

**SURVEY OF THE FEDERAL RESERVE SYSTEM'S  
SUPERVISION OF THE TREASURY SECURITIES  
MARKET**

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**A DISCUSSION PAPER**

**PREPARED BY THE GENERAL ACCOUNTING OFFICE**

**FOR THE**

**SUBCOMMITTEE ON DOMESTIC MONETARY POLICY**

**OF THE**

**COMMITTEE ON**

**BANKING FINANCE AND URBAN AFFAIRS**

**HOUSE OF REPRESENTATIVES**

**NINETY-NINTH CONGRESS**

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

May 3, 1985

The Honorable Fernand J. St Germain  
Chairman - Committee on Banking, Finance  
and Urban Affairs  
2129 Rayburn House Office Building  
Washington, D.C. 20515

My dear Mr. Chairman:

I am pleased to transmit herewith the discussion paper prepared by the U.S. General Accounting Office in partial completion of my request to assess the management of the national debt by the Department of the Treasury and the Federal Reserve System acting as fiscal agent for the United States.

This survey provides a comprehensive background about the Treasury securities market through discussion of the growth and composition of the federal debt, how the debt is sold, and the market environment, including a description of government securities regulation and the derivative products.

The survey also provides a background about current issues in the government securities market, including a discussion about risks, how they are managed, and the nature of and changes in oversight and regulation, including the impact of technology. The survey was released in October, 1984 and thus data, such as the number of primary dealers, deficit projections, statistics regarding the market, or market development, are not all current. Additionally, some sections of the October paper were changed or eliminated based on comments received after its release.

Follow-on work currently underway by the GAO will also enable interested parties to assess the issues which this Subcommittee would like to better understand especially in light of the recent failures of several government securities firms.

The request for this discussion paper arose from questions raised by the Subcommittee during hearings on problems associated with federal debt management held on March 23 and 24, 1982. Additional questions were raised during hearings on the impact of money and credit policies of federal debt management held on April 25, 1983.

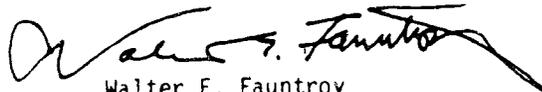
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Since then, the Subcommittee has held two additional hearings which have examined the Federal Reserve's response to the concerns which have been raised by the Subcommittee and further developed through this discussion paper. The fourth hearing, held May 31, 1984, considered the first draft of the Federal Reserve's capital adequacy guidelines. The fifth hearing, held April 1, 1985, examined the draft of the revised guidelines which were formally proposed on February 7, 1985.

In each subsequent instance, the Subcommittee has relied heavily on the materials provided by the GAO and on this discussion paper in particular. In view of the importance which these documents have played in the Subcommittee's deliberations, they are transmitted for your information and further use.

As chairman of the Subcommittee, I want to express my appreciation to the staff of the GAO working on this project. They have done a thorough and complete job in every instance and provided invaluable guidance on a subject which is both complex and critical to our Nation's domestic financial situation.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Walter E. Fauntroy". The signature is fluid and cursive, with a long horizontal stroke at the end.

Walter E. Fauntroy  
Subcommittee Chairman

(IV)

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DISCUSSION PAPER

U.S. GENERAL ACCOUNTING OFFICE

SURVEY OF THE FEDERAL RESERVE SYSTEM'S SUPERVISION

OF THE TREASURY SECURITIES MARKET

The market for U.S. Treasury securities, important for meeting the financing needs of the government, is one of the largest yet least regulated markets in the world. Each day dealers reporting to the Federal Reserve conduct an average of over \$40 billion worth of transactions. By having to raise more than \$200 billion in new funds each year and roll over hundreds of billions more, the U.S. Government is a continual participant in the market.

The recent failure or near failure of several government securities dealers has raised concerns in the Domestic Monetary Policy Subcommittee of the House Banking Committee about whether additional regulatory actions are needed in this market characterized by highly leveraged participants. At the present time, relatively informal supervision is provided by the Federal Reserve System as it conducts monetary policy, and acts as Treasury's fiscal agent for marketing the public debt. The 37 dealers reporting to the Federal Reserve, known as primary dealers, regularly report financial data that allow the Fed to maintain a measure of discipline over the markets. The dealers that failed did not report daily financial data to the Federal Reserve. The Subcommittee has asked the U.S. General Accounting Office (GAO) to conduct a detailed examination of how the market operates and to ultimately evaluate the need for more explicit regulatory authority (see appendix I).

## OBJECTIVES AND METHODOLOGY

The objectives of the scoping phase of the assignment were to obtain sufficient information about the Treasury securities markets to be able to plan for the implementation phase and possible follow on assignments. Our efforts centered on (1) describing the characteristics of the over-the-counter Treasury securities market and related futures and forwards markets which are international in scope, (2) assessing risks present in the market and implications of these risks for the government and the public, (3) examining institutions that failed or have encountered difficulty, and (4) describing the regulatory framework in which the markets operate, including the Federal Reserve's present supervisory role.

During scoping, the team completed a number of tasks designed to develop expertise and to identify the issues to be pursued in subsequent assignment phases. The more significant tasks undertaken included:

(1) conducting a literature search regarding federal financial institutions and markets;

(2) reviewing related studies done by GAO, the Federal Reserve, Treasury, Securities and Exchange Commission, Commodity Futures Trading Commission, and various non-governmental bodies;

(3) discussion of the assignment with potential customers in the Congress, regulatory agencies, academia, and financial markets (see appendix II);

(4) interviewing market regulatory agency officials in Washington, New York, and Chicago;

(5) interviewing primary Treasury securities dealers and members of the Public Securities Association (PSA) in New York;

(6) interviewing futures exchange officials at the Chicago Board of Trade and Chicago Mercantile Exchange;

(7) reviewing Federal Reserve Bank of New York reports, procedures, manuals, and related documents;

(8) accessing Data Resources, Inc. (DRI) and Townsend, Greenspan data bases for

-aggregate daily positions of primary securities dealers,

-comparative economic indicators, and

-price and volume data of individual government securities and futures contracts;

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

(10) letting a contract with an outside expert for a risk analysis of the Treasury securities markets.

#### BACKGROUND ABOUT THE TREASURY SECURITIES MARKETS

##### Growth and composition of the Federal debt

The amount of federal debt<sup>1</sup> to be financed, both new debt resulting from government deficits and old debt which must be rolled over, is one of the driving forces in the U.S. Treasury securities market. In 1984 the Treasury will need to raise an average of \$4 billion a day in the credit markets.

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<sup>1</sup>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 sold to the public in the form of savings bonds, foreign series securities and state and local government series securities; and non-marketable issues for government accounts.

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 1). From 1970 through 1974 the annual deficits averaged \$14 billion; from 1975 through 1983 they averaged \$85 billion; from 1984 through 1989 the Congressional Budget Office (CBO) expects them to average \$224 billion. The federal debt has increased similarly (see table 1). From 1970 through 1974 it increased at an average annual rate of \$26 billion; from 1975 through 1983 it rose at an average annual rate of \$105 billion; and from 1983 through 1989 CBO expects it to increase at an average annual rate of \$294 billion. By 1989 CBO expects the federal debt to reach \$3.1 trillion. The CBO estimates assume no changes in current laws governing taxes or entitlement spending.

Net interest payments on the federal debt are expected to increase substantially over the next 6 years also (see table 1). From \$90 billion in 1983 they are anticipated to increase 138 percent to \$214 billion in 1989. The sum of the net interest payments from 1984 through 1989 will account for 55 percent of the increase in the debt.

Most of the federal debt is composed of marketable, interest-bearing Treasury securities held by the public (see table 2). Federal Reserve holdings of this debt are counted as publicly held. In 1983 marketable debt accounted for 74 percent of the federal debt, an increase of 19 percentage points since 1974. Marketable debt in 1983 was composed of 33 percent Treasury bills, 55 percent Treasury notes and 12 percent Treasury bonds. Since 1979 there has been a slight increase in bills at the expense of bonds (see table 3). During this period the average time to maturity of marketable Treasury securities has increased

half a year to 4.1 years in 1983. This increase in average maturity may, however, be misleading since it excludes Federal Reserve holdings. It is this marketable, interest-bearing Treasury debt with which this paper will be mainly concerned.

Table 1

Federal Budget Deficits, Debt and  
Net Interest Payments  
1970 - 1989

<u>End of fiscal year</u>	<u>Budget deficit<sup>a</sup></u>	<u>Federal debt</u> ----- (Billions)-----	<u>Net interest payment<sup>b</sup></u>
1970	\$ 2.8	\$382.6	\$ 15.2
1971	23.0	409.5	14.8
1972	23.4	437.3	15.5
1973	14.9	468.4	17.3
1974	6.1	486.2	21.4
1975	53.2	544.1	23.2
1976	73.7	631.9	26.7
1977	53.6	709.1	29.9
1978	59.2	780.4	35.4
1979	40.2	833.8	42.6
1980	73.8	914.3	52.5
1981	78.9	1,003.9	68.7
1982	127.9	1,147.0	84.7
1983	207.7	1,381.9	90.0
1984 est.	183.0	1,576.0	111.0
1985 est.	191.0	1,822.0	134.0
1986 est.	209.0	2,099.0	150.0
1987 est.	231.0	2,406.0	169.0
1988 est.	254.0	2,757.0	194.0
1989 est.	278.0	3,144.0	214.0

<sup>a</sup>Includes off-budget deficits.

<sup>b</sup>Includes interest collections and interest payments to trust funds as offsets to outlays.

Sources: Economic Report of the President, February 1984; Economic Indicators, various issues; estimates from The Economic and Budget Outlook: An Update, Congressional Budget Office, August 1984.

