers, Inc.
RMJ Securities Corporation
Cantor Fitzgerald Securities Corp. (Telerate - available to public)
Newcomb Securities Company, Inc. (Reuter - available to public)

Source: The Federal Reserve Bank of New York provided the list of dealers. We identified brokers during the course of our work.

APPENDIX V

DESCRIPTION OF FUTURES AND OPTIONS MARKETS AND HOW DEALERS USE THEM

In addition to the cash market for U.S. government securities, futures and options markets have developed. Primary dealers are major traders in these markets. This appendix discusses how the interest rate futures and options markets developed and function and how dealers use them.

GROWTH OF FUTURES, OPTIONS, AND OPTIONS ON FUTURES

The cash market for U.S. government securities is one of the largest in the world. In 1985, dealers reporting to the Federal Reserve conducted an average of $75 billion worth of transactions each day. In the first quarter of 1986, average daily transactions had risen to $100 billion.

Moreover, the government securities market is no longer limited to cash. Beginning in the late 1970s and early 1980s, futures, options, and options on futures markets for these securities developed. The growth of these markets has been phenomenal. Industry sources attribute this growth to the interest rate volatility that followed the Federal Reserve's change in monetary policy in 1979.

In 1974, Congress broadened the definition of commodity futures to include interest rate futures. While 2.3 million interest rate futures contracts were traded in 1978, over 55 million were traded in 1985. Over 40 million of these contracts were U.S. Treasury bond futures traded at the Chicago Board of Trade. This is the highest volume futures contract in any commodity at any exchange.

In 1982, the Commodity Futures Trading Commission began allowing options on futures to be traded. By 1984, options on futures were offered at nine futures exchanges on 15 different commodities. The Chicago Board of Trade's option on a U.S. Treasury bond future, the only option on an interest rate future contract offered until 1985, accounted for 62 percent of the total options on futures trading volume in 1983, 67 percent

in 1984, and 60 percent in 1985. During this same period, the contract's trading volume increased from 1.7 to 12 million.

Interest rate options also began trading in 1982. Their trading volume is far below that of options on interest rate futures, but it is increasing. In 1983, about 175,000 interest rate options were traded, while in 1985 about 438,000 were traded.

In addition to exchange-traded options, a private over-the-counter market for Treasury securities options also exists. Volume in these off-exchange trades is difficult to estimate, however.

FUTURES

A futures contract is a firm commitment by two parties to make or take delivery of a commodity during a specified month in the future at some fixed price. The contract price is determined by open outcry at a futures exchange. Few futures trades are settled by actual delivery. Instead, buyers and sellers usually close out their positions with offsetting trades before the contract matures.

Table V.1 illustrates the growth in futures trading volume. This growth appears to be a shifting away from agricultural commodities toward interest rate futures, equity indexes, and foreign currency futures. In 1985, for example, these relatively new types of futures contracts made up almost 60 percent of the total trading volume, while agricultural commodities made up 25 percent.

APPENDIX V

Table V.1

Futures Contracts Traded by Commodity Group

Commodity Group	1983 Contracts traded	1983 Percent of total	1984 Contracts traded	1984 Percent of total	1985 Contracts traded	1985 Percent of total
Agricultural	57,829,242	41	48,860,126	33	39,331,754	25
Interest rate	28,123,161	20	41,221,424	28	55,125,094	35
Precious metals	22,552,427	16	18,880,269	13	14,720,190	9
Equity indexes	12,752,937	9	18,442,464	12	22,243,167	14
Foreign currency	11,910,581	9	14,000,857	9	17,165,736	11
Non-precious metals	3,198,810	2	2,589,518	2	2,525,658	2
Petroleum products	2,776,355	2	4,619,533	3	7,002,107	4
Other	781,427	1	758,034	1	582,872	0
Total	139,924,940	100	149,372,225	100[a]	158,696,578	100

[a]Percentage does not add to 100 due to rounding.

Source: Futures Industry Association, Inc.

Table V.2 lists trading volume at the U.S. exchanges that trade interest rate futures. In 1985, all of these exchanges were in Chicago. The Chicago Board of Trade and the Chicago Mercantile Exchange accounted for over 99 percent of the financial futures trading volume. Interest rate futures contracts at these exchanges are traded by banks, security dealers, and other financial firms, as well as individual investors. The Chicago Board of Trade offers contracts in long-term instruments, such as Treasury bonds and 5- to 10-year Treasury notes, and GNMA mortgage-backed certificates. The Chicago Mercantile Exchange, on the other hand, offers short-term contracts on 90-day U.S. Treasury bills, domestic CDs, and Eurodollars.

Table V.2

Trading Volume in Interest Rate Futures by Exchange

Exchange/Commodity	Contract Size	Number of Contracts		
Chicago Board of Trade		1983	1984	1985
U.S. Treasury Bonds	$100,000	19,550,535	29,963,280	40,448,357
U.S. Treasury Notes	$100,000	815,067	1,661,862	2,860,432
GNMA Mortgages (I)[a]	$100,000	1,692,017	862,450	84,396
GNMA Mortgages (II)[a]	$100,000	-	37,615	-
Total		22,057,619	32,525,207	43,393,185
Chicago Mercantile Exchange				
U.S. Treasury Bills (90 day)	$1,000,000	3,789,864	3,292,817	2,413,338
Domestic CD (90 day)	$1,000,000	1,079,580	928,662	84,106
Eurodollars (90 day)	$1,000,000	891,066	4,192,952	8,900,528
Total		5,760,510	8,414,431	11,397,972
Mid America Commodity Exchange				
U.S. Treasury Bonds	$ 50,000	267,259	251,300	297,033
U.S. Treasury Bills	$500,000	37,755	30,486	36,904
Total		305,014	281,786	333,937
New York Futures Exchange				
U.S. Treasury Bonds	$100,000	-	18	-
Total			18	
Total		28,123,161	41,221,424	55,125,094

Source: Futures Industry Association.

[a]GNMA I securities were introduced in 1970 and trading in GNMA II securities began in 1984. The key features of the GNMA II program included the use of a central paying agent and the availability of larger geographically dispersed multiple issues pools. GNMA II was terminated in 1985.

OPTIONS ON SECURITIES

Options give purchasers the right, but not the obligation, to buy or sell a given security at a specific price within a predetermined period. The option buyers pay a fee known as a premium to the option sellers for this right. Understanding the function of option premiums is to a large extent the key to understanding options.

There are two basic types of options: calls and puts. A call option gives the buyer the right to purchase a particular security at a fixed price. A put option gives the buyer the right to sell a security at a fixed price. Puts and calls should not be confused. They involve totally separate transactions. In other words, there is not a put for every call and a call for every put. Instead, for every put buyer there is a put seller, and for every call buyer there is a call seller.

The option buyer's risk is limited to the premium paid. It is the most the buyer can lose. The option premium is thus like an insurance policy in the sense that by paying the premium, the option purchaser is paying the option seller for bearing interest rate risk.

Option sellers (writers) receive premiums as income. In exchange for this income, they theoretically expose themselves to unlimited risks. For a specified period of time they are committed to buy or sell the security at a specific price, no matter what the cash price of the security is. Option writers can limit their risks, however. For example, they can take an offsetting position in the cash or futures markets. They can also purchase an option opposite to that which they have sold. For example, if they sold a put option, they buy a put option. This is called buying in the option or closing a sale. Buying in the option terminates the option writer's obligation to deliver or purchase the underlying security; the option writer's profit or loss is the difference between the premium of the option sold and the premium of the option bought. (The option seller's practice of buying in options in no way affects the rights of original options purchasers; it simply transfers the seller's obligation to another party.

In addition to serving as an insurance arrangement, option purchases also provide an opportunity for profit that is not limited by the amount of the premium. A buyer can profit by purchasing an option when the premium is low and buying in when the premium is high. (Buying in the option, or closing the purchase, involves selling an option opposite to that originally purchased.) A buyer can also profit by exercising the option when the market price of the underlying security has changed in a favorable way.

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In 1985, two exchanges traded interest rate options. The Chicago Board Options Exchange (CBOE) traded Treasury bond options and the American Stock Exchange (AMEX) traded Treasury note and bill options. Table V.3 lists interest rate option trading volume at these exchanges. It shows that in 1985 overall trading volume in these options increased. The percent of total trades which took place at the CBOE increased from 63 percent in 1983 to 95 percent in 1985.

Although institutional investors and some individuals are utilizing the CBOE option on Treasury bonds, the volume in this market is not nearly as great as the volume of transactions in options on Treasury bond futures. While 415,001 Treasury bond option trades took place in 1985, 11.9 million option trades on Treasury bond futures took place.

Table V.3

Trading Volume in Interest Rate Options by Exchange

Exchange	Number of Contracts		
	1983	1984	1985
Chicago Board Options Exchange			
Treasury Bonds	110,689	241,939	415,001
American Stock Exchange			
Treasury Notes and Bills	63,897	21,482	22,958
Total	174,586	263,421	437,959

Source: Securities and Exchange Commission

OPTIONS ON FUTURES

Options on futures give purchasers the right, but not the obligation, to buy or sell the futures contract--not the underlying securities or currencies. Exercising an option on a futures contract results in the acquisition of a futures position, while exercising an option on cash bonds results in the delivery of the actual bonds. The CFTC began allowing options on futures on a test basis in 1982 under its exchange-traded option pilot program.

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During 1985, 10 of the 11 U.S. futures exchanges offered options on futures contracts in various commodities, from Deutsche Marks and gold to wheat. Only the Chicago Board of Trade offered an option on an interest rate future. Its option on U.S. Treasury bond futures began trading in 1982 and its option on U.S. Treasury notes began trading in 1985. Since its inception, the Treasury bond option on futures contracts has had the highest trading volume of any contract offered at any exchange. Over 11.9 million of these contracts were traded in 1985, representing 59 percent of all options on futures traded.

More than 25 times as many options on Treasury bond securities futures as other interest rate options are traded. An interagency study on futures and options lists several reasons for this.[1] According to the study, institutions would prefer trading options on the actual securities rather than options on futures, but the option markets

--are illiquid,

--have higher bid/ask spreads,

--have higher commissions, and

--are more difficult to price because there is no last sale quotation information for the underlying Treasury security.

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[1]"A Study of the Effects on the Economy of Trading in Futures and Options," Board of Governors of the Federal Reserve System, The Commodity Futures Trading Commission, and the Securities and Exchange Commission, December 1984.

Table V.4

Trading Volume in Options on Futures by Exchange

Exchange/Commodity	Number of Contracts 1983	1984	1985
Chicago Board of Trade			
Corn	-	-	363,549
Soybeans	-	72,969	840,786
Silver	-	-	10,820
T-Bonds	1,664,921	6,636,209	11,901,116
T-Notes	-	-	177,292
Total, Chicago Board of Trade	1,664,921	6,709,178	13,293,563
Total, Other Exchanges	981,944	3,218,963	6,751,181
Total	2,646,865	9,928,141	20,044,744

Source: Futures Industry Association.

Over-the-Counter Options

Similar to exchange-traded options, over-the-counter options give purchasers the right to buy or sell a given security at a specific price during a specific period. Over-the-counter options, however, are usually private, off-exchange trades between and among primary dealers and their customers. The market was adapted from a similar, long-established private network of options on Government National Mortgage Association securities.

Trades on this market have many of the same characteristics as exchange-traded options but without the benefit of the clearing house and exchange safeguards. The two parties sign contracts, the buyer pays the seller a premium, and the seller may have to post margins with the buyer. If either party

defaults, however, the opposing party will have to take private legal action. There is no clearinghouse to guarantee the transaction. As a result, the creditworthiness of the opposing party to a trade is very important.

The magnitude of government securities dealers' involvement in the over-the-counter options market is difficult to estimate, since the Federal Reserve's dealer reporting system does not distinguish between exchange traded and over-the-counter options. According to the six dealers we interviewed, three had never traded over-the-counter options, one had traded them in the past but did not any longer, one traded them on a limited basis in response to customer's requests, and one actively traded in this market.

TREASURY DEALER USE OF FUTURES MARKETS

According to one academic study,[2] primary dealer transactions represent approximately 20 percent of all Treasury bill and 45 percent of all Treasury bond futures contracts traded. Primary dealers use futures either for speculation and arbitrage or for hedging. The dealers vary in the extent of their use of futures and the size of the positions they are willing to take.

Dealers generally hedge their portfolios if they are either uncertain, or believe that prices are going down. If, on the other hand, they believe that bond prices are headed up, they will be more likely to speculate. Logically, they have no need to hedge under these conditions because they feel that the value of their portfolio is going up. As the representative of one dealer stated, when he hedges it is generally to cut losses on a losing trade. As a trader from another firm put it, "you do not hedge a winning position." Dealers also use futures to hedge illiquid cash positions.

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[2]Mark S. Rzepczynski, "The Behavior of Primary Government Security Dealers and Their Use of Financial Futures," Review of Research in Futures Markets, Vol. 3, No. 3, Chicago Board of Trade, 1984.

In reality, the distinction between speculators and hedgers tends to blur. Hedgers protect against loss from price changes by taking a futures position opposite their cash position. Speculators gain from correctly assessing the direction of price changes. Losing speculative positions in the cash market can be hedged in futures to cut losses.

Speculation

One source of profits for primary dealers is speculation, or taking unhedged market positions. The amount of speculation that dealers do in the futures versus the cash market varies from dealer to dealer. Out of four bank dealers interviewed, three stated that they were more comfortable in the cash market, and thus took larger cash than futures positions. A nonbank dealer interviewed, however, reversed this situation. This dealer was organized specifically to speculate--and also arbitrage--in interest-rate futures. Thus, it uses futures extensively.