Table 2

Composition of Federal Debt, 1970-83

<u>End of fiscal year</u>	<u>Federal debt<sup>a</sup></u>	<u>Interest bearing public debt</u>		<u>Marketable debt as percentage of federal debt</u>
		<u>Marketable<sup>b</sup></u>	<u>Non-marketable</u>	
----- (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

<sup>a</sup>Includes very small amounts of non-Treasury securities and non-interest bearing debt not shown separately.

<sup>b</sup>Includes Treasury bills, notes and bonds.

Sources: Federal Reserve Bulletin, various issues.

Table 3

Marketable Treasury Bills, Notes and Bonds

<u>End of fiscal year</u>	<u>Bills</u>	<u>Notes</u>	<u>Bonds</u>	<u>Total</u>	<u>Average</u>
					<u>maturity<sup>a</sup></u>
----- (Billions) -----					
----- Years -----					
1979	\$ 161.4	274.2	71.1	506.7	3.6
1983	340.7	557.3	125.7	1,023.9	4.1
Increase	179.3	283.3	54.6	517.2	0.5
change	111.1%	103.3%	76.8%	102.1%	13.9%

<sup>a</sup>Does not include marketable Treasury securities held by the Federal Reserve.

Sources: Federal Reserve Bulletin and Economic Report of the President, February 1984.

Table 4

Gross Issues of Marketable U.S. Treasury Securities

<u>Fiscal Year</u>	<u>New issues</u>	<u>Refunding of maturing debt</u>	<u>Total issues</u>
	-----Billion-----		
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	202.4	783.2	985.6

Sources: New Money from Marketable Issues, Office of Government Finance and Market Analysis, Treasury Department, February 16, 1984.

Not only must new Treasury securities be issued to finance federal deficits, but debt which is maturing needs to be rolled-over or refunded. Table 4 shows new issues, refundings and total issues of marketable, interest-bearing Treasury securities from 1976 through 1983. Total issues have risen from \$451 billion in 1976 to \$986 billion in 1983, an increase of 118 percent.

In addition, the ownership of the debt has been changing over the last 14 years (see table 5). The primary change in debt ownership has been a shift of about 25 percentage points from federal government and individual accounts to foreign, state and local government and miscellaneous accounts.

The possible economic effects of the growth and composition of the federal debt on interest rates, other spending in the economy, and market risks and stability will be discussed in the section on the environment in which markets operate.

Estimated Percentage Ownership of  
Public Debt Securities 1970 through 1983

<u>End of Fiscal Year</u>	<u>Total</u>	<u>U.S. Gov- ernment Accounts</u>	<u>Federal Reserve</u>	<u>Foreign and Interna- tional</u>	<u>Private Financial Institutions<sup>a</sup></u>	<u>Corporations</u>	<u>Individuals</u>	<u>State and Local Government</u>	<u>Other<sup>b</sup></u>
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	9.6	16.0
1982	100.0	18.9	11.8	12.3	16.7	1.9	10.1	9.8	18.4
1983	100.0	17.4	11.3	11.6	17.8	2.6	9.4	29.9	

Table 5.

<sup>a</sup>Includes commercial banks, mutual savings banks and insurance companies.

<sup>b</sup>Includes savings and loan associations, nonprofit institutions, credit unions, mutual savings banks, corporate pension trust funds, dealers and brokers, certain U.S. government deposit accounts, and U.S. government sponsored agencies.

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

How marketable Treasury debt is sold

To sell marketable public debt, Federal Reserve banks, as fiscal agents for the Treasury, sell the securities to the public through a competitive auction process. The Federal Reserve banks remit the proceeds to the Treasury by crediting Treasury accounts held with them, and maintain Treasury bill accounts in book-entry form for their sale, transfer and redemption.<sup>2</sup> Treasury notes and bonds are also in book entry form. However, a small percentage of notes and bonds, like commercial stocks and bonds, are printed on an engraved certificate. Prior to 1983 they were issued both in bearer and registered form. As of 1983, though, they are only issued in registered form. As bearer instruments, Treasury notes and bonds have no name recorded. They are treated as cash and are payable to anyone who has possession of them. Registered Treasury notes and bonds, on the other hand, are registered as to principal and interest and bear the owner's name which is recorded in the records of the Treasury Department.

In marketing the Federal debt, the Treasury has adopted an approach to debt management known as "regularization." Under this approach, Treasury security offerings are regularly scheduled and announced on a financing calendar, so as to reduce doubt and uncertainty in the financial markets. A major objective of this regularization policy

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<sup>2</sup>Under the book-entry form of ownership, the investor does not receive a physical certificate as evidence of purchase. Rather, ownership is recorded in computerized book-entry accounts at Federal Reserve Banks and at the Treasury, and investors are provided receipts as evidence of their purchases.

is to facilitate sales of long term debt so as to extend the average maturity of the public debt. Regularization also allows private debt issuers the opportunity to better plan their own financing schedules.

As noted above, Treasury securities are issued in the form of bills, notes and bonds. Three and 6-month Treasury bills are offered to the public each week through an auction, 1-year bills are auctioned every 4 weeks, all in minimum denominations of \$10,000. Treasury bills are sold at a discount from face value with price being determined by competitive bids or tenders made at each auction.<sup>3</sup> Upon maturity, bills are then redeemed for their full face value. Bids may be made on a competitive or noncompetitive basis. Awards for noncompetitive bids in amounts up to \$500,000 are made at the average issuance price computed on the basis of the competitive bids accepted.

Treasury notes and bonds, which pay interest semi-annually and mature in 2 to 30 years, are sold through an auction process similar to that for Treasury bills, except that bids are made in term of the "yield-to-maturity" instead of price. The minimum denomination for notes and bonds is usually \$1,000, except for notes with maturities of 4 years or less which are sold in \$5,000 denominations.

Notes and bonds are sold on a regular schedule, with particulars about each issue announced in advance to the public. As with Treasury bills, noncompetitive bids may be made for notes and bonds which are awarded in amounts of up to \$1 million, at the average yield for accepted competitive bids.

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<sup>3</sup>If an investor's bid is accepted, he pays the price bid. Thus, not everyone pays the same price.

The Treasury does not purchase advertising for its marketable securities, nor does it pay commissions to dealers who make markets in Treasury securities. Dealer profits and losses on transactions are determined by the difference between the price the dealer pays to the Treasury and the price the dealer receives from the customer. The dealer's capital is at risk in each transaction, since the dealership is trading for its own account.

Description of the U.S. government securities dealer market

In financing the Federal debt, the Treasury looks largely to a group of securities dealers known as primary dealers. Presently numbering thirty-seven, primary dealers purchase a large portion (about 55 percent) of the Treasury securities sold at auction and make an active secondary market for U.S. Government and Federal agency securities (see appendix III for a list of the primary dealers and brokers). They are designated primary dealers by virtue of their reporting relationship with the Federal Reserve. The Fed maintains a list of dealers who voluntarily report on their daily market activity and submit to surveillance of their activities by the Federal Reserve Bank of New York. Dealers earn this designation after a period of observation of their financial strength, market making capacity, experience, reputation, and proven ability to serve the market. With this designation comes a number of advantages including prestige, market recognition, and the possibility of daily contact with the Fed's open market trading desk since the Fed selects its trading partners for the conduct of monetary policy from the list of primary dealers.

The primary dealers make markets by buying and selling securities for their own account and arranging transactions with their customers and other dealers. Dealers' customers are generally financial institutions including banks, insurance companies, pension funds, and other large investors such as corporations and state and local governments. The marketplace is decentralized, with most trading transacted over the telephone. As an indication of the market's size, primary dealers transacted an average of more than \$40 billion per day in 1983, up from about \$2 billion per day in 1965, as illustrated in the table below.

Table 6

Transactions in U.S. Government Securities  
by Dealers Reporting to the Federal Reserve Bank  
of New York

<u>Year</u>	<u>Daily average transactions (in \$ million)</u>	<u>By Customer</u>	
		<u>Inter-dealer and broker trading (percent)</u>	<u>Trading for commercial banks and other (percent)</u>
1965	1,827	31.9	68.1
1970	2,513	42.7	57.3
1975	6,027	43.7	56.3
1980	18,329	49.6	50.4
1981	24,728	54.2	48.8
1982	32,271	54.0	47.5
1983	42,135	55.3	44.7

Source: Federal Reserve Bulletin.

Besides the thirty-seven primary dealers, there is another tier of dealers sometimes referred to as secondary dealers. Although the universe of nonprimary dealers is unknown, the Public Securities Association (PSA) estimates that its approximately 300 members (including the 37 primary dealers) represent 95 percent of all government

securities dealers.<sup>4</sup> Trading volume on the part of nonprimary dealers is estimated to be relatively low--one Fed official put it at roughly 25 percent of total market activity--with primary dealers accounting for the other 75 percent. This figure is very rough since it includes an estimate of activity on the part of regional banks which play a significant role in marketing Treasury securities, but do not report their trading volume to the Federal Reserve. Primary dealers may be categorized in several different ways, but for purposes of this paper we have categorized them as follows:

- Bank Dealers (14) - These are dealers which operate as departments of commercial banks. In addition to being subject to the Fed's market surveillance, bank dealers are monitored by the bank regulators as part of their supervision activities.
- Registered Dealers (14) - These are dealers registered with the Securities and Exchange Commission (SEC). Registered dealers are multi-operation firms which deal in government securities as well as in other fixed-income and equity issues and therefore, are subject to full SEC regulation.
- Unregistered Dealers (9) - These dealers include four specialist firms and five subsidiaries of larger multi-operation firms such as Merrill Lynch Government Securities, Inc. Unregistered dealers trade only in U.S. Government and other securities exempt from SEC regulation and thus, are free from any formal federal regulation.

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<sup>4</sup>PSA's membership includes some government securities brokers and also dealers who trade only municipal and state and local government securities. However, at the time of our survey, we could not determine their number.

Dealers often rely on brokers to facilitate securities trades. There are many types of brokers including "brokers' brokers" which do business only between primary dealers, and other brokers which specialize in certain financial instruments such as federal funds, repurchase agreements, GNMA's, etc. Brokers do not make markets or take positions in securities, but rather merely match buyers and sellers on a commission basis. Brokers' brokers display bid and offer prices via closed circuit television screens located in the primary dealers' trading rooms, thereby providing rapid access by dealers, and anonymity in their trades.

In addition to servicing customers, dealers employ strategies in taking positions in securities, futures, forwards, and options, with the goal of profiting on price moves in the markets. They also attempt to profit on arbitrage operations, speculating on changes in price differentials between the various maturity categories and markets. Dealer positions are highly leveraged, to the extent that capital<sup>5</sup> of primary dealers amounts on average to 1.5 percent or 2 percent of the value of securities they hold. To finance these positions, dealers once relied primarily on collateralized loans from commercial banks. In recent years, however, they have mainly financed their positions through repurchase agreements with banks, federally sponsored agencies, state and local governments, and other institutional investors.

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<sup>5</sup>This sentence considers capital to be the net worth of a firm on a book value basis when the value of liabilities recognized on the firm's statement of condition is subtracted from the value of assets so recognized. The concept of capital that is most appropriate to use in evaluating the financial capability of market participants is not an easy one to define.

In a repurchase agreement, or "repo", these investors advance dealers funds by temporarily purchasing government securities. At the same time, the dealer agrees to buy back the securities at a specified future date and price which includes interest. Repurchase agreements have become a widely-accepted way of investing excess funds because they are high-yielding money market instruments which can be structured to meet the investors' exact maturity needs.

The Federal Reserve has in the past provided temporary assistance and financing to primary dealers during severe market disruptions and credit crunches through temporarily loaning the dealers securities, and/or entering repurchase agreements with them. While these tools could be used by the Federal Reserve in future exigencies, according to a Fed official, the use of repurchase agreements in recent years has been confined to reserve adjustments needed to meet the Fed's monetary policy objectives. Prior to a 1979 decision by the Federal Reserve to key open market operations to achieving specific targets for bank reserves, the Fed provided financing to dealers from time to time in order to avert large fluctuations in interest rates. However, since the 1979 change in Fed policy, interest rates have been allowed to move more freely in response to market conditions.

#### Description of derivative markets

Over the years, a number of trading vehicles and "derivative markets" have developed, enabling dealers and other market participants to either speculate on or hedge the increasing market risks associated with holding government securities. The establishment and market acceptance of when-issued trading, and financial futures, options, and forwards have played an important role in the market's

ability to function in an era of increasing government deficits and high and volatile interest rates. The integration and interplay of these derivative markets with the cash market for Treasury securities has developed to the point that any disruptions to the smooth functioning of the derivative markets would no doubt ripple through the cash markets. It has been argued, however, that futures markets as such disrupt cash markets. This view seems to be in the minority. Brief descriptions of these derivative markets follow.

#### When-issued

The when-issued market is a term used to describe secondary market trading in new Treasury security issues during the time between announcement of the issuance by the Treasury and final settlement after auction. During this period of about 2 weeks, Treasury securities are traded between dealers and customers on a when-issued basis. The Federal Reserve has viewed the when-issued market as a potential problem area because of the absence of safeguards against adopting excessively risky positions, such as margin requirements, and since April 1984 has requested that primary dealers report daily on all when-issued transactions of \$5 million or more.

#### Financial futures

Markets for financial futures are centered in Chicago and represent an outgrowth of traditional futures markets in agricultural commodities. Regulated by the Commodity Futures Trading Commission (CFTC), financial futures contracts have developed since 1975 for Treasury bills and notes, long-term Treasury bonds, and federally guaranteed securities (GNMAs), as well as for domestic certificates of deposit (CDs), Eurodollar CDs and selected foreign

currencies. The bulk of financial futures are traded on the Chicago Board of Trade and the International Money Market of the Chicago Mercantile Exchange. The large scale use of financial futures by securities dealers, banks, financial institutions, and others has added liquidity to the cash markets and allowed market participants to hedge risks inherent in the highly volatile interest rate environment of recent years.

In financial futures trading hedgers and speculators contract to buy or sell large dollar value quantities of financial instruments for delivery at a specified future date. Thus, there are always two sides to a futures contract, a seller and a buyer. With a change in price of the futures contract, what the seller gains (loses), the buyer loses (gains). Futures contracts are usually settled by offsetting trades, but the possibility of physical delivery causes a convergence of futures prices with cash market prices at the time of contract expiration. The futures exchanges act as self-regulatory organizations (SROs) which monitor market activity, establish contract specifications, margin requirements, etc. Exchange affiliated clearing houses clear all trades and mark traders' open contract positions to market on a daily basis. Required margin deposits are also reestablished daily.

#### Options

Interest rate options began trading in 1982 and in October of that year the CFTC permitted futures exchanges to offer "options" on futures contracts. Financial options can add to market participants' hedging versatility since they provide the purchaser with a right, but not the obligation, to buy or sell securities or futures contracts for securities at a given price for a set period of time.

However, dealers who "write" or sell options can assume significant risk when prices of the underlying securities move adversely. Presently, options on futures contracts for securities are traded for both Treasury notes and Treasury bonds, with settlement made by offsetting trades as opposed to physical delivery of securities.

#### Forwards

Forward trading is essentially the same as futures trading, but on a private, negotiated basis rather than through standard contracts traded on an exchange. According to Federal Reserve officials, most forward trading is transacted between primary dealers and their customers. 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.

#### The market environment for U.S. government securities

The market for government securities is a large part of the overall domestic market for debt, and this part is getting larger. This section will first present a macroeconomic view of the growing federal debt and then will focus specifically on how this affects the market mechanism that channels this debt to the private sector, the brokers and dealers.

#### Macroeconomic effects of the debt

With federal deficits expected to remain near \$200 billion in the next few years, publicly held Treasury debt will be increasing at about 13-15 percent a year. Nominal GNP, however, is expected to increase at only an

8-9 percent rate. This will result in the debt to GNP ratio rising to about 45 percent by 1989 (see table 7).<sup>6</sup>

Table 7

Publicly Held Treasury Debt as a Percentage of GNP

<u>Year</u>	<u>Percentage</u>
1970	29.3
1971	29.4
1972	28.0
1973	25.6
1974	24.5
1975	28.2
1976	29.5
1977	29.4
1978	28.6
1979	27.2
1980	28.0
1981	27.9
1982	32.2
1983	35.4
1984 <sup>a</sup>	36.4
1985 <sup>a</sup>	38.1
1986 <sup>a</sup>	40.2
1987 <sup>a</sup>	42.1
1988 <sup>a</sup>	44.1
1989 <sup>a</sup>	46.0

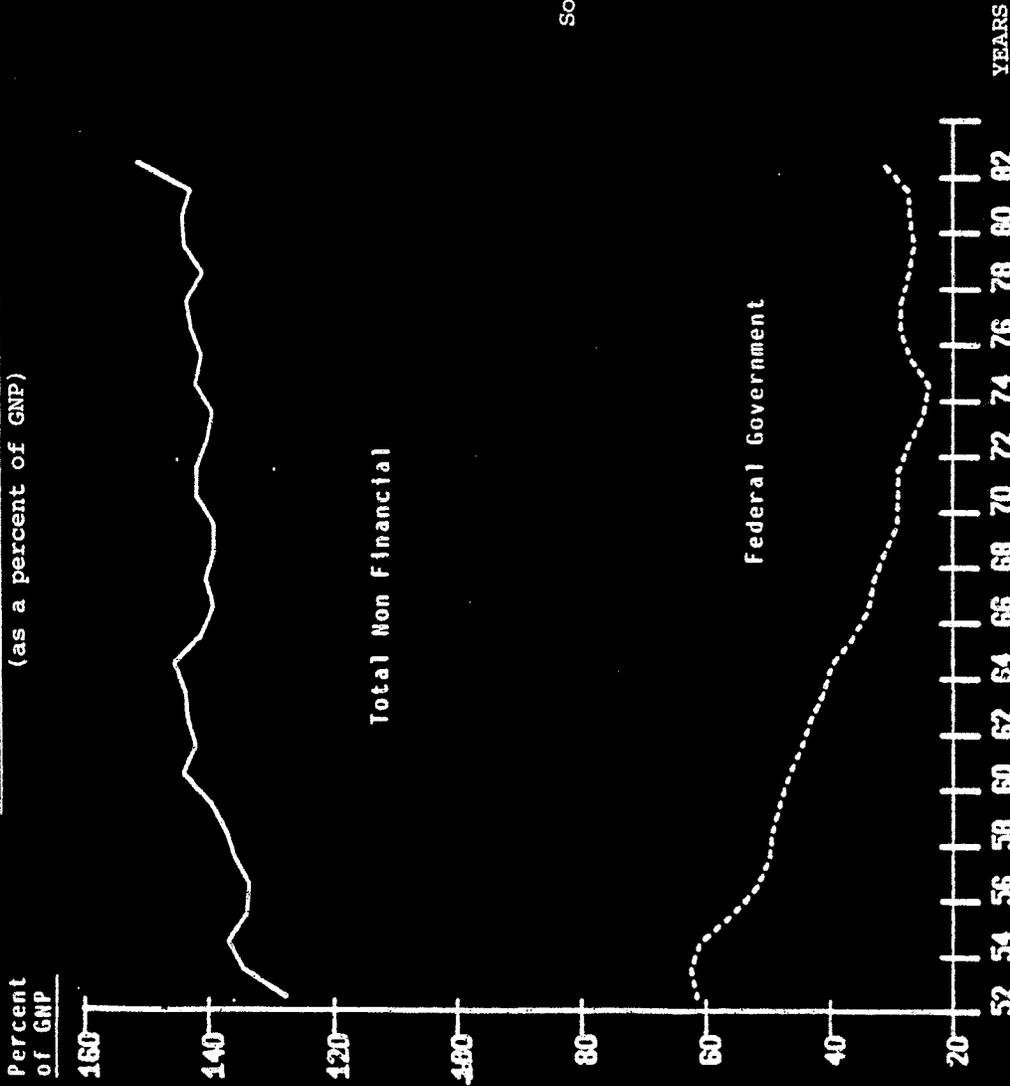
<sup>a</sup>CBO estimate.