Speculation plays an important role in market operations. According to the interagency study, speculators assume risks others are trying to avoid, add liquidity to markets, and aid in price discovery. Dealers attempt to limit the risks they are willing to assume by setting limits on the maximum position they are willing to assume. Dealers cannot control the maximum loss, but only the implied or expected risk of loss created by the position limit.

Hedging

In the futures market, hedging means taking a futures position equal and opposite to a cash position. It is a method of reducing risks. According to a Chicago Board of Trade publication, hundreds of banks and other financial institutions use financial futures to hedge. The Board reported that, in 1983, 100 of the 300 largest banks traded Treasury bond futures to manage risk exposure.

Dealers could, of course, also hedge in the cash market, but there are several advantages to using futures. For example, financial futures:

--Provide liquid markets. The Chicago Board of Trade's Treasury bond futures contract has the largest trading volume of any single futures contract on any exchange. over 40 million of these contracts were traded in 1985.

--Lower credit risks. The exchange clearinghouse acts as a buyer to every seller and a seller to every buyer. This guarantees performance on the contract.

--Facilitate price discovery. Because futures are traded on centralized exchanges, continuous, competitive price information is readily available.

--Increase leverage. Margin money required to establish a futures position is only a fraction of the price of the cash commodity.

Arbitrage

Arbitrage involves simultaneously buying and selling the same item in two differing markets in an attempt to profit because of price differentials in those markets. Primary dealers have been arbitraging for years in the cash market. The development of the futures markets, however, has opened up new arbitrage opportunities. Dealers still arbitrage in the cash market, but now they can also arbitrage between cash and futures, or strictly in the futures markets.

All of the primary dealers interviewed were using futures for some form of arbitrage. They were employing different types of strategies, however. Currently, so many different types of arbitrages exist that one author wrote "If the arbitrageur has any problems these days, it is that there are so many cash securities on the quote sheet and so many futures contracts that the choice among alternatives is getting hard."[3]

[3]Marcia Stigum, The Money Market, Dow Jones - Irwin, Homewood, Illinois 1983.

HOW REPURCHASE AGREEMENTS WORK

Repurchase agreements (repos)[1] are a principal means by which dealers finance their inventories; the Federal Reserve implements monetary policy; and public bodies, financial institutions, and other corporate investors invest cash balances. However, repos have also been the primary means by which fraudulent dealers have inflicted substantial losses on the public--over $500 million in two recent dealer failures. Such losses have caused some investors to cease trading in government securities--a move which, if it became widespread, could reduce liquidity in the Treasury securities market.

The purpose of this section is to explain how repos work, why they are important to so many investors, and how some of the problems experienced by certain investors can be prevented.

WHAT ARE REPURCHASE AGREEMENTS?

A repo can be characterized as being like a collateralized loan in the form of sold and repurchased securities. Because the repo is usually collateralized with securities issued or backed by the U.S. government,[2] it is often marketed as a high-return, relatively risk-free investment in government paper. If handled properly, a repo can be a low-risk, short-term investment. However, if mismanaged, risks can increase substantially.

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[1]A repo is technically an agreement which comprises two distinguishable acts, but is part of a single transaction. Securities, most often U.S. government and/or federal agency securities, are sold by the first party (e.g., a customer), with a simultaneous agreement that the first party will repurchase the same, or substituted, securities on a day certain, for a price certain, plus interest or its equivalent at a specified rate. A reverse repo is merely the mirror image of a repo transaction. In a reverse repo, securities are purchased by the first party with the simultaneous agreement of the second party to repurchase the same or substituted securities.

[2]This discussion will focus on repo transactions using Treasury securities. The principles discussed also will apply to repos collateralized with other government securities such as GNMAs. However, implementing these principles for these repos may be more difficult because pricing of the securities is more complex and some securities are not on book-entry; therefore, recordkeeping and ownership transfer are more difficult and more expensive.

APPENDIX VI

A repo is a way of obtaining funds by using securities as collateral. One investor, such as a securities dealer, who has securities but needs cash will temporarily sell these securities to an investor having excess cash, in essence providing the securities as collateral to obtain the needed cash. The seller of securities, who obtained cash, agrees to repurchase comparable securities at a given point in the future. The term is often overnight or a few days but can extend for longer periods. The repo contract sets both the sale and the repurchase prices, which determine the interest earned by the investor who initially provided the cash.

A reverse repurchase agreement (reverse) is a way of using available funds to obtain an interest return. An investor purchases securities and agrees to sell them back at a later time and at a higher price. Any given transaction is a repo when viewed from the perspective of the supplier of the securities and a reverse repo when viewed from the point of view of the supplier of the cash.[3]

Should one party "fail"--be unable to complete its side of the repo on the agreed upon date--the other party can either sell the collateral securities or extend credit for another day.

Repos have never been clearly defined as either a sale and repurchase or as a loan. For example, Public Law 98-353 (July 10, 1984), which amended title 11 of the U.S. Code covering bankruptcy, defined repos as an agreement for transferring securities against the transfer of funds with a simultaneous agreement for reversing the transfer. Using the word "transfer" kept the definition open, allowing the market to be open to more participants and permitting greater transaction flexibility. Participation in this market could be reduced if repos were clearly defined as either a loan or a sale. For example, some municipalities have legal authority to buy securities but cannot legally make collateralized loans.

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[3]Presented here are the standard definitions for repurchase and reverse repurchase agreements used in the securities market. Certain players, notably S&Ls and the Federal Reserve (in conducting open market operations), reverse the terminology. That is, the supplier of the funds in these instances is considered to be conducting a repurchase agreement.

WHO PARTICIPATES IN THE REPO MARKET?

Securities dealers and investors in securities and money market instruments (such as corporations, municipalities, banks, and thrift institutions) use repos to finance securities inventories and arbitrage opportunities, improve portfolio yield, invest cash balances, and obtain securities to complete transactions. They also use repos to take a position in the market based on their assessment of the future direction of interest rates. The Federal Reserve is also a major player in the repo market, using repos to decrease or increase bank reserves.

Repo market activity

Total daily activity in the repo market is not known. However, the growth in the repo market can be seen in the increasing size of repo and reverse repo positions held by primary dealers. Primary dealers report their positions to the Federal Reserve Bank of New York as of the close of business each Wednesday. The annual average of these reported figures for the three categories of primary dealers is shown in table VI.1.

Table VI.1

Annual Average of Weekly Primary Dealer Repurchase and Reverse Repurchase Positions by Categories of Primary Dealers

Year	Diversified	Specialist	Bank	Total
	(millions)			
1981	$53,039	$27,791	$19,173	$100,003
1982	80,100	36,816	22,338	139,254
1983	102,124	46,245	25,350	173,719
1984	151,747	58,712	26,697	237,156

Source: Federal Reserve Bank of New York.

The rapid growth in repo positions for diversified and specialist dealers has coincided with an increased matched book

repo business. These transactions have become a mainstay of certain dealers' activities accounting for as much as 90 percent of a dealer's repo volume.[4] Table VI.2 shows the growth in matched book repo activity. Banks have not participated in this growth because the capital requirements imposed by bank regulators make matched-book repos a less advantageous use of capital relative to other investment options.

Table VI.2

Matched Book Repo and Reverse Repo Positions of Primary Dealers[a]

	Diversified	Specialist	Bank	Total
	(millions)			
1981	$30,794	$17,404	$ 6,167	$ 54,365
1982	45,547	20,238	7,534	73,318
1983	54,626	22,159	6,839	83,624
1984	87,146	29,170	7,206	123,522

[a]Amounts shown in this table are included in the figures reported in Table VI.1.

Source: Federal Reserve Bank of New York

WHY ARE REPOS SO ATTRACTIVE?

Repos are attractive to institutional investors for several reasons, including low cost, flexible terms, administrative ease, and collateral flexibility.

Low cost/high yield

The interest rate on a repo depends on the competitive rate for comparable funds and the availability of securities to use

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[4]A broker/dealer that conducts a repo and matches it with a mirror image reverse repo to another customer (or vice versa) is said to run a "matched book." Matched book repo activity as a percent of total repo activity in 1984 averaged 40 percent overall--62 percent for diversified, 42 percent for specialists, and 19 percent for banks. All non-bank primary dealers reported some matched book activity; five banks reported no such activity.

as collateral; it has no relation to the interest rate of the securities used as collateral. Repo interest rates are generally favorable for both the borrower and the lender of cash compared to other short-term rates. Repo rates are usually the cheapest overnight interest rate for the borrower. The rate is lower than the interbank Federal Funds rate[5] because repos are fully collateralized with high quality securities.[6] On the other hand, the rate is higher than lenders of cash can often get on other short-term investment instruments such as bank deposits. The following hypothetical example shows why both borrowers and lenders can be attracted to this market.

a. Investor A has $1,000,000 to invest overnight and wants to make a safe investment with the best return. The normal overnight deposit rate is 8 percent.

b. Investor B needs to borrow $1,000,000 overnight and has over $1,000,000 in Treasury securities but does not want to sell them outright. Normal overnight borrowing would cost 10 percent.

c. If B can borrow the $1,000,000 from A at a rate between 8 and 10 percent, both parties will benefit. Specifically, if A buys B's securities for $1,000,000, any net repurchase price larger than $1,000,222 would entice A to make the loan and any net repurchase price smaller than $1,000,277 would entice B to borrow.[7]

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[5]Federal Funds are uncollateralized overnight interbank loans.

[6]Comprehensive data on rates paid in repo transactions are not generally available because these rates are individually negotiated and the terms of agreements vary. A Federal Reserve analysis of certain published quotes for 43 weeks in 1984 showed that the average spread between the overnight repo rate and the Federal Funds rate was about 29 basis points--a savings of about $80.60 for each $10 million borrowed overnight.

[7]For purposes of this example, all interest rates are presumed to be expressed on a 360 day year basis--the basis used to express repo rates. The repurchase prices are computed based on 1 day's interest at the respective rates ($1,000,000 x 8% x 1/360 = 222 and $1,000,000 x 10% x 1/360 = 277).

d. In practice, A and B will be linked together directly by a broker who will charge a fee, or by a dealer who does a repo with A and matches it with a reverse repo with B, or indirectly through two or more repo transactions between brokers and dealers, each of which takes a profit for each transaction. The difference in the repurchase price paid by B and the amount actually received by A would depend on the number of intermediate transactions and the dealer/broker fee or profit on each transaction. Hypothetically, the repurchase price for B might be $1,000,260 with A receiving $1,000,255, if it were a matched book transaction. The difference would be larger if there were additional intermediate transactions.[8]

For simplicity, we have ignored the cost of recording the transfer of ownership and cash in the preceding example. However, the amount of those costs can vary considerably and is a concern because, while they can be insignificant for large dollar value longer term repos, they have the potential to wipe out any gain from a short-term, low-value transaction.

A recent Public Securities Association[9] discussion of transactions costs explained that the different collateral arrangements have different costs. When the dealer (seller) retains custody of the collateral for the purchaser and identifies the securities on its books for the account of the

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[8]According to information developed by the Federal Reserve Bank of New York, dealer mark-up on a matched book repo tends to be about 15 to 20 basis points, or $4.20 to $5.56 for each $1 million on an overnight repo. Rates vary, however. Federal Reserve records also show that one dealer's rates at certain times were 50 percent higher than this norm, while another dealer matched repos between its major customers and the Federal Reserve for no mark-up. According to a New York Federal Reserve Bank official, the mark-up variation depends on whether the dealer is issuing repos as a profit source, a financing method for other activities, or a low return service to customers.

[9]Hearings before the Subcommittee on Domestic Monetary Policy of the Committee on Banking, Finance and Urban Affairs, House of Representatives: Regulation and Supervision of the Government Securities Market, July 9, 1985.

purchaser, most costs are internal and estimated to be relatively small. If the dealer (seller) is moving the securities into or out of its "segregated" account at its bank, relatively small bank fees may be charged. If it is necessary to transfer book-entry Treasury securities into or out of accounts at the seller's clearing bank, the charge will be higher ($3 to $12 per security issue.)

The transaction costs of a delivery repo are generally much greater than those of a custody repo and are incurred in several steps. Typically, the cost of delivery may include the cost of transferring securities to the seller's bank, the seller's bank's fee for wire or physical delivery out, a Fed wire charge, and receipt and custody fees charged by the purchaser's bank, if any. Some of these steps may not be present in a particular transaction, and the costs will vary from case to case. PSA members have estimated that the cost for delivery of a "round trip" repo of $1 million wireable securities (e.g., Treasuries) would be in the range of $50 to $60.

The SEC has estimated costs of requiring delivery in a short-term repo. The SEC assumed a nominal 8 percent repo with total transaction costs of $120 ($30 per receipt and delivery for each of the two parties) and assumed that the purchaser paid all costs in a repo and the seller paid the costs in a reverse. Under such circumstances, the effective annual yield to be received by a purchaser (after transaction costs) is only 3.68 percent for an overnight reverse of $1 million. This rate would increase to 7.93 percent for a 60-day reverse. Conversely, in a repo of the same size and rate, the seller would pay 12.32 percent for an overnight repo (after transaction costs), which would decrease to 8.62 percent for a 1-day repo, 8.17 percent for a 1-month repo and 8.07 percent for a 60-day repo.

In addition to these costs per transaction, some banks charge periodic fees to maintain custody accounts. The SEC estimated these charges at approximately $300 per month. Although bank practices may vary substantially, PSA members and the SEC agree that $300 per month is a reasonable estimate for these charges.