Should there be cause for concern? Looking only at the historical series of debt as a percentage of GNP might be misleading since it had been declining from about 60 percent in 1952 to about 25 percent in 1974 and has now risen to only 35 percent (see table 7 and figure 1). However, the previous high figures were a result of wartime debt and, as figure 2 shows, the government even occasionally ran a surplus in the years following the war. During the 1960s the U.S. Treasury usually absorbed less than 12 percent of the total funds borrowed by the domestic nonfinancial sector. Since 1980, however, Treasury's share has increased dramatically to between 20 and 40 percent (see

<sup>6</sup>Estimates from The Economic and Budget Outlook: An Update, Congressional Budget Office, August 1984.

Figure 1

OUTSTANDING DEBT OF U.S. NONFINANCIAL BORROWERS  
(as a percent of GNP)



Note: Nonfinancial debt excludes debt issued by banks, insurance companies, and financial subsidiaries of non-financial organizations. This debt is excluded to avoid double counting of debts incurred.

Federal Government debt is publicly held Treasury issues. Agency issues are excluded.

Source: U.S. flow of funds, Data Resources, Inc. data base

figure 2). Treasury's absorption of an increasing portion of total borrowing by the domestic nonfinancial sector raises concern about the ability of the economy to absorb this rapidly increasing debt. This concern centers on "crowding out"<sup>7</sup> and on expectations of and uncertainty about inflation, interest rates, and fiscal and monetary policy.

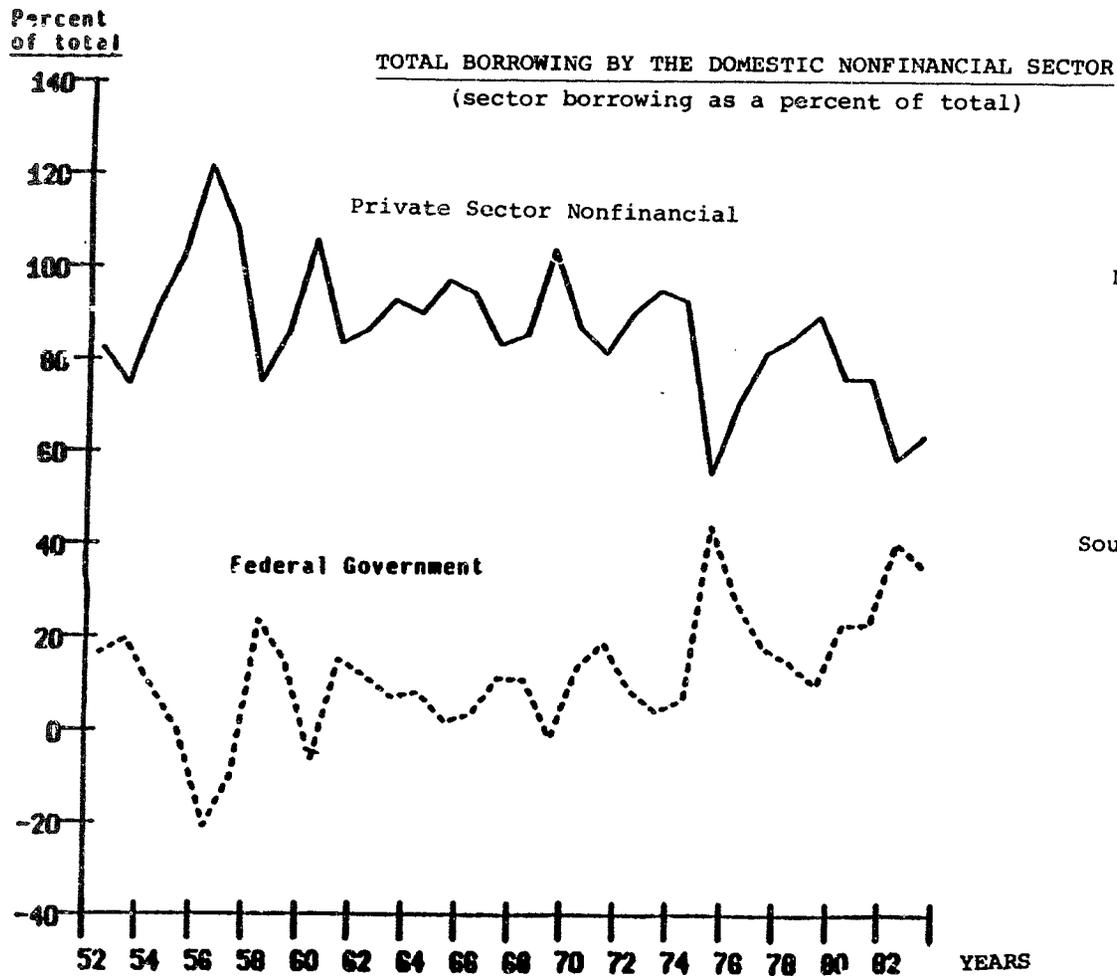
#### Crowding out

If the federal government increases its demand for funds, the Treasury can guarantee that all its debt will be bought because it is willing to accept any yield established in an auction. This has the effect of increasing interest rates not only for Treasury securities but also for other borrowing that competes with Treasury issues for investors' funds. These higher rates in turn tend to crowd out other borrowers--state and local governments, consumers, and businesses--thereby reducing the spending of these sectors.<sup>8</sup> Concern with crowding out often focuses on the extent to which private sector investment in plants and equipment is crowded out, which in turn may reduce the growth rate of potential GNP.<sup>9</sup>

<sup>7</sup>Crowding out: The reduction of spending by state and local government and the private sector due to an increase in interest rates resulting from growth of the federal debt.

<sup>8</sup>The extent of crowding out will also depend on the interest elasticity of the supply of savings. Saving is elastic with respect to a change in interest rates if the percentage change in savings is greater than the percentage change in interest rates. So far the empirical evidence weighs in on the side of inelastic savings. However the historical experience has been under Regulation Q interest ceilings. The recent lifting of these ceilings allows greater movement in interest rates so that the economy may move to a different part of the savings function.

<sup>9</sup>The level of private sector spending for plants and equipment is just one of the factors that affect the growth rate of potential GNP. Other factors include such things as expenditures in both the public and private sectors for research and development, education and training, and infrastructure (roads, airports, etc).



**Figure 2**

Note: Federal Government debt is publicly held Treasury issues. Agency issues are excluded.

Private funds raised exclude equities.

Source: U.S. flow of funds  
Data Resources Inc. data base

### Expectations

If current inflation of 4-5 percent is subtracted from recent Treasury bond yields of 12.5 percent, this leaves a high real rate of 7.5 to 8.5 percent, which is out of line with historical experience. One possible explanation for these high real rates is the projected heavy credit demand by the Treasury in the medium term and expectations of higher future inflation. Financial market participants may believe (either implicitly or explicitly) that a situation in which government debt is growing more rapidly than GNP cannot continue indefinitely and may have little confidence that the situation will be corrected in a way that will avoid future inflation.

Another factor involved in the effect of the federal debt on the economy is its source of financing. In this recovery period, net foreign capital inflows of unprecedented size have financed a large part of the Government's credit needs (see figure 3). These have risen from \$11 billion in 1982 to \$41 billion in 1983 on a balance-of-payments accounting basis, and are expected to reach \$80 billion in 1984.<sup>10</sup>

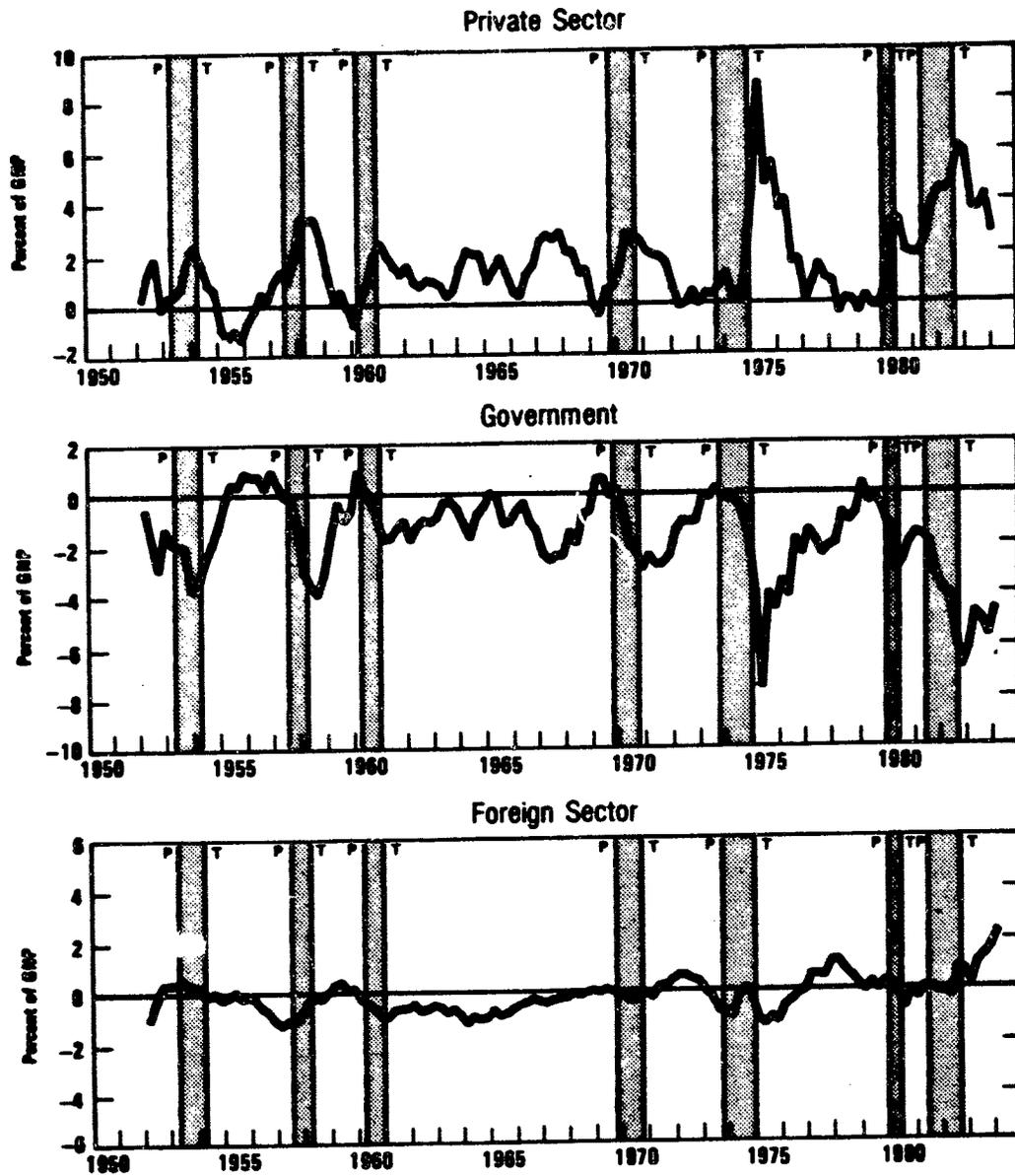
The flow of foreign capital is an important factor in the outlook for U.S. interest rates. Foreign investors may become more hesitant in accumulating additional dollar assets as an increasing portion of their portfolio. Particularly if the exchange value of the dollar declines, foreign economies improve, and (or) foreign interest rates

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<sup>10</sup>1984 estimate and graph from The Economic and Budget Outlook: An Update, CBO, August 1984.

Figure 3

## Net Credit Supplies by Sector



SOURCE: Federal Reserve Board; U.S. Department of Commerce.

NOTE: P and T lines indicate business cycle peak and trough dates.

increase, then foreign investors may become more hesitant to continue accumulating dollar assets without a rise in their yields.<sup>11</sup>

Another factor with a large influence on the way the federal debt affects the economy is monetary policy. The Federal Reserve essentially determines the growth rate of the money supply by the amount of Treasury securities it purchases on the open market.<sup>12</sup> Expectations of the growth rate of the money supply, in turn, influence expectations of the inflation rate and the rate of growth in real GNP. If, in conducting monetary policy, the Federal Reserve purchases too large a portion of the debt, this will increase the growth rate of the money supply above that consistent with economic growth at low rates of inflation. On the other hand, if the money supply grows too slowly, then the supply of credit may increase too slowly, threatening the growth of real GNP.

In October 1979 the Federal Reserve adopted an operating procedure which placed more emphasis on controlling the money supply and less emphasis on controlling interest rates in an attempt to better control inflation. A consequence of the operating procedure selected was that interest rates became more volatile. In the fall of 1982 the

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<sup>11</sup>One action that has been taken to make U.S Government debt more attractive to foreign holders is the recent repeal of the 30 percent withholding tax on interest payments to foreign holders.

<sup>12</sup>The purchase of Treasury securities by the Federal Reserve increases bank reserves above the amount required to be held against current deposits. With these "excess" reserves the banking system is able to increase the money supply by a multiple of the excess reserves. The value of the multiplier depends on reserve requirements and other factors.

Federal Reserve changed the way it tried to achieve its money growth targets and interest rate volatility decreased (see figures 4 and 5<sup>13</sup>).<sup>14</sup>

<sup>13</sup>The data in figures 4 and 5 are monthly averages of the moving 5-day variance of the percentage change in price of two individual Treasury securities (figure 4) or the percentage change in the yield of two constant maturity bond indexes (figure 5). The formula is as follows:

$$\text{VAR}_m = \sum_{j=1}^m \left\{ \frac{\sum_{t=j}^{j+4} \left( \frac{R_t - R_{t-1}}{R_{t-1}} \times 100\% \right)^2 - \frac{\left( \sum_{t=j}^{j+4} \left( \frac{R_t - R_{t-1}}{R_{t-1}} \times 100\% \right) \right)^2}{5}}{5} \right\}$$

m

Where

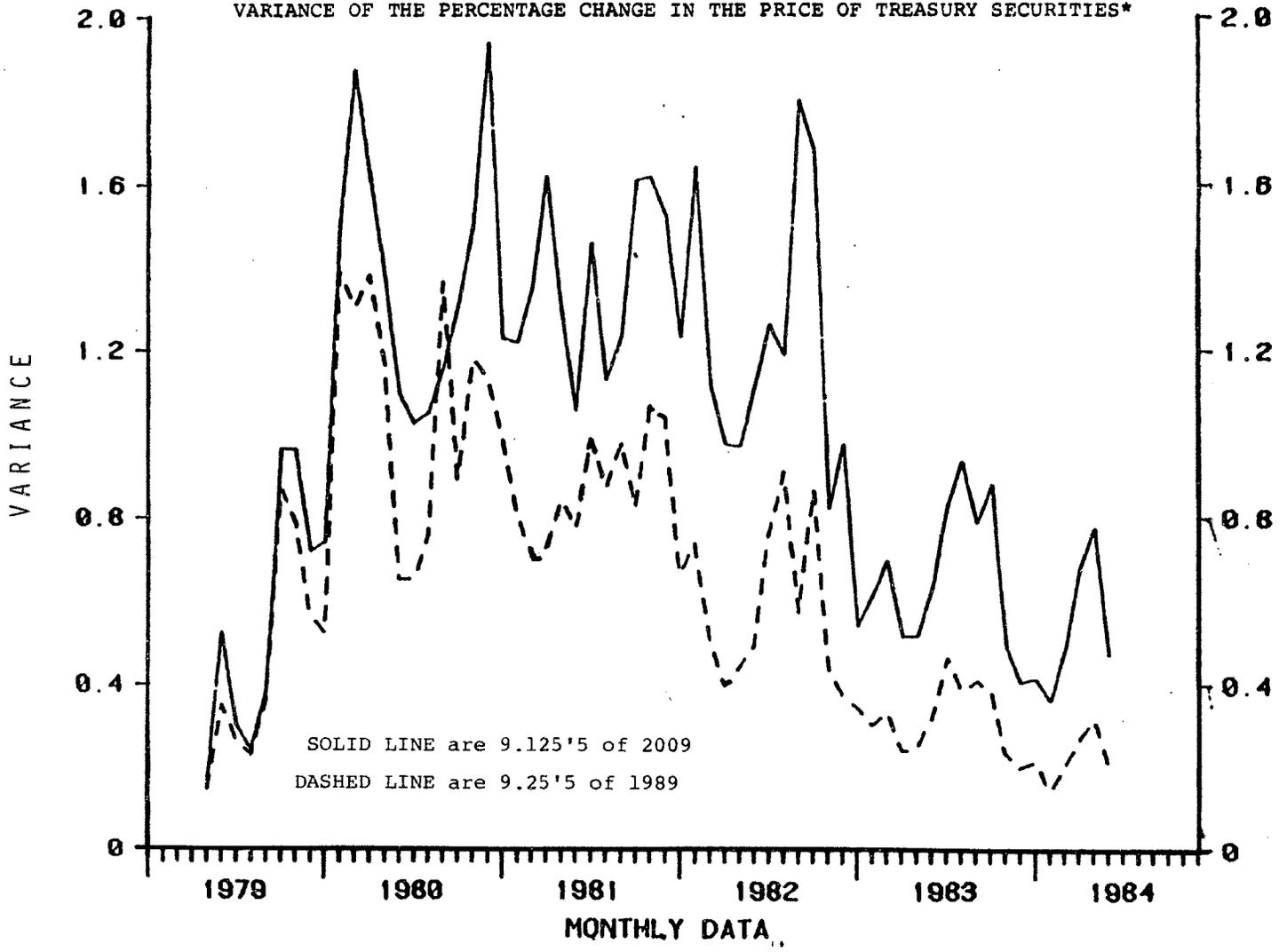
VAR = Variance

m = Number of days in the month when the market is open.

R = Yield or price, as appropriate.