Flexible terms

Another feature of repos is the various time commitments they offer. Three time categorizations are frequently used:

1. Overnight--borrowing of funds for 1 day. The purchaser of the security (loaner of money) receives interest for the day of the transaction. For example, a municipal government determines the value of checks that will clear against its account on a given day and computes its idle cash balance. By entering into an overnight reverse repo, the municipal government loans its funds to an entity with securities in need of cash on an overnight basis, regaining its cash on the next day to spend or reinvest.

2. Open or continuing contract--a continuing contract represents a series of overnight transactions that are automatically renewed each day with the interest rate reset each day. A lender agrees to give a dealer funds for a certain period, but either party can terminate the agreement at any time. The dealer reserves the right to take back securities pledged as collateral and substitute others. Rates for open repos are negotiated each day and are usually higher than the overnight rate because borrowers are willing to pay more since transaction costs are lower.

3. Term repos--contracts for a specified number of days, usually not more than 30 days. Investors enter term repos because the terms can be preferable to finding an available security that matures when the investor needs to recoup the cash. Repo maturities seldom extend beyond 30 days, however, because there are usually alternative investment opportunities that offer higher returns.

Administrative ease

Since government securities transactions are conducted via the telephone, repos are attractive because billions of dollars in cash and securities can be exchanged through a phone call and without extensive legal contracts. For example, if a primary dealer is seeking to raise $50 million in overnight funding, it will either phone certain other dealers or customers, contact a broker who will attempt to find a trading partner, or display its need on a screen broker's video-display screen and wait for an offer. When another trader accepts an offer, the broker or the dealer negotiates with the potential repo partners until a

price is agreed upon. Usually, at this time, the identities of the trading partners are revealed for credit check purposes.[10]

At the end of the negotiations, the two dealers exchange written confirmations specifying the terms of the transaction and containing instructions as to where the securities should be sent. If the securities are to be delivered, an electronic bookkeeping transfer is made between the accounts of the two dealers by the clearing institutions who maintain accounts for the two firms. If the dealer selling the security is to retain custody, then its bank transfers the securities from the dealer's own account to its customer account.

Nearly all of the primary dealers have developed standard contractual agreements for repos. These agreements are part of the transaction confirmation or are separate agreements incorporated by reference in a dealer's confirmation. These agreements allow trades to take place without requiring the signing of a contract each time. The terms of these agreements are discussed in the last section of this appendix.

Collateral flexibility

One advantage of repos is that participants can use a wide variety of securities as collateral including Treasury, Federal Home Loan Mortgage Corporation (Freddie Mac) securities, Government National Mortgage Association (GNMA) securities, and Federal National Mortgage Association (FNMA) securities. (CDs and bankers' acceptances are also acceptable collateral.) Treasury securities are most frequently used because they are plentiful in varied maturities and are owned on book-entry, enabling the entity receiving the collateral securities to have them deposited immediately in its own account. In addition, the depth and liquidity of the Treasury market enables dealers to find substitute securities should a trading partner fail to deliver securities as required. The ability to substitute substantially identical securities is a key feature that prevents the investor's failure to deliver securities from setting off a chain reaction of failed transactions.

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[10]Chapter 2 discussed the "blind brokering" performed by interdealer screen brokers for the purchase and sale of securities. Because repos are considered credit (financing) transactions, the identities of the counterparties are revealed before the transactions are finalized so that exposure limits can be managed.

When a dealer controls securities by accepting them as collateral for a reverse repo loan, it has numerous legal investment options. These include

--selling the securities,

--using the securities as collateral for a bank loan (including substituting them for others currently pledged as collateral),

--using the securities as collateral in another repo transaction,

--delivering the securities to another repo customer to unwind a previously initiated repo, and

--delivering the securities to fulfill a commitment on a forward or futures contract.

The options selected depend on where these securities can produce the greater return and on the dealer's ability to obtain the required securities or cash when needed to complete the repo transaction.

HOW CAN USERS AVOID PROBLEMS WITH REPOS?

Investors can expose themselves to risk even when they think they are doing safe repurchase or reverse repurchase agreements. This occurs under the following circumstances:

(1) The investor fails to take control of securities pledged as collateral--in other words, giving money away with only a promise that securities are being set aside as collateral. In this case, the entire investment is at risk.

(2) The investor does not get enough collateral initially to cover the repurchase price or does not request more collateral when the market value of the securities pledged falls below the repurchase price. In this case, exposure is the difference between the repurchase price and the value of the securities held as collateral.

(3) The investor (borrower in a reverse repurchase agreement) provides too many securities as collateral--their value exceeds the repurchase price--or does not get some of its excess collateral back if the value of the securities rises. In this case, risk exposure is the amount that the value of the securities sold exceeds the repurchase price.[11]

Uncollateralized lending can be done with marginally greater gain and the risk may be reasonable if done with a truly creditworthy customer. However, such lending should not be done unwittingly. This point has been emphasized in recent FRB guidance to member banks in which the Board stated that inadequately collateralized repos are to be considered unsecured extensions of credit that will be subject to the institution's lending limits.

Since the recent dealer failures of E.S.M. and Bevill, Bresler, and Schulman Inc., several publications have discussed how investors can safely conduct repos. These articles all deliver the same message, a message that was given after the Drysdale and Lion Capital failures in 1982 and 1984, respectively:

--know your counterparty and manage your credit risk accordingly;

--take control of your collateral through your agent or through direct possession;

--mark to market daily, obtaining excess collateral and having additional collateral supplied as appropriate; and

--use a written repurchase agreement contract.

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[11]Certain financial institutions may suffer a book loss larger than the market value of excess collateral if the market price of the securities used in the repo was less than the book value of the securities. If the financial institution does not get its securities back, its total loss will be the difference between the book value and the initial cash received. The failure of Bevill, Bresler, and Schulman created severe problems for several thrift institutions in this way.

Know your counterparty

Actions described later in this discussion are designed to minimize the effects of a dealer failure so that the investor walks away whole if the dealer fails. However, it is obviously preferable for an investor to avoid such situations since liquidating the collateral will create additional transaction costs and administrative inconvenience. The most commonly stated axiom of advice in this regard is "know your trading partner." However, following this axiom is easier said than done and requires some work on the part of the investor.

The first task is to identify your trading partner. Many transactions are arranged by brokers and may involve dealers who are acting as an agent for a client firm. In this situation, the dealer agent, while shown as the trading partner on the transaction confirmation, is not the true trading partner. The agent's client is the trading partner. Therefore, to assess the credit risk in this trade, the investor would need to gather credit information and financial data on the client firm. Confirmation slips on repo transactions should indicate whether the broker/dealer considers itself an agent or a principal to the transaction so investors can confirm their understanding before the transaction is finalized.

Recent failures have also demonstrated the importance of customers knowing which part of an organization they are conducting trades with. Some customers thought they were dealing with one counterparty when they actually were dealing with an affiliate. Often this affiliate was insolvent, with earlier losses masked by complex transactions and relationships with other affiliates. Careful examination of the written confirmation of transactions is important so that the financial health of the true counterparty can be reviewed.

Take control of collateral

Investors best protect their ownership interest in securities pledged to them as collateral in a repo when they take delivery of the securities. Investors can take delivery by either having the securities deposited with them directly, with a clearing firm or bank acting as their agent, or with a custodian bank acting as agent for both them and the dealer under a joint agreement. By any of these actions, investors establish their ownership claim and ensure that they have control of the securities.

Investors also establish their ownership claim to securities left in the possession of dealers if they execute a proper written agreement and "give value" for the securities. According to the Uniform Commercial Code, this security interest applies for 21 days and applies whether the repo is viewed as a loan or a purchase and sale of securities. However, if the dealer retains possession, the investor is relying on the integrity of the dealer, with regulatory oversight in some cases, to ensure that the securities are not sold or pledged to someone else.

Many of the investors with E.S.M. and Bevill Bresler & Schulman Inc. lost their money because they did not take control of the collateral they had "purchased." Instead of controlling these securities, dealers used these customer-owned securities for other transactions, while telling the investors that the securities were set aside at the dealers' clearing banks for safekeeping. Because the clearing banks held the securities in accounts that were in the dealers' names and not in the investors' names, the clearing banks could not recognize any of the investors' claims to the securities. As a result, the investors lost both the money they had loaned and the collateral securities they had "purchased" when it was discovered that the investors had more claims for securities than were in the "safekeeping" accounts.

Why would investors leave their securities with these dealers? If the investor is not interested in doing anything with the securities pledged as collateral, not taking possession of the securities can be an administrative convenience that also reduces transaction costs and saves the investor the cost of establishing its own account at a clearing bank. In addition, because dealer costs are lower, dealers are often willing to pay additional interest if the investor does not take possession.

Another explanation relates to the requirement that bank dealers and registered broker/dealers segregate customer-owned securities with dealer compliance monitored by the cognizant regulatory organization. To the extent that investors in E.S.M. and Bevill, Bresler, and Schulman Inc. believed they were dealing with a regulated dealer, they were following common securities industry practice. However, because these dealers were unregulated, they were not subject to customer security segregation requirements or regulatory monitoring to ensure compliance. As a result, the investors were dependent solely on the dealers' integrity.

APPENDIX VI

Maintain sufficient collateral

To have full collateral coverage of its position, the lender in a repo (i.e., the supplier of cash) needs to obtain sufficient securities so that their value equals or exceeds the repurchase price. Similarly, the borrower in a repo (i.e., the supplier of securities) needs to ensure that the value of collateral provided does not substantially exceed the repurchase price. While this is fairly easy to do initially, investors in term repos or reverses can overlook the need to monitor the value of the collateral during the agreement, and thereby expose themselves to losses if the collateral must be liquidated.

Lenders protect themselves against the falling value of collateral by requiring a collateral amount in excess of 100 percent of the repurchase price, measuring the collateral value on a daily basis (marking to market), and requiring the dealer to put up more collateral if the deficiency is significant.

Borrowers protect themselves against rising collateral values by insuring initial margins are reasonable, measuring the value on a daily basis, and periodically requiring the dealer to return any excess collateral.

The excess amount of collateral, termed "margin,"[12] depends on the price volatility of the underlying securities as well as the creditworthiness of the trading partner and the term of the repo agreement. Table VI.3 shows price volatility experience measured on a daily and weekly basis for the first quarter of 1985. (Larger dollar values mean greater price risk.) A technical explanation of the table appears below the table.

[12]The term "margin" has a slightly different meaning in a repo transaction, where it refers to the amount of excess collateral transferred, than in a "margined" futures or options transaction, where it is the amount put up to assure performance of the contracts.

Table VI.3

Carroll McEntee & McGinley Incorporated (CM&M)
Price Volatility During the First Quarter of 1985
Per Million Dollars Par Value
Mean + 2 Standard Deviations

Daily price risk	1st Qtr. 1985	Weekly price risk	1st Qtr. 1985
3 mo. Bill	$ 473	3 mo. Bill	$1,012
6 mo. Bill	954	6 mo. Bill	2,098
1 yr. Bill	1,720	1 yr. Bill	3,816
2 yr. Note	3,032	2 yr. Note	7,229
3 yr. Note	4,355	3 yr. Note	9,990
4 yr. Note	5,505	4 yr. Note	13,374
5 yr. Note	6,460	5 yr. Note	16,353
7 yr. Note	8,217	7 yr. Note	20,004
10 yr. Bond	9,489	10 yr. Bond	23,417
15 yr. Bond	9,209	15 yr. Bond	23,307
20 yr. Bond	11,822	20 yr. Bond	30,764
30 yr. Bond	12,979	30 yr. Bond	31,261

Explanation for the historical
price volatility chart

The Price Volatility Chart details price volatility on a daily and weekly basis for specific time periods and types of securities. The securities represented are the current leading issue in that category. CM&M's daily prices for each security are input into a computer and the respective yields are calculated. At the end of the desired time period, the difference in yields is taken for 1-day (daily) and 5-day (weekly) holding periods. A factor, which represents the price change for a 1 basis point (1/100 of 1 percent) change in yield during the period, is also determined for each security class. By multiplying the yield differences by the applicable factors, yield changes are converted to price changes. The mean and standard deviation are then calculated for each security class and the information is compiled to obtain a 95 percent confidence level (mean plus 2 standard deviations).

The table shows how the price of a million dollars worth of various securities changed in a day or a week's time during the first quarter of 1985. For example, if investors are currently holding as collateral a $1,000,000, 3-year note, they then can be reasonably confident, if current conditions are similar to the first quarter of 1985, that the value of that note will be between $995,645 and $1,004,355 1 day later ($1,000,000 ± 4,355) and between $990,010 and $1,009,990 1 week later ($1,000,000 ± 9,990). Both daily and weekly price risk factors are used for repo financing transactions, depending upon the time required to recognize margin needs and obtain additional collateral if needed.

Tables such as these are useful for investors in determining the amount of margin they should require on a reverse repo and in evaluating the reasonableness of margins dealers are requesting on repos. Once such margin requirements are established, the investor can establish procedures to periodically evaluate whether the margin is being maintained and establish the level of acceptable variance--the point beyond which additional margin will be obtained or excess margin should be returned. This amount of acceptable variance depends on the investor's assessment of the reasonable risk exposure to this customer.