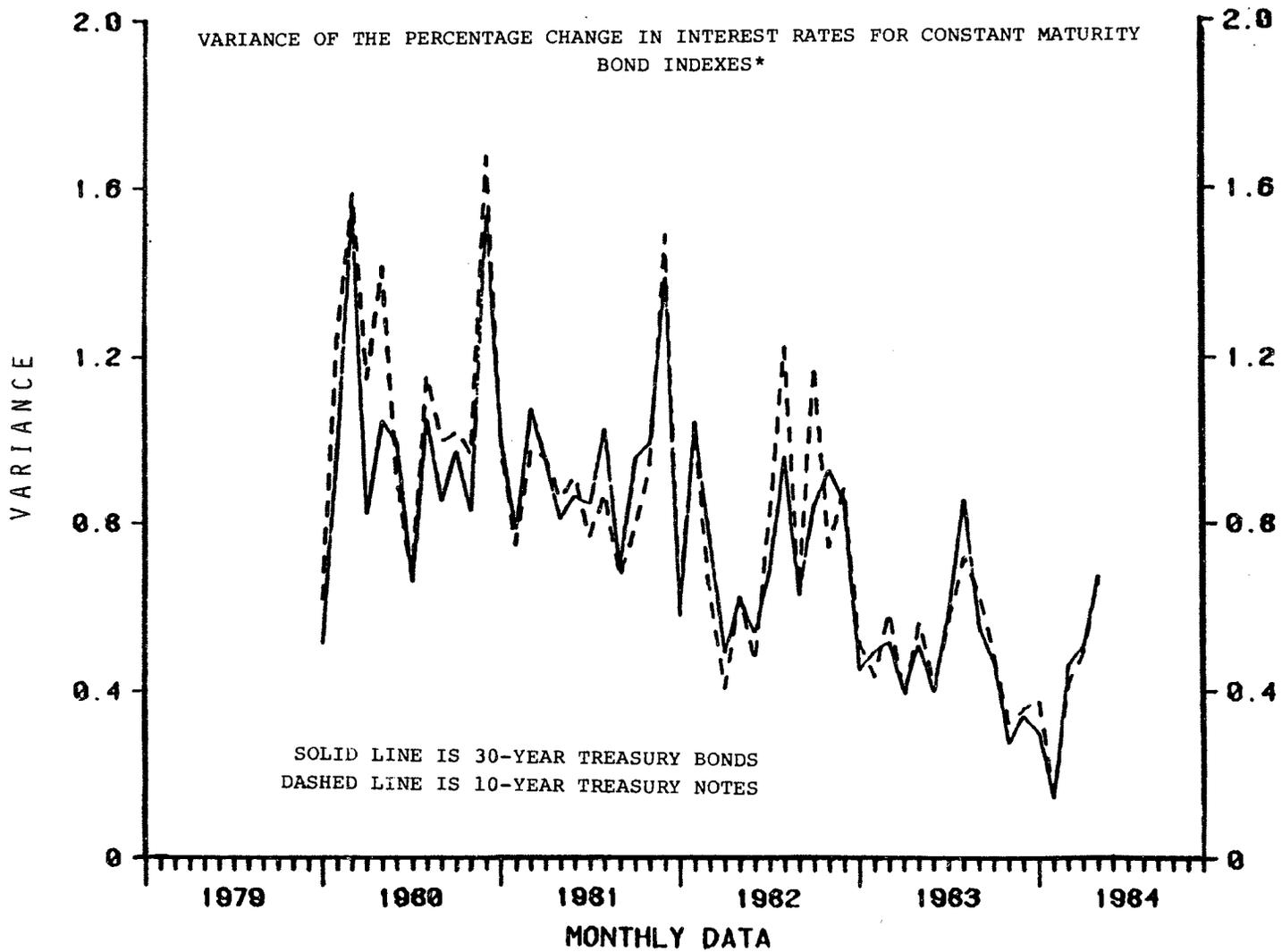
<sup>14</sup>Increased interest rate volatility during the October 1979 to fall 1982 period was not entirely attributable to the change in the Federal Reserve's operating procedure. Other factors at work were, among other things, the lifting of credit controls, and sharp swings in real economic activity.

VARIANCE OF THE PERCENTAGE CHANGE IN THE PRICE OF TREASURY SECURITIES\*



\* Data are monthly averages of 5-day moving variances - see footnote 14 attached.  
SOURCE: ADP data base.

Figure 4.



\* Data are monthly averages of 5-day moving variances -  
see footnote 14 attached.  
SOURCE: ADP data base.

Figure 5.

The increase in interest rate volatility that occurred after October 1979 is a factor that may help to explain why interest rates went as high as they did during this period. Interest rate volatility increases the riskiness of debt instruments because it makes it more difficult for the holders of such instruments to anticipate their future value. To compensate investors for this element of risk, borrowers have to pay a higher rate of interest to obtain funds.

The recent decrease in interest rate volatility after 1982 would have been expected to reduce the risk component of interest rates associated with interest rate volatility. However, this would be true only if investors are convinced that this change is permanent. The situation may be similar to the one described above in which investor expectations regarding future inflation and government borrowing can help explain why interest rates remained stubbornly high in mid 1984 given the rate of inflation.<sup>15</sup>

#### The market mechanism and related topics

A large part of the government's debt is brought to the market through primary dealers, who absorb about 55 percent of the securities auctioned by the Treasury. These securities are then resold to their customers. If interest rates rise unexpectedly from the time of purchase to the time of sale to customers (when interest rates rise, securities prices fall), these dealers could suffer large losses

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<sup>15</sup>However, long term bond rates had moved down during the third quarter of 1984 from their high in mid '84.

unless their positions are hedged. If such losses exceed their capitalization, then bankruptcy is possible. Bankruptcy of a dealer has repercussions not only on the individual dealer's stockholders and creditors, but on the stability of the market as a whole.

#### Scope of the Treasury debt market

While increasing public debt may have a detrimental "crowding out" effect on investment and other spending by the private sector and state and local governments, the increased breadth and depth of the market in Treasury securities has had some beneficial effects for investors. Transactions in large amounts of government securities can occur without large price changes, and buyers and sellers are virtually assured of a market at any time. This has increased liquidity, and lowered this element of risk in the Treasury market.

#### Risks faced by dealers

Government securities dealers are faced with both market risk and credit risk. Market risk is equally applicable to all debt instruments, since it involves the risk that interest rates will change unexpectedly, thus causing the price of the security to change in the direction opposite to the change in interest rates. Credit risk is usually defined as the risk of default by a specific borrower. However, credit risk can also apply generally to the "other" party in a financial transaction, to both lenders and borrowers.

Dealers make profits (and conversely incur losses) by assuming market risk. This is done by buying, selling, and holding government and other securities of various maturities and yields. These transactions are undertaken based on expected changes in the price of a given security or in the relative prices of different securities.

The yield curve plots yield versus current term to maturity of securities in the same risk class (see figure 6). Normally, the yield curve has a positive slope--the longer the current term to maturity, the higher the yield. This is so because the market risk is larger the longer is the current term to maturity. Because of this, investors are said to prefer to lend short and must be offered a "liquidity premium" to lend long. The yield curve can change by shifting up or down, or by rotating and changing its slope. These changes are due to alterations in expectations of inflation and real interest rates and in perceptions of risk.<sup>16</sup> Indeed, liquidity premiums are not necessarily constant over time but change with market perceptions of risk in specific maturity categories and over the course of the business cycle. The yield curve tends to be more steeply sloped at cyclical troughs due to low current inflation, higher expected future inflation, and higher liquidity premiums; it tends to be less steeply sloped or even inverted at cyclical peaks due to high current inflation, lower expected future inflation, and lower liquidity premiums.<sup>17</sup> The yield curve for government

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<sup>16</sup>Real rate of interest: The nominal annual rate received or expected over a time interval, less the inflation rate experienced or expected over the same interval.

<sup>17</sup>An inverted yield curve is negatively sloped.

# MARKET YIELDS ON GOVERNMENTS

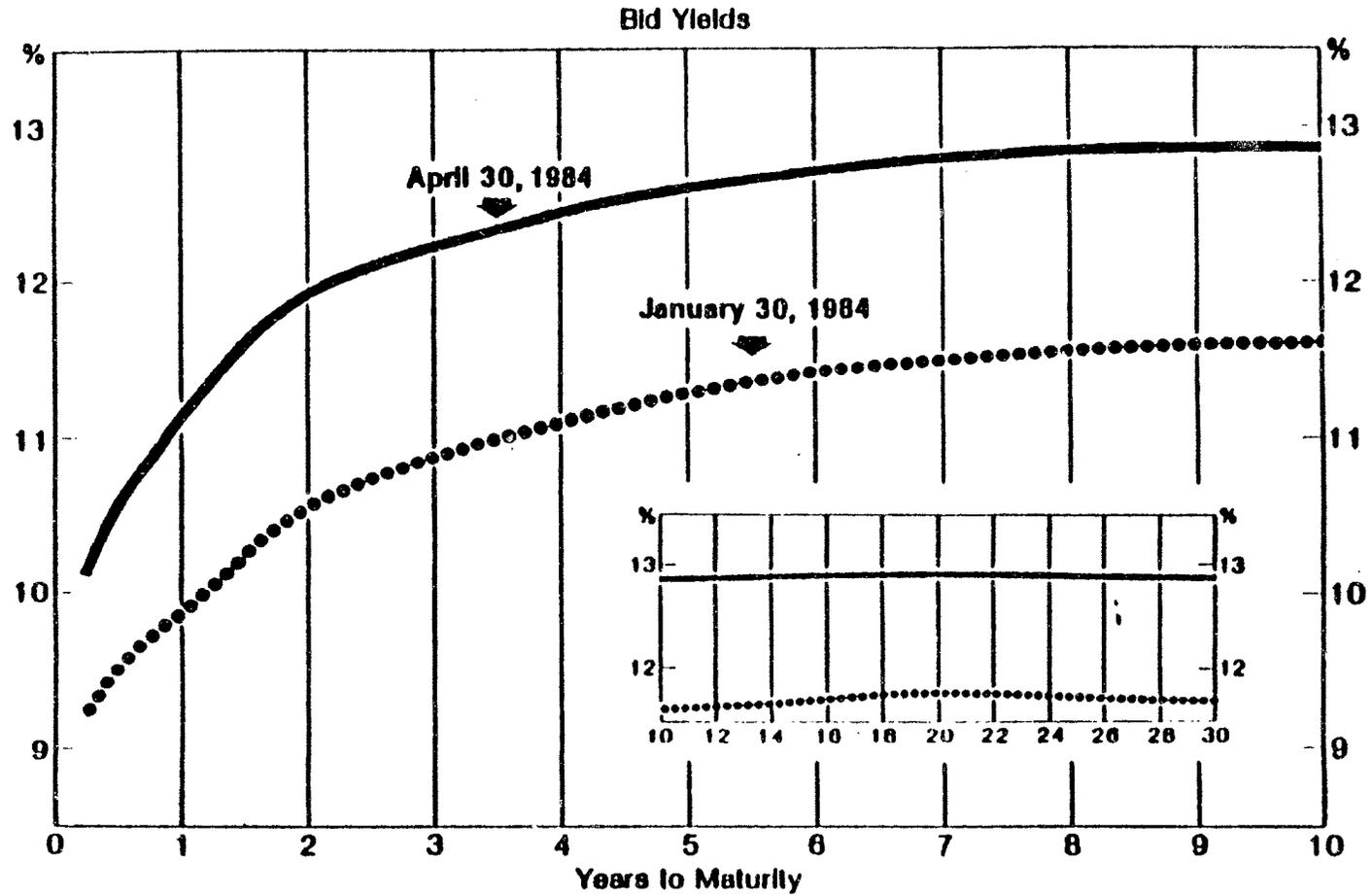


Figure 6.

securities was inverted for most of the period from 1979 through 1981. Figure 7 shows examples of extremely positive and extremely negative government securities yield curves.