Establish risk exposure limits

Security dealers routinely evaluate their risk exposure to customers. Nearly all major dealers have a credit committee made up of senior management representing various components of the firms, such as sales, operations, trading, legal, and finance. These committees meet to review potential customers relative to credit criteria that the committee has established. An example of one dealer's analysis method follows:

> Dealer X sets risk exposure so that in a worst-case situation, caused by a customer failure, the dealer could not lose more than 5 percent of its net capital after taxes. The dealer does this by setting a maximum exposure to any one customer of 5 to 10 percent of the customer's net capital (audited net worth less illiquid assets and assets of lesser quality). If the customer's net worth exceeds the dealer's, then the limit is 5 to 10 percent of dealer's net capital. (In addition, Dealer X sets a minimum capital level for its trading partners of $5 million.)

Once such criteria have been established, they can be used in conjunction with the daily analysis of collateral adequacy to ensure that the risk exposure stays within approved limits.

Use a written repo agreement

An endorsed repo agreement is an important tool for ensuring that the investor has the authority to take actions necessary to protect its investment. The repo agreement covers both the "mechanics" of the transaction and "know your trading partner" issues. Some agreements are part of the transaction confirmation while others are separate letters of agreement to be applied in conjunction with transaction confirmations. PSA has also developed a prototype repo agreement. The following list shows some of the key provisions that should be included in repo agreements:

--the interest rate to be charged;

--the term of the agreement;

--the type of securities to be pledged as collateral;

--the procedures for substituting other securities for the previously pledged collateral;

--the method for determining the market value of the collateral;

--the acceptable margin between the value of securities pledged as collateral and the cash repurchase price;

--the criteria for both providing additional collateral when the pledged securities fall in value and returning excess collateral when the pledged securities rise in value;

--the method of payment and delivery, including who will have custody and title to the securities, and requirements for segregating the collateral securities in an identifiable account;

--the criteria for default which would permit the purchaser and/or seller to liquidate or purchase the collateral securities;

--the rights of any trustee or custodian who may hold the underlying securities during the life of the agreement;

--procedures for terminating the agreement;

--evidence of the legal capacity of each party to effect repo transactions;

--the description of the parties to the agreement when each party is acting as a "principal" or as an "agent" for a customer;

--the counterparty's attestation to its creditworthiness and the validity of financial data provided; and

--rights of set-off between this repo transaction and any others between the two parties.

Written repurchase agreements vary. For example, one agreement called for collateral to be maintained within plus or minus 5 percent of the repurchase price. It obligated the borrower to put up more securities if the price dropped below the limit and obligated the lender (holder of securities) to return collateral if the value had risen above the limit. In contrast, another agreement required the investor to provide additional collateral or return excess collateral when, in the dealer's judgment, the value of securities pledged had fallen too low or risen above this limit. The contract was silent, however, on the dealer's obligation to provide additional securities or return excess securities at the investor's request. While the dealer might still comply with an investor's request, the investor has apparently not ensured its rights by this agreement.

MARKET RISKS AND CREDIT RISKS IN TREASURY SECURITIES DEALING

Dealers and others in the Treasury securities market face four types of risk: business risk, institutional risk, market risk, and credit risk.[1] This appendix explains market risk and the resulting credit risk in more detail by exploring various dealing techniques. Most of these techniques can be reduced to a simple idea: a dealer undertakes to deliver cash or securities, in exchange for securities or cash, at a certain price and on a certain future date. Because conditions in the securities market change, the dealer faces a market risk that the price of the security will change after the dealer has committed in advance to a fixed price. And since the other party's commitment can be broken, the dealer faces a credit risk.

These fundamental facts come in many different guises. The next section seeks to unmask them.

DEALER POSITIONING TECHNIQUES: THEIR MARKET RISKS AND CREDIT RISKS

To understand how market and credit risks arise from government securities dealing, it is useful to have a basic understanding of the techniques and instruments used. This section describes common techniques used by dealers with special reference to the market and credit risks that they produce. Almost all of the Treasury dealing activities of a dealer involve market risk. By using two or more positioning techniques in combination, a dealer may partially or fully eliminate these risks--hedge them. Some of the techniques give rise to credit risks. Unlike interest rate risk, credit risk cannot be neatly hedged; however, it can be properly monitored and limited.

Dealers in Treasury securities can make profits in three ways:

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[1]Chapter 3 of this report briefly explained these four types of risk. We wish to acknowledge the assistance of Ian H. Giddy, Associate Professor, New York University, in preparing chapter 3 and this appendix.

(A) By buying and holding a Treasury bill or bond in order to profit from a yield higher than the cost of financing. When the funds borrowed have the same maturity as the security bought, this is called "financing to maturity" and has low market risk. Market risk rises if the funding maturity does not match the investment maturity or if a shortage of liquidity forces the firm to sell the security before maturity, perhaps at a loss. Because buying and holding ties up funds and limits return, dealers normally prefer to buy securities in anticipation of selling them at a profit, as in "positioning."

(B) By trading--that is, "making a market"--purchasing a security and hoping to find a buyer at a higher price, or selling a security and then trying to purchase the security at a lower price. Since dealers who quote a two-way price cannot be sure whether the customer is going to buy or sell, it is difficult to hedge the risk that the market may move adversely after the customer has made a choice but before the dealer has had a chance to offset the transaction.

(C) By positioning--this, the most important and varied of dealing activities, means to buy or sell securities or contracts on the securities in such a way as to profit from changes in the level or structure of interest rates.

The following sections describe typical positioning techniques.

Long position financed by a dealer loan

The dealer borrows funds from a bank, buys a Treasury bond or bill, and profits to the extent that the coupon interest, plus any capital gain arising from a fall in interest rates, exceeds the cost of borrowing.

The market risk of a dealer loan-financed investment in a Treasury security arises from a mis-matching of the dealer's assets and liabilities. Mis-matching means that the maturity of the asset exceeds that of the liability, or vice-versa. For example, as illustrated in figure VII.1, Dealer A could borrow $1 million for 1 month to buy a 2-year Treasury note that pays 10-percent interest. Any purchase of a longer term security financed with a shorter term maturity is called a "long position" in that security.

If interest rates remain steady, the dealer will probably make money on this transaction because the longer term Treasury note probably bears a higher yield than the 1-month loan. This "carry" profit stems from the upward sloping or "normal" yield curve, in which longer term interest rates exceed shorter term rates.

In addition to the gain from carry, the dealer has positioned itself to gain from an anticipated fall in interest rates.

Figure VII.1

Treasury Security Financed by a Bank Loan: Gains or Losses from a Change in Market Interest Rates

Dealer A

Assets		Liabilities	
2-year 10% note	$1 million	1-month bank loan	$1 million

If interest rates fall to 9%, price of note gains by approximately 1.79%.

If interest rates rise to 11%, price of note falls by approximately 1.75%.

Dealer B

Assets		Liabilities	
5-year 10% note	$1 million	1-month bank loan	$1 million

If interest rates fall to 9%, price of note gains by approximately 3.96%.

If interest rates rise to 11%, price of note falls by approximately 3.77%.

If interest rates fall by 1 percentage point, to 9 percent, the 10-percent note will appear attractive to the market, and its market price will rise until its yield equals the going market rate--9 percent. The arithmetic of bond pricing tells us that this will be when the price has risen to $1.0179 million,

or approximately by 1.79 percent.[2] Should interest rates rise to 11 percent, on the other hand, Dealer A's Treasury note will fall in value--to $0.9825 million, or approximately by 1.76 percent. This loss, which would surely wipe out any carry profit earned by the dealer, is an example of the market risk faced by dealers in a volatile interest rate environment. The risk becomes greater for a dealer who holds a longer term Treasury security. Dealer B, who holds a 5-year Treasury note, can lose more than twice as much as Dealer A for a given rise in interest rates.

In general, when interest rates rise, longer maturity securities suffer greater losses and are therefore riskier than shorter maturity securities. Simply stated, this is because a 5-year 10-percent note locks the investor into a below-market interest rate for a greater period than does a 2-year 10-percent note, assuming the market rate is now 11 percent. Therefore, the price of the 5-year note will have to fall by more than that of the 2-year note in order to make each comparable with the going rate of 11 percent.

This type of market risk--security price fluctuations stemming from interest rate changes--applies to each of the remaining "positioning" techniques. "Long" positions, such as the ones described, are designed to gain from a fall in interest rates, while "short" positions are those designed to profit from an anticipated rise in rates. Both are termed "outright" positions because they are bets on movements of the general level of interest rates. In contrast, so-called "arbitrage" is a combination of positions designed to gain from an anticipated change in the relative level of interest rates--a convergence or divergence of interest rates on securities that differ in maturities or other characteristics.

Long position financed by a dealer repurchase agreement, or "lending securities"

Instead of borrowing from a bank to purchase a security in anticipation of a rate fall, a dealer may borrow money from a non-dealer participant (a "retail customer" such as a

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[2]For details on bond pricing, see Marcia Stigum, Money Market Calculations (Dow Jones-Irwin, 1983).

corporation) and pledge the security as collateral for the loan. This is called a customer repurchase agreement or "retail repo." Technically, the dealer enters into an agreement with the customer to "sell" the security to the customer for a fixed period, ranging from 1 day (an "overnight repo") to several months (a "term repo"). At the end of the period, the dealer will "repurchase" the security from the customer at a fixed-in-advance price, equal to the money paid plus interest. The dealer normally transfers possession of the security to the customer. The customer enters into the repo to earn a better interest rate than he/she could by buying the security itself; the dealer does it because repo financing costs are somewhat lower than dealer loans.

A "dealer repo" is identical in concept to the previous technique except that when Dealer B lends funds to Dealer A, Dealer B invariably takes possession of the security for the stipulated period, returning it at the agreed-upon price at the end. Thus, this comes closer to being a true sale and repurchase agreement: the security is actually sold to Dealer B and simultaneously bought back from B by means of a "forward" contract--one specifying future delivery at a fixed price.

This type of transaction is also called "lending securities" because, looked at in another way, Dealer A has lent the security to Dealer B for the fixed period, while Dealer B has lent money to A for the same period. At the end of the period, A will repay B's money loan (plus interest), and B will repay A's security loan. The positions and flows of money and securities are illustrated in figure VII.2.

Figure VII.2

Investment in Treasury Security Financed by a Repurchase Agreement, or "Lending" Securities

Dealer A

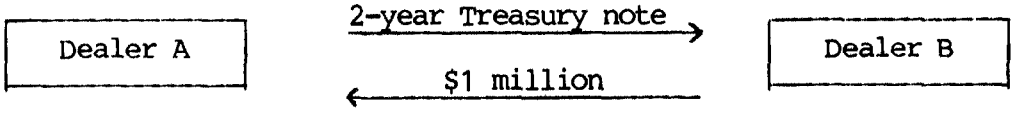
Assets		Liabilities	
2-year 10% note	$1 million	Repo vis-a-vis Dealer B	$1 million

Dealer B

Assets		Liabilities	
Reverse repo vis-a-vis Dealer A	$1 million	1-month bank loan	$1 million

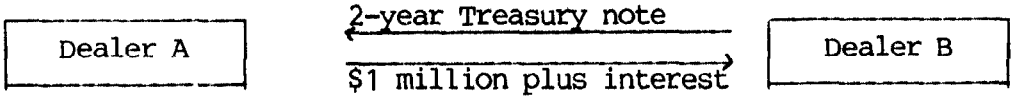
Transactions at initiation:

1. Sale by A to B of 2-year note for $1 million.
2. Agreement that A will repurchase the 2-year note from B 1 month hence for $1.0081 million, i.e., $1 million plus interest at 9.9% per annum.



Transactions 1 month later:

A repurchases the 2-year note from B at the agreed-upon price of $1 million plus interest



As before, A has a long position in the Treasury security, which means that Dealer A faces market risk--interest rates may rise. If the money the dealer has borrowed precisely equals or exceeds the value of the security A has lent, then A faces no credit risk at the initial date. But if, subsequently,

the value of the security lent rises above the amount of money received (plus interest), A faces credit risk.

Short position incurred by means of a reverse repurchase agreement, or "borrowing securities"

This agreement is the previous transaction seen from Dealer B's point of view and may also be seen in figure VII.2. While Dealer A provides the security and borrows the money, Dealer B provides the money and borrows the security. (Later, B will have to return the same or a comparable security in exchange for B's money plus interest.) Where did Dealer B get the money to buy the note from A? B may have borrowed the funds from a bank, as suggested in figure VII.2. More likely, B would sell the security it borrowed, giving A the money B got from the sale. This is a "short sale"--B sold a security it did not have, so it had to borrow the security from A. At this point, B has neither money nor securities. When the time comes to return the security to A, B will have to go into the market to buy an identical one. What B hopes is that interest rates will have risen and bond prices fallen, so that it can profit from buying the security at a price lower than the price at which it agreed to return the security to A. In other words, B profits from this "short position" if interest rates rise, loses if they fall. To the extent that B has gained--A owes B more than the security is now worth--B faces a credit risk exposure to A. The sequence of events is illustrated in figure VII.3. Note that at the initial date, B is able to sell a note to C before B buys it from A because settlement, or transfers of the money and securities of the term agreements assumed here, does not occur until several days later.