Risk premiums will rise in response to increased interest rate volatility. However, the securities market will also be affected in another way. Higher interest rate volatility increases the potential both for large profits and for large losses.

The high and volatile interest rate environment of recent years has resulted in important changes in the orientation of market participants. Holders of Treasury securities and other fixed rate obligations suffered large capital losses when interest rates rose sharply. Investors are understandably worried about getting caught like this again. In addition, by decreasing the duration<sup>18</sup> of outstanding debt with fixed coupons, higher interest rates (along with increased interest rate volatility) have shortened the focus of the marketplace. Edward Yardeni of Prudential-Bache Securities has vividly described the effect of the changed bond market as the "Bondville Horror:"

Nostalgia time: remember the bond investor? The species is no longer endangered, it's extinct. The bond investor bought 30-year bonds for 30 years. Then came the bond manager. His clients reviewed his performance at the end of each quarter. So he bought 30-year bonds for 30 days. Then came the bond trader. When his technical indicators showed that the market was oversold, he would buy 30-year bonds for 30 hours. Now even the traders are gone. . . There are few players left in the bond market. Yes, there are

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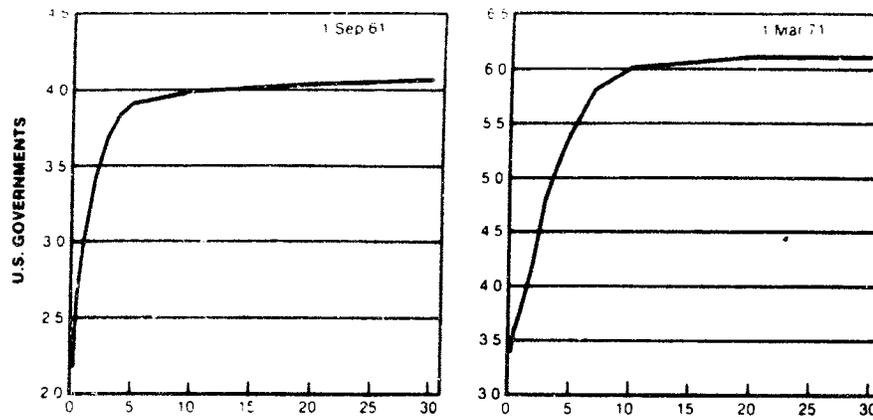
<sup>18</sup>Duration is the average time from now that present value is received. More technically it is the weighted average term to maturity, where the weights are stated in present value terms. The time in the future a cash flow is received is weighted by the proportion that the present value of the cash flow contributes to the total present value or price of the bond.

Figure 7

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 Yield Curves: Most Positive (January 1960-November 1981)
 

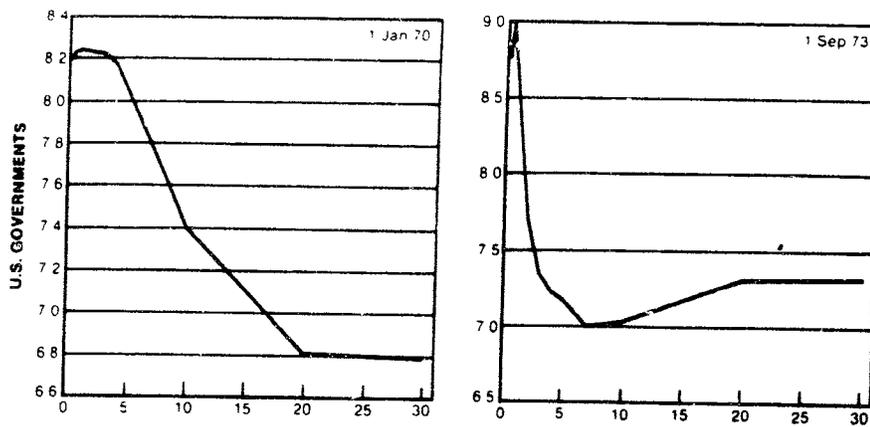
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 Yield Curves: Most Negative or Least Positive (January 1960-November 1981)
 

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Source: Salomon Brothers, Inc.

Note: Vertical is interest rate in %. Horizontal is years to maturity.

still a few traders who'll buy a 30-year bond for 30 minutes. But most of the players aren't in the market by choice. They are the portfolio managers whose bond positions are under water. A few months ago, they would wait for a one-, two-, or three-point correction rally to shorten their maturities. Now, they'll sell if the market rallies a quarter point.<sup>19</sup>

Dealers can decrease their market risk by hedging in the futures, forward, and options markets, and by controlling the proportion of a securities portfolio invested in various maturity ranges. They can also counter market risk by increasing the amount of liquid capital available. Credit risk can be decreased by knowing customers and counterparties to financial transactions. Assuming risks, however, is a way of making profits. Even with some risk reduction, the potential for large losses may still remain.

#### Regulation of the U.S. Government securities market

Several regulatory bodies play a role in overseeing the government securities market and related derivative markets. Besides the Federal Reserve and Treasury, these include other bank regulators, the Securities and Exchange Commission (SEC), and the Commodity Futures Trading Commission (CFTC).

Treasury determines the timing and maturity of security offerings. As with all Federal Reserve fiscal agent functions, the activities of the Federal Reserve concerned with marketing the public debt are carried out under the general supervision of the Treasury. The Federal Reserve has historically maintained an informal oversight role in the government securities market. The Fed's role in the

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<sup>19</sup>"Economics: Money and Business," May 9, 1984, published by Prudential-Bache Securities.

past has largely been limited to concerns over the stability of those primary dealers with which the Fed directly conducts business. Recently, however, after the failures of several large nonprimary dealer firms seemed to create more general market disruption and cast doubts on the market's self regulatory mechanism, the Fed increased its market surveillance efforts. These included, among other actions, the establishment of a dealer surveillance unit, collection of additional data from primary and nonprimary dealers, and promulgation of voluntary capital adequacy standards.

The SEC plays a role in the government securities market through its regulatory authority over registered brokers. Those brokers and dealers which conduct business in any non-exempt securities (U.S. Government securities are exempted by statute) are subject to full SEC regulation. In addition, the SEC has the power to investigate and prosecute issues of fraud in all securities markets, including U.S. Government markets.

The CFTC has regulatory authority over the Treasury securities futures markets. The principal method of regulation is the licensing of commodity exchanges through a designation process. The CFTC designates as contract markets only those exchanges which demonstrate their ability to prevent market manipulation and to perform other self-regulatory duties.

#### CURRENT ISSUES

The market for Treasury securities may be characterized as a conduit or pipeline moving money from investors to the Government to finance its debt. As noted in this paper, there are questions about the capacity of the market

to continue to finance larger and larger debt. In the implementation phase of this assignment and in immediate follow-on assignments, we will assume the Treasury can finance its debt burden by outbidding everyone else in the credit market. We will therefore look at the capacity of the pipeline to serve the needs of the Treasury and investing public by moving financial resources effectively, efficiently, and without undue risk to the stability of the financial system. The current system of primary dealers and other market participants will be taken as a given. We will be involved initially only in describing how the present system operates.

This section of the paper highlights what we believe to be major issues in the Treasury securities market which supplement the specific questions the Subcommittee wants us to address regarding an evaluation of the Federal Reserve Bank of New York oversight of the Treasury securities market (see appendix I). The implementation phase and immediate follow-on jobs will not be able to address all issues raised in this paper. Instead, we will address those issues that we believe are of most interest to the Subcommittee.

What are the risks in the market, and how are they managed by market participants and supervised by the regulators?

High interest rates and interest rate volatility of recent years has transformed the market for U.S. government securities. Once considered the pinnacle of stability, the market today has violent price swings that, along with questionable dealings, have brought about the failure of several securities dealers in 1982 and again in 1984. Be

cause government securities dealers finance their positions primarily with borrowed funds, this places them in a highly leveraged position. As a result, they must closely manage their position risks to protect their relatively small capital bases. This raises a number of important questions. Exactly what are the risks in the Treasury securities markets? How do dealers know when their position risks become excessive? How do the Federal Reserve and other responsible regulators define dealers' capital and monitor its adequacy? Is there any conflict between efforts designed to increase capital to protect against risk and the Treasury's need to sell record amounts of debt over the next several years? Are there new risks associated with the increase in debt for which proposed capital standards do not account?