Figure VII.3

Short Position Achieved Via a Reverse Repurchase Agreement, or "Borrowing" Securities

Dealer B

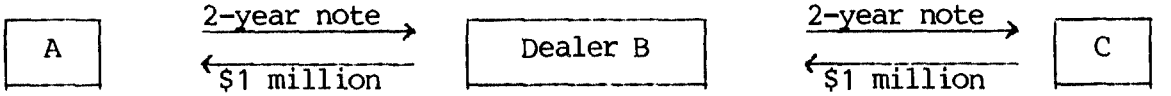
Assets	Liabilities
Reverse repo vis-a-vis Dealer A $1 million	Short sale of 2-year note $1 million

Transactions at initiation

1. Dealer B sells a 2-year 10% note to Dealer C.
2. Dealer B enters into a reverse repo with A.

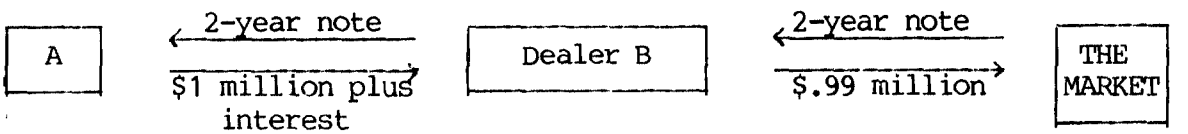
A few days later, on "settlement date":

1. Dealer B receives money from C, and pays A.
2. Dealer B receives the 2-year note from A and gives it to C.



Transactions 1 month later:

1. Dealer B buys a 2-year note in the market; since interest rates have risen, he pays only $990,000.
2. Completing the repurchase agreement, Dealer B gives the 2-year note to A, receiving $1 million plus interest.



Matched agreements or matched-book securities borrowing and lending

This agreement is a variation of the previous example that removes B's market risk but almost certainly exposes B to credit risk. Having received the security from A as collateral, B "repos it out," lends it, to a third party, C, who gives B

money. B is obliged to repay the money to C at the end of the period, plus interest, and at the same time will receive its money, plus interest, back from A. Presumably B will only do the deal if the interest B receives exceeds the interest it pays. Since B has both borrowed and lent the same security, it faces no market risk. But to the extent that the market value of the security changes during the period, B will face a credit risk exposure to A (if rates rise) or C (if rates fall).

Forward, deferred delivery and when-issued positions

In each of the previous four transactions, two parties agreed, as part of the deal, to exchange a fixed amount of money for certain securities at some future date. It was this obligation that resulted in a "long" or "short" position on the movement of interest rates. Forward, deferred delivery, or when-issued contracts are simply that same agreement--to exchange a given security for a given amount of money on a given future date--without the initial exchange.

The most common of these "future delivery" transactions is the "when-issued" contract. Dealers A and B agree to buy and sell, at a specified price, an about-to-be issued Treasury security, for delivery when the security is issued. It is possible to do this because the Treasury announces its auction dates about 2 weeks in advance of the sale and up to 3 weeks in advance of the actual delivery of the bills, notes, or bonds.

In general, two parties can agree to deliver securities for money not today but on the next business day (which could actually be as many as 5 calendar days away) or even weeks from today. If A is obliged to buy the bond at a certain price, and bond prices fall, A loses; if rates fall and prices rise, A wins (A has thus taken a "long" position). In any case, to the extent that A has gained, B "owes" A money; to the extent that B has gained, A "owes" B money. Therefore, there exists a credit risk to both parties entering into a when-issued, deferred delivery, or forward contract.

Futures

A futures contract is an agreement to purchase ("long") or to deliver ("short") a security on a given future date at a given price. Futures are traded in standardized form on organized futures exchanges and are generally offset before delivery. Futures contracts enable dealers (and others) to take a position on the movement in Treasury security interest rates.

any more than the up-front premium.[4] The market risk to the seller can be particularly severe and is not easily hedged (except by buying a similar option).

What of credit risk in options trading? The buyers of an option, if they choose to exercise their right to purchase or sell the security, must rely on the sellers performing their obligation. Therefore, the option holder faces credit risk to the extent that the option has become valuable. The seller, on the other hand, faces no credit risk because the most the seller expects to gain is the premium, which is received up front.

Exchange-traded options

Options traded on the organized exchanges are similar in character to the over-the-counter options just described except that exchange-traded options have standardized denominations and expiration dates and daily settlement of gains or losses thus greatly reducing the default risk of over-the-counter options. The option seller is required to maintain a margin account the size of which is increased as the option becomes more valuable, so that the option buyer's credit risk is reduced to a minimum. In contrast to the futures market, however, the buyers of options contracts are not able to realize their gains unless and until they sell or exercise their option. Thus, buyers do face a credit exposure vis-a-vis the options exchange itself. In practice, the most actively traded exchange-traded options are options on Treasury bond futures contracts.

This description of contracts and instruments sets the stage for a review of how dealers can use them, alone or in combination, to seek gains by incurring market risks and credit risks. We may now turn to a general characterization of market and credit risks and the means dealers use to measure and limit them.

Market risks in securities dealing are those that stem from changes in market prices. For example, if a dealer buys a Treasury bill at a price of 95 for delivery in a week's time, and if, during that week, the price of such bills falls to 94, then the dealer has lost money on that position. The fundamental source of market risk in the Treasury market is interest rate risk. When a change occurs in the level of

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[4]A diagram illustrating the lopsided risk of options is provided later (fig. VII.7, p. 137).

interest rates or in relative interest rates, dealers tend to gain or lose. How much they gain or lose depends on their sensitivity to a given change in the level of rates or in relative rates.

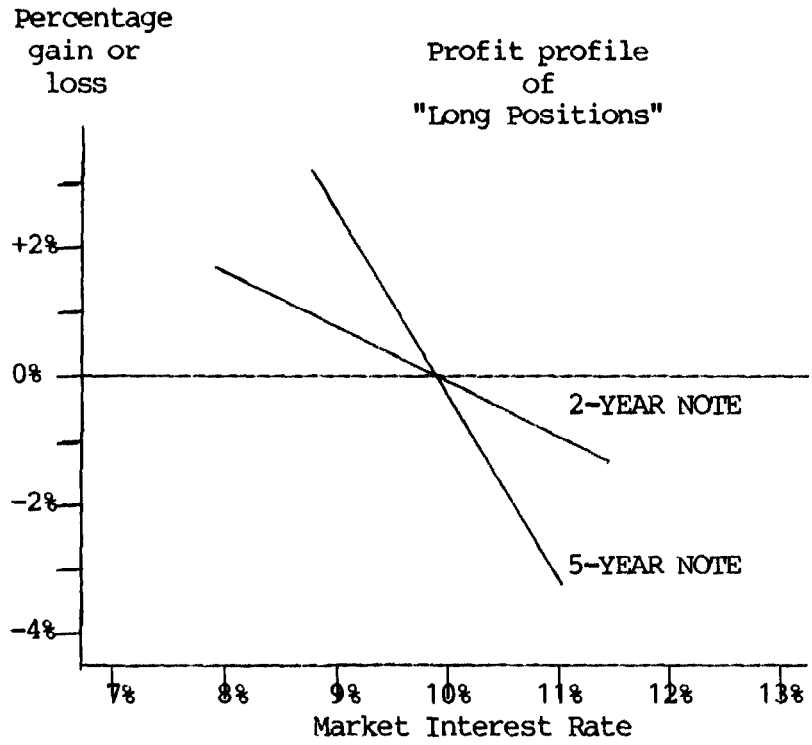
The concept of the interest rate sensitivity of a dealer's position is fundamental to an understanding of the market risk the dealer has incurred. The remainder of this section will dissect the market risks incurred in four types of dealer activities and how such market risks can be gauged.

Positioning risk

Perhaps the most obvious way to make or lose money from changes in interest rates is for a dealer to take an "outright position," long or short, on the level of interest rates. This can be done in a number of ways, using the techniques described earlier. Consider a "long position" in a Treasury security, one that would profit if the interest rate falls and the price rises. A long position can be taken by buying a bond financed with a dealer loan, doing a repo, buying a Treasury bond in the when-issued or forward market, or by taking a long Treasury futures position. Any of these would produce a gain if rates fell. As is demonstrated in figure VII.4, outright long positions produce gains or losses as interest rates move down or up, with the magnitude of the gain or loss depending largely on the maturity of the security.

Figure VII.4

"Long" Positioning Techniques



The diagram illustrates how the holder of a Treasury note ("outright long position") gains or loses symmetrically as interest rates move down or up, respectively. It also shows that the gain or loss is greater for a 5-year note than for a 2-year note.

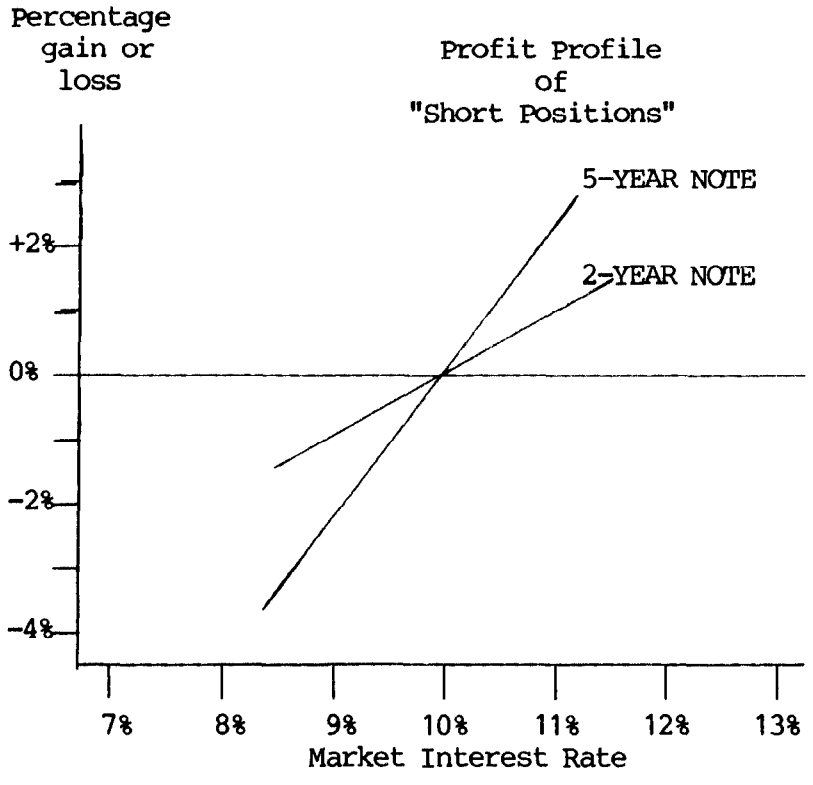
Examples of long positions:

—Buy a Treasury security.
--Do a repurchase agreement on a Treasury security (lend a Treasury security).
—Purchase a Treasury security forward.
--Purchase a Treasury futures contract.

A similar list of "short" positioning techniques can be made (see fig. VII.5). A short position produces a loss if rates fall and a gain if rates rise.

Figure VII.5

"Short" Positioning Techniques



This diagram shows how an "outright short position" in a Treasury note produces gains or losses that are symmetrical as interest rates move up or down, respectively. Again, the longer term note is more sensitive to rate changes than is the shorter term note.

Examples of short positions:

—Do a reverse repo on a Treasury security (borrow a Treasury security and sell it).
—Sell a Treasury security in the "when issued" market.
--Sell a Treasury futures contract.

Since short and long positions have opposite effects, a dealer who holds both a short and a long position in the same instrument on the same delivery month will incur gains that offset losses whichever way rates move. What counts therefore

is the dealer's net short or long position--the difference between the two positions. A net short or long position will produce a loss if rates move adversely. But how much? That depends on how sensitive the underlying security's price is to a given change in interest rates and, of course, on how big a position has been taken. As explained earlier, the longer the maturity of the security, the more the dealer will gain or lose from positions of the type just described. Thus, in the cash market (but not necessarily in the futures market), a 30-year Treasury bond is many times more sensitive--and more risky--than a 6-month Treasury bill.

Clearly, different securities and positions respond differently to a given change in interest rates. Thus, dealers can increase or decrease their net outright positions by increasing or decreasing the average maturity of their long and short positions. Dealers will tend to increase their long positions the more strongly they believe rates will fall and increase their short positions the more they expect rates to rise.

Arbitrage risk

As the volatility of interest rates in recent years has increased the riskiness of holding outright positions, many dealers have chosen to run a "matched book," in the sense that the interest rate sensitivity of outstanding long positions approximately equals that of outstanding short positions. However, by matching long positions at one point in the maturity spectrum with short positions at another, dealers may profit from a change in relative interest rates. Dealers have found that interest rates on different securities--in particular, at different points in the maturity spectrum of Treasury securities --seldom move by exactly the same amount. The dealer can profit from this knowledge. For example, as in figure VII.6, a $10 million long position in a 2-year note offset by a $20 million short position in a 1-year Treasury bill will, roughly speaking, protect the dealer from an overall parallel rise or fall in rates. But if 2-year interest rates fall relative to 1-year rates, the dealer will gain.

Figure VII.6

An Arbitrage Position: One Intended to Profit From an Anticipated Change in Relative Interest Rates

Dealer A

Assets		Liabilities	
Long position in 2-year note	$10 million	Short position in 1-year bill	$20 million

This position is roughly "matched" because a 2-year note is about twice as sensitive to a given interest rate change as is a 1-year bill.

	Long position		Short position	Net
If both rates rise	Loss		Gain	Approx. zero
If both rates fall	Gain		Loss	Approx. zero
If 2-year rate rises relative to 1-year rate	Loss	-more- than	Gain	Loss
If 2-year rate falls relative to 1-year rate	Gain	-more- than	Loss	Gain

This technique of positioning is often called "arbitrage" because it involves buying in one market and selling in another in order to profit from apparent mis-pricing. However, it too involves market risk--the riskiness of relative security price movements--and the dealers may of course take substantial positions in this kind of risk. Thus, a big position in so-called arbitrage may be riskier than a small outright position. Measuring the riskiness of such a position is more complex because it involves taking into account not only the sensitivity of security prices in each maturity to a movement in rates but also the extent to which security price movements in each maturity correlate with each other.

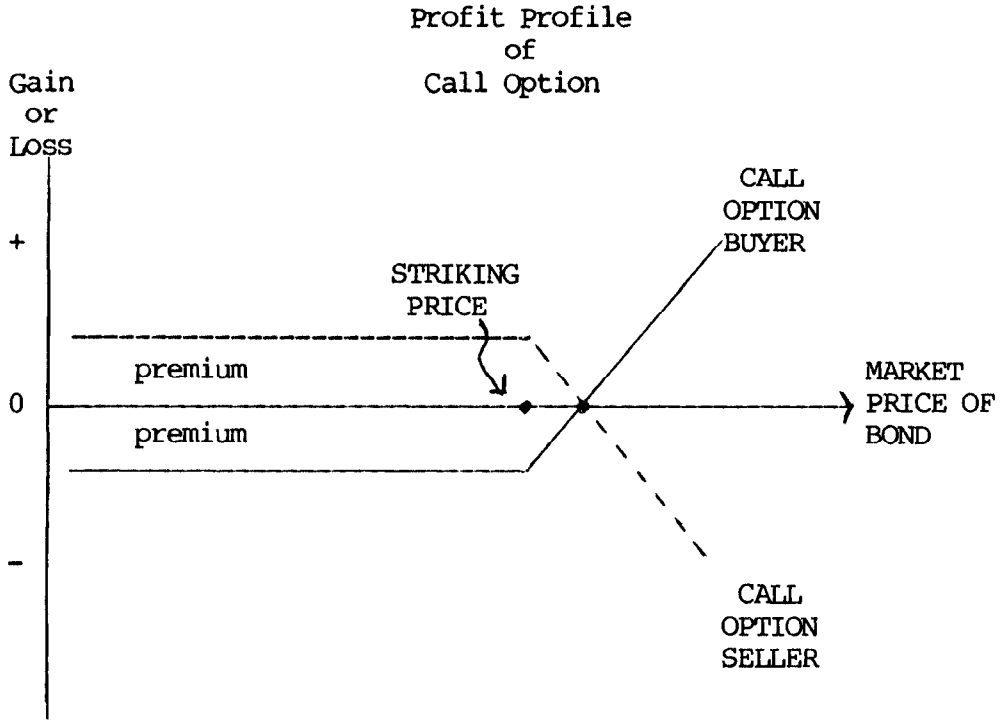
Options risk

Options, whether traded over-the-counter or on one of the organized exchanges, involve a risk that again depends on the movement of interest rates. As in an outright position, it is possible to take an options position that will gain if rates rise by selling calls (the right to buy a security at a fixed-in-advance price) or buying puts (the right to sell a security at a fixed-in-advance price). Buying calls or selling puts will produce a gain if rates fall.

As is shown in figure VII.7, however, the character of the risk faced by the buyer or seller of an option differs significantly from the symmetrical risks of outright or even arbitrage positions. Holders of call options gain if they can exercise this option at a profit exceeding the premium paid for the option, but they can lose no more than the up-front premium paid. Put option profits have a similarly skewed relationship to interest rate changes.

Figure VII.7

Gains and Losses from Options Positions



Interpretation:

(1) The buyer of a call option has the right to purchase the bond from the seller at the striking price. Thus, if the market price is below the striking price, the buyer foregoes that right and his/her loss equals the premium paid. But, to the extent that the market price exceeds the striking price, the buyer gains dollar-for-dollar as the market price rises.

(2) The seller of the option keeps the premium if the option remains unexercised but loses dollar-for-dollar the more the market price exceeds the striking price.

Because of the asymmetric risk that typifies options positions, and because of the complexity of options valuation methods, a given options position may require much more careful monitoring than do outright or arbitrage positions. To date, major dealers have not made this a dominant trading activity.

Market-making risk

Making a market involves quoting a two-way price--a "bid" price and an "ask" price--and being willing to buy or sell at those prices. Since the market-maker gives the customer the right to buy or to sell at given prices, market-making is, in effect, the giving of two options, albeit for a very short time period. Market making is more risky during periods of rate volatility or market illiquidity. However, by widening their bid-ask spreads during such periods, dealers discourage trading and build in a buffer of protection. Consequently, this activity has not proved to be a significant source of dealer vulnerability to market price fluctuations.

LIMITING MARKET RISK

Market risk, we have seen, arises from interest rate changes that produce gains or losses in dealers' outright, arbitrage, or options positions or from their market-making activities. A dealer may limit vulnerability to these risks by avoiding such activities, by possessing sufficient capital to absorb losses, or by getting out of losing situations as soon as possible. All of these are done to a degree, but the principal means of risk management is to establish offsetting positions: to configure the dealer's positions such that unanticipated changes in the level or structure of interest rates will produce gains in some positions sufficient to offset losses in others.

Maturity matching

Matching the maturity of assets with the maturity of liabilities is the classic banker's method of avoiding exposure to adverse interest rate movements. The bank that takes a 3-month deposit and lends it for 1 year at a fixed interest rate, for example, is subject to the risk that interest rates could rise during the succeeding 3-month periods when it has to refund the loan. Securities dealers can avoid interest rate risk by "financing to maturity," a term used earlier to describe collateralized borrowing for a period equal to the maturity of the security used as collateral.

Unlike commercial banks, however, securities dealers look at interest rate risk not only in terms of the interest rate at which they can "roll over" their assets and liabilities, but also in terms of the effect of interest rate changes on the value of their assets and liabilities. Consider, for example, the dealer whose position is illustrated in figure VII.8. The dealer has financed its holding of a 2-year Treasury note with a 1-month repo. The banker would say, "If interest rates rise in

1 month, I will lose because my cost of funding will rise." The government securities dealer will say, "If interest rates rise tomorrow, the value of my liabilities will fall, but the value of my asset will fall even further because of its greater maturity." In dealer parlance, "assets" and "long positions" are equivalent because each loses when interest rates rise and gains when interest rates fall. Similarly, "liabilities" and "short positions" are equivalent because each gains when interest rates rise and loses when interest rates fall.

Figure VII.8

Maturity Mismatched and Matched Dealer Positions

Maturity Mismatched Dealer

Assets (Long positions)	Liabilities (short positions)
2-week reverse repo	Overnight repo
2-year Treasury note	1-month repo

If interest rates rise, value of assets falls more than value of liabilities

If interest rates fall, value of assets rises more than value of liabilities

Maturity Matched Dealer

Assets (Long positions)	Liabilities (Short positions)
1-week reverse repo	1-week repo
3-month Treasury bill	3-month repo

Thus, only after matching the maturities of long positions with those of short positions can the dealer say, "Whether interest rates rise or fall, the value of my long positions will change by the same amount as the value of my liabilities: my gains and losses will be virtually the same."

"Duration" and "hedge ratio" matching

Because maturity is only an approximation of the effect of an interest rate change on the value of a particular security or position, dealers have devised more precise measures of the vulnerability of their positions to interest rate changes. The basic question is, "If interest rates were to rise by (say) 10 basis points (1/10 of 1 percent), how much would my position gain (or lose)?" The best-known method for determining this is a formula, based not only on the maturity of the bond or position, but also on its coupon interest rate and on the level and structure of interest rates, which gives the percentage fall (rise) in a Treasury bond's price for a 1 percentage point rise (fall) in interest rates. This is called the bond's "duration." Some dealers use different methods but with the same goal: to measure the sensitivity of a position's value to a given change in interest rates.

Knowing the duration of each long and short position and finding the weighted total duration of all assets and all liabilities allows the dealer to estimate the total dollar gain or loss that its overall portfolio will sustain for a given change in interest rates. The next step is to try to match the total duration or interest sensitivity of long and short positions.

Portfolio managers who use duration matching rely on figuring out a "hedge ratio": how much of short positions in X do I need to offset my long position in Y? What ratio of X to Y will leave me invulnerable to interest rate changes? The appropriate hedge for our mismatched dealer in figure VII.8, for example, might be short positions in interest rate futures. The hedge ratio approach would tell the dealer that to offset its net positive total duration of (say) $1.7 million, it would need to short seven Treasury bill futures contracts. All dealers recognize, of course, that they cannot expect perfectly offsetting gains and losses, partly because of uneven changes in rates along the yield curve, partly because of the asymmetrical effects of interest rate rises and falls, and partly because prices do not always behave in the predicted manner.

Hedging options positions

When the dealer's position includes options, whose values behave in the lopsided fashion described earlier, it can no longer rely on duration-type measures of the positions' sensitivity to interest rate changes. Instead, the dealer must rely on an options valuation formula to tell it what will happen

to its long or short options positions if interest rates change.[5]

The dealer's chief objective remains to discover, first, how much (in dollar terms) a given options position will gain or lose if interest rates change by a certain amount, and second, what the appropriate "hedge ratio" is: how big an offsetting position the dealer must take in futures or other contracts in order to insulate it from the adverse effects of interest rate changes. This is what the options pricing formula does.

In principle, therefore, a good options valuation formula will allow the dealer to find hedge ratios, called "deltas" in the options business, that protect it against gross losses resulting from interest rate changes. As it happens, however, this hedge ratio itself can change substantially as interest rates change. In addition, the hedge ratio, as well as the value of the option itself, is quite sensitive to the volatility of interest rates.

CONCLUSION

Treasury securities dealers are necessarily risk-takers. Dealers could not actively buy, sell, or underwrite Treasury bills, notes, and bonds unless they were willing to engage in one side of a transaction without being sure of their ability to offset it on the other side without loss. The presence of active, imperfectly matched position-taking and market-making by dozens of securities dealers is what gives the Treasury market its depth and liquidity.

The willingness of dealers to take positions using techniques such as repurchase agreements and forward contracts and to quote two-way prices, however, exposes them to market risk. A well-run firm will measure, monitor, and limit such risks using the concept of the interest rate sensitivity of a position and the volatility of the market to determine how many and what kinds of market risks should be taken, given the firm's capital and liquidity.

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[5]For an introduction to methods of valuing and hedging fixed-interest options, see various chapters in The Financial Handbook, ed. by E. Altman (Wiley, 1982), or The Handbook of Fixed Income Securities, ed. by Fabozzi and Pollack (Dow Jones-Irwin, 1983).

FAILURES OF TREASURY SECURITIES DEALERS

As discussed in Chapter 1, congressional interest in the Treasury securities market was initiated partly as a result of dealer firm failures. This appendix describes the circumstances surrounding certain government security dealer failures that occurred between July 1975 and April 1985.[1] These failures had certain common characteristics:

(1) Firms took positions that eventually turned against them or engaged in fraudulent activities.

(2) To finance these positions and cover their losses, the firms generated additional cash and securities by taking advantage of conventions in repo pricing practices or their trading partners' willingness to take uncollateralized positions.

(3) Firms used securities belonging to customers as if the securities belonged to the firm--pledging them as collateral to obtain additional financing.

(4) Firms hid their losses through various accounting schemes, including shifting the losses to affiliated firms.

(5) Firms were eventually exposed when trading partners demanded their collateral or refused to continue the practices that generated the additional cash or securities.

(6) All firms were unregistered government security dealers outside of the routine oversight of federal regulatory agencies.

This appendix also discusses the issues these failures raised and how they affect market procedures, practices, and regulation. Specific issues included the pricing of accrued interest in computing the value of repoed securities, the status of repos in bankruptcies, and the responsibilities of clearing agents who hold securities in their accounts for customers.

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[1]The information on firm failures was summarized from SEC and Federal Reserve reports, court documents, and news articles. We did not include all firms, such as Winters Government Securities, Inc. (1977), Hibband and O'Connor Government Securities, Inc. (1982), or other small firm failures.

FINANCIAL CORPORATION

The Financial Corporation of Kansas City, Missouri, a rapidly growing investment company, was placed in receivership in July 1975 after the SEC found that the firm could not meet its obligations in connection with government securities transactions. Financial Corporation was reported to have speculated in the government securities market using funds borrowed from securities dealers and other parties.

By the time of its demise, the firm had built up a $1.8 billion position in government securities by forming a chain of repurchase agreements. It purchased securities from dealers with a small amount of its own capital and used these securities as collateral to borrow additional funds by entering repurchase agreements with the dealers as well as with municipal governments, banks, and other corporations. With the loan proceeds, Financial Corporation purchased additional securities and again repoed them out, thus forming a chain of securities purchases and repurchase agreement transactions.

Financial Corporation profited from the "positive carry" on these transactions--that is, the gain resulting when the interest cost of financing the securities is less than the yield of the securities being financed. However, when interest rates moved adversely, the firm began losing money and resorted to taking advantage of unwary investors by undercollateralizing repurchase agreements with customers. It also generated funds by entering reverse repurchase agreements with customers. Each security Financial Corporation reversed generated cash roughly equal to the amount of accrued interest on the security since, at that time, it was general market practice to ignore accrued interest in pricing collateral on reverse repurchase agreement transactions. These actions, however, were not sufficient to prevent the firm from failing, leaving an estimated $18 million in unpaid claims.

According to one author,[2] the failure of Financial Corporation, although relatively small in terms of dollar impact, was important because it raised crucial questions concerning the nature of repurchase agreement transactions. For example, it first raised the question of whether repurchase and

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[2]Marcia Stigum, The Money Market, Dow Jones-Irwin, Homewood, Illinois, 1983 (pp. 322 and 323).

reverse repurchase agreements represented true purchases and sales or merely collateralized loans. It also raised questions about rights of holders of collateral to sell the collateral in the event of non-performance in repurchasing the securities and the ownership of such sale proceeds if the proceeds exceed the amount of the funds originally loaned plus any accrued interest due.

DRYSDALE GOVERNMENT SECURITIES, INC.

In May 1982, Drysdale Government Securities, Inc. (Drysdale) shocked the government securities market by failing to pay Chase Manhattan about $160 million in interest that had accrued on securities Chase had sold to Drysdale under repurchase agreements. In total, Drysdale had lost in excess of $300 million in government securities trading. Fortunately, damage to the market was limited since Drysdale's clearing banks assumed liability for the losses. The Drysdale failure, however, had a major effect on the marketplace and fostered positive changes in the government securities market.

Drysdale GSI's existence was short but active. It started trading on February 1, 1982, and by May 17, 1982, it notified Chase of its inability to pay the accrued interest.

Drysdale GSI was an affiliate of Drysdale Securities, Inc., which was an SEC-registered broker/dealer and a regulated member of the New York Stock Exchange. The parent firm was founded as a partnership in 1889, but in 1975 the ownership changed and a corporate form was adopted. It became active in the government securities market in the spring of 1981. Government securities dealers reportedly knew the firm as a relatively aggressive trader of government securities during 1981, one that was taking both long and short positions.

The large position in borrowed and lent securities maintained by Drysdale Securities, Inc., made it difficult for the firm to satisfy the New York Stock Exchange minimum capital requirements. Apparently for that reason, Drysdale GSI was formed to insulate the government securities activities from the exchange's capital adequacy regulation. Drysdale GSI was formed with initial capital of approximately $20 million.

Drysdale GSI's trading strategy consisted of assuming very large, long positions in issues whose yields were expected to decline relative to the yields on issues it sold short in another maturity sector. If yields move as expected, the gains

can be substantial. However, if the yield movement is adverse, losses can also be substantial. Apparently, Drysdale experienced substantial trading losses that it hid from the market so it could continue in business.

Drysdale was able to conceal its losses by reversing (reverse repurchases) through agent banks--Chase Manhattan and others--high-coupon securities nearing a coupon date. Drysdale put up cash close to the dollar prices at which these securities were trading. However, those prices did not include accrued interest--an acceptable market practice at the time. Drysdale GSI then sold the securities it had obtained for the principal plus accrued interest, thereby generating significantly more cash than it had initially paid out. With the cash it generated, Drysdale could then provide margin on securities it bought outright and financed with lenders on repurchase agreements. It was able to do this on a large scale by using banks as "blind brokers" to screen its identity from those selling securities.

On May 17, 1982, the semiannual coupon payments on a sizable amount of securities reversed by Drysdale were due. Market practice required Drysdale to pass payment of the interest to the party from which it had acquired securities. Drysdale stated that it was unable to make payment of the interest on the securities it had borrowed. At that time, it had a gross short position in Treasury securities of about $3.9 billion and a gross long position of about $2.4 billion.

Initially, Chase Manhattan refused to make the interest payment on the grounds that it was only an agent. Chase, shortly thereafter, reversed itself and agreed to meet all its Drysdale-related obligations. In addition to Chase, both Manufacturers Hanover and U.S. Trust, two other banks used by Drysdale, agreed to meet their obligations. Drysdale's clearing bank, Chemical Bank, experienced no direct losses because it was able to liquidate its collateral, which covered the bank's position.

In the wake of the Drysdale failure, the Federal Reserve Bank of New York responded by taking immediate actions to restore liquidity to the marketplace. It also assumed a lead role in correcting procedures (e.g., inclusion of accrued interest in pricing repurchase agreements) that contributed to the apparent breakdown in the market's self-regulatory mechanisms.

COMARK

Organized in 1977 as a limited partnership, Comark was a securities dealer headquartered in Newport Beach, California. As a securities dealer headquartered in California, Comark was licensed and regulated by the California State Department of Corporations. Its paid-in capital was $15.7 million. Comark aspired to become a reporting dealer and began reporting informally to the Federal Reserve in November 1981. However, the firm was never added to the Federal Reserve's list of reporting dealers because it was not a significant market-maker and never provided up-to-date balance sheet and income information.

Some of Comark's customers apparently allowed it to retain custody of securities they had purchased from it in repurchase agreements. The firm's accounting system had fallen into disarray, and it is alleged that it posted the securities as collateral to secure borrowings (double hypothecation) that allowed it to continue functioning, even though its capital had been depleted. It eventually was unable to meet its customers' demands for their securities.

The initial closing of Comark in June 1982 was caused by the decision of its clearing bank, Marine Midland, to terminate its relationship with Comark. Midland did this because it believed that Comark had used securities owned by Comark's customers but left in Comark's custody as collateral for loans. Comark maintained, because of its accounting system problems, that its lack of control resulted in the dispute with the clearing bank.

To protect its position, Marine Midland sold the securities which had collateralized its loan to Comark, thereby liquidating the loan. The clearing bank suspended clearing Comark's transactions but resumed for a time on a secured and closely monitored basis after receiving representations from Comark that it would be able to provide additional capital. However, the bank subsequently concluded that the prospects for this additional capital were uncertain and suspended operations again. Comark, at this point, had insufficient liquid assets to meet customer demands for the return of their securities, leaving unsettled claims of its customers amounting to $16.6 million.

LOMBARD-WALL, INC.

Lombard-Wall, Inc., was an unregistered government securities dealer organized in 1970 by a bank holding company and later sold to private interests. Lombard-Wall's failure, which occurred soon after Drysdale's demise, heightened concerns about the nature of repurchase agreements--that is, whether they are secured loans or purchase and sale transactions.

Lombard-Wall, Inc.'s failure in August 1982 appeared to come about as a result of market conditions, not fraud. It got into difficulty by entering long-term repurchase agreements with its customers--transactions that carry market risk when not properly handled. When prices declined on the securities it had sold under long-term repurchase agreements to state and local governmental entities, Lombard-Wall, Inc., incurred substantial losses and had to come up with additional capital to replenish the margin held by those customers. Lombard-Wall, Inc., obtained the additional capital by undercollateralizing funds provided by other customers and by taking excess collateral from customers selling securities under repurchase agreements.

On August 12, 1982, Lombard-Wall, Inc. filed a voluntary bankruptcy petition. In its filing, Lombard-Wall, Inc., listed total assets of $2.059 billion and liabilities of $2.053 billion and said it owed $177.2 million to its 10 largest unsecured creditors. The New York State Dormitory Authority, Lombard-Wall's largest unsecured creditor, had $250 million in secured debt and $52 million in unsecured debt.

The Lombard-Wall, Inc. failure raised the question of how the Bankruptcy Court would treat repurchase agreements. Lombard-Wall, Inc. argued, and the court agreed, that the repurchase agreements were subject to the automatic stay of the Bankruptcy Code thereby preventing Lombard-Wall's customers from using the funds or from selling the securities they had as collateral. The stay raised the question of whether a repurchase agreement was a secured loan or a purchase and sale transaction. The inability of Lombard-Wall customers to use either their funds or securities had a detrimental effect on confidence in the market for repurchase agreements. The Federal Reserve Bank of New York filed an amicus curiae brief with the court for consideration. The Bank stated that a repurchase agreement should be characterized as a purchase and sale transaction. It stated that if the court characterized a repurchase agreement as a secured loan, it could have an adverse

impact on the Federal Reserve's ability to conduct domestic monetary policy effectively. The Bankruptcy Court ruled, however, that repurchase agreements should be treated as "secured lending transactions."

The repurchase agreement issue was resolved in part by passage of the Bankruptcy Amendments and the Federal Judgeship Act of 1984. This legislation exempts repurchase agreements in Treasury and federal agency securities and bankers acceptances and CDs from the automatic stay provisions of the Bankruptcy Code. However, two situations remain unaffected by the Act. First, if a dealer ceases to operate but does not file for bankruptcy, the law's provisions do not appear to apply. Second, if the failed dealer is a bank, then the Bankruptcy Code does not apply. Instead, it is up to the receiver appointed by FDIC or the OCC to decide on the disposition of outstanding repo obligations. Both regulators have said that in principle they supported letting repo holders liquidate. But each failure would have to be evaluated separately because the receiver must act according to the relevant state law.

LION CAPITAL GROUP

Lion Capital Group (Lion) was a relatively small non-registered broker/dealer doing business in government securities in the State of New York. Its business involved buying, dealing, and selling securities for its own account and for its commercial and government institution customers.

On May 2, 1984, Lion and four associated entities--Lion Capital Associates and Blackburn Associates (two limited partnerships) and Hamilton Gregg Asset Management Ltd. and Hamilton Gregg Management Ltd. (two corporations)--filed for protection under Chapter 11 of the Federal Bankruptcy Code. The bankruptcy resulted from substantial losses in bond trading and "straddles"--a tax shelter ploy that produces current tax losses and postpones taxable gains.

The filing raised issues concerning about $40 million invested by approximately 60 Lion customers, 24 of which were New York State School Districts. Those districts had apparently invested their funds in repurchase agreements with Lion after receiving rate quotations through National Money Market Securities, Inc. (NMMSI).

Lion apparently induced the school districts to invest by promising yields higher than those usually available. School district officials testified that they were also influenced by a New York State Comptroller's Office opinion issued in April 1983 naming NMMSI as a broker that could be used when investing.

Lion, for the most part, had no direct contact with the school districts beyond issuing confirmations of transactions and receiving funds from the school districts and returning the funds with the interest earned. The confirmations represented that the underlying securities for the repurchase agreements were held by Lion's clearing agent, Bradford Trust Co. (Bradford). That is, certain customers never took actual possession of the securities and instead accepted the assurance of NMMSI that they were being held for them at Bradford.

Bradford provided custody, safekeeping, financing, and clearance services for brokers, dealers, and banks. It also accepted deposits and made loans to these parties. After the initiation of the bankruptcy proceedings, there was disagreement over whether Bradford was a trustee, a clearing agent, or both. The school districts claimed that Bradford was a trustee; however, Bradford claimed that the securities were being held as collateral for a loan from Bradford to Lion. When Lion declared bankruptcy, it was found that the firm's assets were inadequate to cover the investments of school districts, municipalities, and others, as well as loans that Bradford had made to Lion.

On February 25, 1985, a New York State grand jury indicted three of Lion's officers, alleging state law securities fraud and grand larceny. According to the New York State Attorney General: "The essence of this fraud was that Lion Capital used the same securities as collateral on two different transactions." Subsequently, lawsuits were filed with the courts to decide the issue between Bradford and the school districts and to seek damage from the owners of Lion Capital. These issues have yet to be completely resolved. However, an attorney for the school districts estimated that the school districts might end up recovering close to 70 percent of their loans to Bradford after other assets are distributed and payment is received from Lion's limited partners.

E.S.M. GOVERNMENT SECURITIES, INC.

E.S.M. Government Securities, Inc. (GSI), and its parent E.S.M. Group, Inc., were founded in October 1976. The GSI operated by acquiring securities, in part, through unsecured

borrowing and then using these securities to enter into repurchase agreements and other transactions to achieve trading gains.

According to court filings, the GSI experienced losses beginning in 1977 by speculating incorrectly on interest rate movements. These losses had accumulated to about $300 million by March 4, 1985, when the SEC filed its complaint. SEC analysis showed that E.S.M. owed its customers $1.6 billion and in turn was itself owed only $1.3 billion. The December 31, 1984, GSI balance sheet showed about $3 billion in assets and a capital/asset ratio of about 1 percent (not unusual for Treasury securities firms).

Much of the loss was hidden from the trading partners of the GSI through offsetting transactions with the parent that allowed the trading losses of the GSI to be absorbed by the parent. These losses were then transferred to an affiliate firm, E.S.M. Financial Group Inc., a firm wholly owned by one of the owners and with no apparent business purpose except to mask the losses of the GSI and the parent. The books of the GSI and the parent both remained clean because the GSI books did not show any transactions losses while the parent's books hid the loss amount--reflecting them as a receivables or loans due from the affiliate.

The SEC complaint alleged that the affiliate owed the GSI $200 million but had assets of only $50 million, $30 million of which were loans due from the officers. As a result, the SEC alleged that the GSI and/or its affiliate would be unable to repay about $300 million owed to its customers.

The accounting firm of Alexander Grant and Co. has been sued for negligence by creditors of E.S.M. in part because it allegedly failed to question the collectability of the receivables. In addition, the auditor faces criminal charges for allegedly accepting payments to not disclose E.S.M.'s position.

Not all of the GSI's customers were harmed by the dealer's apparent fraud. Certain ones had followed the recommended practices of (1) taking possession of securities pledged as collateral and (2) ensuring that the value of that collateral was adequate to cover their exposure. When E.S.M. failed, these customers liquidated their collateral, which was sufficient to close out their positions without a loss. (Such immediate liquidation was made possible by the passage of the Bankruptcy

Reform Act of 1984 which exempted repurchase transactions from the automatic stay provisions of bankruptcy law.)

In contrast, some of those that were hurt had let E.S.M. deposit the securities with E.S.M.'s own clearing agent, Bradford Trust. However, since Bradford held these securities for E.S.M. and not in segregated accounts for customers, the customers had no direct claim on their collateral when E.S.M. failed and had to wait in line with E.S.M.'s other creditors.

Some E.S.M. customers were encouraged to let E.S.M. hold their securities because E.S.M. offered as much as a 1/4 percentage point bonus to customers who did not take possession of the collateral and because customers had to pay the cost of establishing an account to handle their transactions.

Because E.S.M.'s problems were confined to the GSI subsidiary, the holding company parent, and the financial affiliate, the firm's activities fell outside of the routine oversight of the SEC. (A separate firm, E.S.M. Securities, Inc., was SEC-registered and a member of NASD but it was apparently not involved in the intra-company fund transfers.) As a result, the SEC could not investigate E.S.M. until it could convince a circuit judge to issue a court order based on evidence of probable fraud.

The SEC had tried to examine E.S.M.'s activities in 1977 based on allegations of excessive fees but was thwarted by E.S.M. in court. The court battle went on until 1981 when the SEC dropped the case. According to the SEC, the case was dropped because it was too old--that is, any finding from 1977 would have been difficult to prove. The SEC also acknowledged that if it had entered the firm during this time it probably would have uncovered the problems that led to E.S.M.'s collapse.

BEVILL, BRESSLER, AND SCHULMAN

Bevill, Bresler, and Schulman Asset Management Corp., a government securities dealer located in New Jersey, failed in April 1985, with alleged customer losses of as much as $235 million before recoveries, if any. It is alleged that Bevill, Bresler, and Schulman fraudulently entered into repos without proper collateralization in order to finance large trading losses incurred by an affiliated unregistered government securities dealer. It is also alleged that a registered broker-dealer affiliate solicited government securities transactions which were placed with the unregistered dealer.

Repurchase agreement customers of Bevill, Bresler, and Schulman, including S&Ls, banks, and other dealers, suffered losses for reasons similar to customers of E.S.M.: they found the securities underlying their transactions were claimed by other parties and their purportedly secured repos were in fact unsecured. It appears that in many instances government securities purportedly held for the benefit of customers had been resold or otherwise converted by Bevill, Bresler, and Schulman. Losses also were sustained by repo customers who had provided excess margin. As a result of their dealings with Bevill, Bresler, and Schulman, three small government securities dealers also failed or were liquidated.

APPENDIX IX

COMMODITY FUTURES TRADING COMMISSION
2033 K STREET, N W , WASHINGTON, D C 20581

OFFICE OF
THE EXECUTIVE DIRECTOR

May 1, 1986

Mr. Craig Simmons
Associate Director
United States General Accounting Office
Washington, D. C. 20548

Dear Mr. Simmons.

Thank you for the opportunity to review and comment on your draft report, "U. S. Treasury Securities: A Description of the U. S. Treasury Securities Market." I am attaching a copy of the report as well as a list of the pages on which the staff has comments.

In addition, the staff has the following general comments and questions·

See comment 1.

1. Why are 1984 statistics used rather than 1985?

See comment 2.

2. Volume of futures trading should be expressed in terms of number of contracts traded. The dollar value of the contracts is not relevant to an analysis of the size of the markets.

See comment 3.
Now on p. 33.
Now on p. 36.

3. What is included in your definition of "financial futures?" Some parts of the text (see page 30) indicate that futures on foreign currencies are included but futures on stock indexes are not included, but the table on page 34 seems to include stock indexes but not foreign currencies. It seems that you are referring to "interest rate" or "debt" futures.

See comment 4.
Now on p. 58.

4. The text needs to be clarified (e.g., at page 63) to indicate that options on Treasury securities are regulated by the SEC, while options on futures on Treasury securities are regulated by the CFTC.

See comment 5.
Now on p. 58.

5. The explanation of CFTC's oversight responsibilities is incomplete. It seems that the discussion in the text (e.g., at page 63) is limited to CFTC's role in promulgating rules which are enforced by the exchanges. The discussion does not include the CFTC's daily market surveillance, sales practice reviews, minimum financial requirements, or antifraud and other enforcement activities. Nor does it discuss the role of NFA.

See comment 6.
Now on p. 128.

6. The text should clarify the difference between credit risk and market risk (e.g., at page 147).

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If you have any questions concerning the CFTC staff's comments, please call Stacy Dean at 254-7360.

Sincerely,

Donald L. Tendick

DONALD L. TENDICK
Deputy Executive Director

Enclosures

The following are GAO's comments on the Commodity Futures Trading Commission's letter dated May 1, 1986.

1. We used 1984 statistics in the draft report which went to agencies for comment because in many instances 1985 statistics were not readily available. Where 1985 statistics have become available, we have included them in the report.

2. Volume of futures trading has been changed to number of contracts traded, except where dollar value is used from Federal Reserve statistics for comparison with cash market transaction volume.

3. We changed the wording to reflect "futures trading based on debt instruments."

4. We have added to the discussion to clarify the roles of the CFTC and the SEC.

5. We added sentences to clarify the roles of the CFTC and the NFA.

6. We have expanded and clarified this section.

APPENDIX X

Public Securities Association
40 Broad Street
New York NY 10004 2373
(212) 809 7000

PSA

May 29, 1986

Mr. Craig A. Simmons
Associate Director
United States General Accounting Office
20th & C Streets, N.W.
Martin Building
Room M1322
Washington, D.C. 20548

Dear Mr. Simmons:

The Public Securities Association would like to express its gratitude to the General Accounting Office ("GAO") for being provided the opportunity to present comments on the GAO's draft report entitled "U.S. Treasury Securities: A Description of the U.S. Treasury Securities Market". The draft report presents a comprehensive description of the U.S. government securities market. We believe it will prove to be an important future source of information on this market.

As you know, over the last several years, PSA has been actively involved in both industrywide self-regulatory efforts to promote sound business, trading and operations practices in the U.S. government securities market, and more recently, in public discussions on the question of federal regulation of the market. PSA's Primary Dealers Committee has endorsed the concept of new federal legislation to provide a responsible and efficient framework for regulation of U.S. government securities brokers and dealers. In light of the obvious public pressures existing because of Congressional consideration of this matter, we applaud the GAO for taking such a thoughtful approach to this issue.

Appearing below, in page order, is a listing of our comments on the draft report:

Page #	Comments
14	Last paragraph, first sentence. Change to, "The Federal Reserve Bank of New York has designated a group of securities dealers and commercial banks as primary dealers."

Now on p. 21.

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	Page #	Comments
Now on p. 26.	22	Second paragraph. We believe it would be helpful to add more specificity by indicating the number of primary dealers that have encountered serious financial problems.
See comment 1. Now on p. 27.	23	Second paragraph, third sentence. Change to, "However, in early 1984, The Federal Reserve Bank of New York requested that non-regulated non-primary dealers..."
Now on pp. 27-30.	23-26	General Comments on Question of Brokers' Screens The practice of most government securities brokers to limit access to their individual screens is not a concerted decision of the brokers as a group, or of the brokers and primary dealers acting together. The decision to limit access to a particular broker's screen is made by the individual broker involved. That decision is based upon a judgment by the particular broker that confining screen access to a specific group of dealers will be beneficial to that broker's business. That decision may of course be consistent with the desires of the limited group of dealers who have access to that broker's wires, but in no way implies an agreement or understanding to limit access. In other words, the decision to limit screen access is a business decision made unilaterally by each broker, acting independently and in its own best, perceived interest. We believe it inaccurate to say that the primary dealers as a group believe that they, and they alone, are entitled to the brokers' screens as compensation "for their added risks in fulfilling their requirements to participate in Treasury securities auctions." Primary dealers have freely accepted both their role as market makers, and their obligation to participate regularly, in good times and bad, in Treasury auctions of new securities. They do not believe that by accepting this role they are entitled to special privileges. Instead, many primary dealers believe that if non-primary dealers are permitted access to brokers screens, the utility of the screens will be lessened and the liquidity of the market compromised. Primary dealers will have less incentive to use the broker screens if the quality and reliability of their trading counterparties cannot be assured. If the integrity of brokers' screens is compromised, the screens which greatly facilitate government securities trading, may be used less, and the efficiency of the market reduced. It is important to note in this context that brokers' screens are an integral part of the government securities market. Altering this mechanism could have unintended system wide effects which could reduce the depth, breadth and liquidity of the market.

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	Page #	Comments
Now on p. 34.	30	The section on when-issued ("wi") trading should be placed under the section on Forwards, on page 32, since the transactions are similar in nature. In addition, we believe it is important to expand the discussion in this section in order to include a reference to the importance of wi trading in the distribution process for government securities.
Now on p. 38.	36	The second paragraph should reflect the Treasury Department's proposed amendments to the book-entry regulations. Last paragraph, change the first sentence to, "Treasury eventually decided not to go forward with the proposal for changing the book-entry system as a way to regulate the market."
Now on p. 38.	37	Section on Operational Concerns seems to not fit with the general flow of the report up to that point.
Now on p. 42.	42	Eighth line from the bottom, please strike "just bought." Fourth line from the bottom, change "asked" to "bid."
Now on p. 46.	49	First line, please strike, "ranking second in importance to market risk..." We believe that "knowing one's counterparty" or credit risk ranks second to none in conducting business in the government securities market.
Now on p. 47.	50	First line, after "reduced" insert, "by knowing your counterparties and...
Now on p. 49.	53	First complete paragraph. Add a reference to the fact that on October 15, 1984, the Federal Home Loan Bank Board adopted its "sense and intention" that FSLIC, as receiver of a thrift institution in liquidation, should not attempt to stay, avoid, or otherwise limit the exercise by a repo participant of a contractual right to cause the liquidation of a repurchase agreement arising from the appointment of FSLIC as receiver or in a similar capacity.
Now on p. 51.	55	First complete paragraph, third sentence. We believe that the limitations faced by customers in managing their risks are often not the result of information availability but limited customer expertise in this regard, i.e., "knowing your counterparty."
Now on p. 53.	57	First complete paragraph, change "1985" to "1982." We suggest referencing the publication of a PSA pamphlet entitled, "Business Practice Guidelines for Participants in the Repo Market" which was prepared in October 1982 with the intention of fostering sound credit, business, and trading practices for participants in the "repo" market. The Guidelines suggest a means available to reduce risk and diminish uncertainty when conducting repurchase transactions.

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	Page #	Comments
Now on p. 65.	72	Second paragraph, the listing of agencies should include the Federal Financial Institutions Examination Council as well.
Now on p. 65.	73	We believe that Bevill, Bressler, and Schulman was a registered dealer but its subsidiary, Bevill, Bressler and Schulman Asset Management Company was not.
See comment 2. Now on p. 84.	94	Basic Information on Marketable Treasury Securities should include the Treasury's proposed amendments to the book entry regulations and refer to both TRADES and TREASURY DIRECT.
Now on p. 88.	97	A footnote should be included here to indicate that primary dealer status is determined solely by the Federal Reserve Bank of New York.
Now on p. 90.	99	Second paragraph, second sentence. We believe that the dollar volume of transactions quoted is understated significantly. In 1984 dealers reporting to the Federal Reserve Bank of New York indicated an average of over $53 billion worth of transactions. In 1985 the figure was $75 billion and in the first quarter of 1986 the figure was $100 billion.
Now on p. 97.	109	Second sentence, change to, "Over the counter options however are usually private off-exchange trades between and among the primary dealers and their customers."
Now on p. 98.	110	First paragraph, second sentence, strike the terms "make money" and "losing money" and substitute the terms in parentheses.
Now on p . 100.	112	Change "arbitraging" to "arbitrage."
See comment 3. Now on p. 101.	114	We suggest inserting the following definition of repo under "What Are Repurchase Agreements?" as follows: "A repo is technically an agreement which comprises two distinguishable acts, but is part of a single transaction. Securities, most often U.S. government and/or federal agency securities, are sold by the first party (e.g., a securities dealer or dealer bank) to a second party (e.g., a customer), with a simultaneous agreement that the first party will repurchase the same, or substituted, securities on a day certain, for a price certain, plus interest or its equivalent at a specified rate. A reverse repo is merely the mirror image of a repo transaction. In a reverse repo, securities are purchased by the first party with the simultaneous agreement of the second party to repurchase the same or substitued securities. Please strike the term "collateralized loan."

APPENDIX X

	Page #	Comments
Now on p. 104.	118	Footnote for definition of matched book should be presented earlier, i.e., chart on page 117.
Now on p. 108.	124	First sentence should include the point that all government securities transactions are conducted via the telephone.
Now on p. 111.	128	Change the first point to "take control of your collateral through your agent or through direct possession". Change third point and make it first point. We believe that knowing your counterparty is of primary importance.
Now on p. 113.	129	Line two, change "holding" to "controlling."
Now on p. 112.	133	Section entitled "Know Your Counterparty" should really be the first section. Knowing your counterparty should be of primary importance and should therefore be first on the list.
Now on p. 117.	135	Sections entitled "Use of Written Repo Agreement" should include reference to the PSA Prototype Repo Agreement.
Now on p. 141.	164	The first point should include the term "Fraud." It is integral to failures of some of the government securities dealers specified.

We hope that our comments prove useful. We stand ready to assist you in any way possible and look forward to final publication of this report.

Sincerely,

Heather L. Ruth
Executive Director

The following are GAO's comments on the Public Securities Association's letter dated May 29, 1986. We incorporated all of the PSA's suggested changes except for instances noted below.

1. We did not include "non-regulated non-primary dealers" on page 23 (now p. 27) because the expanded reporting program applies to regulated as well as unregulated dealers. The voluntary capital adequacy program, however, applies to non-regulated, non-primary dealers.

2. Discussion of Treasury's proposed amendments to book-entry regulations, which PSA suggested including on page 94 (now p. 84) has been included earlier in the text on page 38.

3. We inserted the PSA's definition of a report on page 114 (now p. 101), however we did not stike the term "collateralized loan" from the text. We instead modified the sentence to read, "A repo can be characterized as being like a collateralized loan in the form of sold and repurchased securities."

(233113)

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