A complicating factor in answering the above questions is determining the effect of new investment vehicles and products relating to Treasury securities. Among these new products are financial futures and options, forward commitments, repurchase agreements, and zero-coupon securities such as Salomon Brothers' Certificates of Accrual on Treasury Securities (CATS). There is no question that these new products have had a profound effect on the marketplace; for example, earlier this year Treasury bond futures reached a record daily volume of 228,000 contracts, representing an underlying value of \$22.8 billion. New vehicles such as futures and options have also better enabled dealers and other market participants to hedge the risks of holding Treasury securities in a volatile interest rate environment. Yet, the full effects of these products are not clear. Does futures trading increase the price volatility of the underlying cash markets? Do repurchase agreements

represent a level of risk unacceptable to unsophisticated investors? Are any of these new markets potentially a weak link in the financial machinery, disruptions to which can curtail the Treasury's ability to market the public debt? These and other questions must be answered in order to assess whether any changes in the present scheme of informal Fed supervision are called for.

Should the Fed's oversight of the market be expanded or made more formal through regulations?

The experience of the last several years has shown that problems among non-primary dealers can cause shock waves that affect the entire market, including the primary dealers. This leads to the question as to whether there should be more systematic surveillance of presently non-reporting firms that are relatively active in the Government securities market.

The Fed is currently implementing an expanded voluntary data submission program from a group of dealers that are less sizable and active than the primary reporting dealers. This group includes only nonbank firms, as the chief focus here is on the financial viability of the firms, and bank dealers are already under regulatory scrutiny. Is bank regulation sufficient for their dealer operations? How far should the number of reporting dealers be expanded? Should some form of registration for dealers be required? Questions arise as to how detailed and comprehensive a reporting system is needed, and if a formal regulatory relationship with all dealers in Government securities is needed.

Are investors and other market participants adequately safeguarded?

Unlike other markets, such as corporate stock and bond issuers and exchanges which are fully regulated by the SEC, government securities trading is subject only to informal supervision by the Federal Reserve and any applicable state laws. The only exception to this categorization is the issue of fraud which is covered by SEC statutes. Is the present level of dealer supervision sufficient to protect institutional and private investors from potential trading abuses? Are safeguards needed regarding brokers, including those brokers who arrange sales among dealers and brokers who match investors with dealers? Is a self regulatory organization needed to monitor margining practices, record-keeping systems, use of customer funds, training and supervision of salesmen and traders, etc? Although most problems and dealer failures in recent years have resulted from fraudulent practices already covered by SEC regulations, closer supervision of dealer activities may have prevented some of these problems from occurring.

Is the present technology for securities transfer and funds settlement sufficient to meet future demands?

As the fiscal agent for the Treasury, the Federal Reserve shares the task of accounting for sales, redemptions, and transfers in ownership of Treasury securities with the Treasury's Bureau of the Public Debt. The facts that evidence of ownership for Treasury bills is now in book-entry form and that trading occurs primarily by electronic communication systems has greatly reduced the physical burdens of handling securities. Yet, continuous growth in the volume of securities transactions and the development of

world-wide security trading on a 24 hour basis could conceivably tax the limits of these recordkeeping systems.

Technology issues are further complicated by the intricate bookkeeping relationships and interfaces among the Federal Reserve banks and branches, the Bureau of the Public Debt, and Treasury's Bureau of Government Financial Operations (Treasury's paying agent). GAO reviewed the internal controls over automated systems for processing Treasury securities transactions at the Federal Reserve Bank of New York (which has, by far, the largest volume of activity of any Federal Reserve bank).<sup>20</sup> Yet, a comprehensive assessment of the combined Fed/Treasury systems' capacity to meet future transaction processing demands may be warranted.

Are there alternative ways to  
market the debt more efficiently?

As discussed earlier in this paper, the projected growth of the federal debt raises questions about the ability of sources of financing to absorb the expected volume of Treasury borrowing without causing undue upward pressure on interest rates, crowding out of private investment, or compromising the soundness of the dealer firms. Many regard the current and projected future years' federal deficits as a significant problem. There is a real danger that excessive deficits force the Treasury to compete on a massive scale with private credit demands that are the natural

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<sup>20</sup>See Control Improvements Needed in Accounting for Treasury Securities at the Federal Reserve Bank of New York (GAO/AFMD-84-10, May 2, 1984). The review culminated in recommendations to improve internal controls in the systems used by the bank to account for securities transactions. In response to these recommendations and other initiatives, the bank has made various control improvements.

accompaniment to a strong economy. This inevitably has an effect on interest rates and poses the potential danger of inhibiting orderly economic development. Such an outcome would not be a function of the current structure of the government securities market, however, but simply of the size of federal deficits. Are there alternatives to the present methods for marketing the federal debt, such as further changes in tax laws that would make Treasury securities more attractive to investors? If so, how would these alternatives affect total tax revenues and tax incidence? Would these changes further aggravate any adverse influences that the Treasury market has on other markets or on the economy as a whole?

A related question is whether government securities dealers that report to the Federal Reserve are in a position to withstand the possible strains that the deficit and resulting large public sector borrowing requirements could generate in the market. Currently 37 primary dealers are on the Federal Reserve reporting list. These dealers purchase a significant portion of Treasury securities auctioned to the public and provide vital liquidity to the marketplace by making an active secondary market for U.S. Government securities. Is this system of primary dealers the most effective conduit for channeling new securities to investors? Does the present number of primary dealers represent too high a level of concentration in trading activity considering the rapid expansion of the public debt in recent years? These and other questions must be explored in order to comment on the adequacy of the primary dealer system's ability to meet the Treasury's future financing needs.

What is the nature of the Federal Reserve's relationship to the Treasury in marketing the federal debt?

Because the bulk of the Federal Reserve System's conduct of monetary policy is carried out in the market for Treasury securities, known as open market operations, questions can be raised as to how these operations relate to the Fed's role as fiscal agent for marketing the public debt. Is there a possibility that continuing large deficits might lead the Fed to purchase more securities than it otherwise would for its conduct of monetary policy, resulting in excessive growth of the money supply?<sup>21</sup> In other words, is it possible that the Federal Reserve in effect could ultimately become the "buyer of last resort" because the magnitude of Treasury offerings would conflict with its objective of non-inflationary growth of the Nation's money supply?<sup>22</sup>

Another possible conflict is the fact that the 37 primary dealers in Treasury securities (which the Fed now monitors) are the same dealers that the Fed relies on for conducting open market operations. Thus, in its role as

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<sup>21</sup>When the Fed purchases Treasury securities, this has the result of increasing bank reserves, allowing banks to make more loans and thus increasing the money supply.

<sup>22</sup>The sale of securities by the Treasury to finance large deficits raises interest rates and crowds out private spending--the more so when the economy is near full employment. If the Fed buys more Treasury securities than is consistent with a moderate rate of growth in the money supply this may lower interest rates for a while but will eventually raise the rate of inflation, and consequently, interest rates as well. The attempt to lower rates may not even be successful in the short run if market participants quickly adjust their expectations of inflation.

monitor or possibly as regulator, the Federal Reserve cannot alienate the primary dealers on whom it relies in conducting monetary policy.

#### CONCLUSIONS OF SCOPING PHASE

Based upon the broad issues discussed in the previous section, the team has concluded that it is not feasible to address all the issues in one report. Instead, we propose a three part approach:

- doing an overview report describing the market;
- starting two follow-on assignments in early 1985 that would (1) analyze risks in the market, how they are regulated, and the capital adequacy of market participants in view of continuing large deficits, and (2) evaluate the Fed's oversight capability and determine if regulations are needed; and
- assessing the need for further follow-on studies which would start in 1986 or later.

Our objective for the overview report will be to obtain sufficient information about the Treasury securities markets to be able to describe in detail how the markets operate. The product will be a two-volume report. The first volume will be a concise description of the markets and issues, while the second volume will contain more detailed analysis on individual issues for those readers desiring further information. In brief, our efforts will center on (1) describing major characteristics of markets for Treasury securities, (2) the nature of dealer firms, (3) an assessment of risks present in the market (including the impact of failed institutions), and (4) the regulatory framework for supervising the market. This report will address those aspects of the subcommittee request that concern describing how the various Treasury markets operate.

The first follow-on job will deal with the broad issues of risk, regulation, and market capacity discussed in the first part of the issues section. The second follow-on job, concurrent with the first, will deal with the second issue raised in the issues section and more explicitly with questions about the Fed's oversight capability and need for formal regulation raised in the request letter. In both jobs, we will accept the size of deficits, the existence of the primary dealer system, and the existing institutional relationship between the Federal Reserve and the Treasury as given factors.

#### Potential Customer Interest is High

Our discussions with congressional staff, regulatory agency officials, members of the dealer community and academicians indicate that the issues raised in the Subcommittee request are of major concern to these potential customers. We have met regularly with staff members of the Subcommittee at their request to keep them up-to-date on the assignment and to provide proposed outlines and other planning documents. The Subcommittee staff have agreed to the assignment and approach saying that they are not aware of any recent study that describes in detail the Treasury securities market. Subsequent discussions with the Public Securities Association, primary dealers, regulators, and academicians indicated that they believed development of such a document, including a detailed discussion of the regulatory framework for each type of dealer and the oversight responsibilities of each of the regulators, would be extremely useful.

#### Methodology

The methodological approach we plan to take during the implementation phase will be an expansion of the approach

taken during the scoping phase. For example, we will continue to update and expand upon prior work done in the 1980 Report of the Joint Treasury-SEC-Federal Reserve Board Study of the Government-Related Securities Markets, past and current CFTC studies, and other studies reviewed during the scoping phase. We will continue to conduct interviews at the Federal Reserve and dealer associations regarding recent trends.

A key element in examining trading and delivery practices will be to analyze risks to market participants. This will be done by analyzing price volatility data and interviewing a broad range of participants in the market such as dealers, banks, brokers, investors, agency officials responsible for market surveillance, trade and professional organizations, and recognized experts. We contracted with an expert to explain risk management approaches. With the assistance of the Chicago Regional Office, we will interview SROs in Chicago about futures trading activity and possible improvements to market supervision. We will also meet with participants who are not satisfied with the way the market now operates.

We will also continue to examine statistical sources relating to the Treasury market and its participants. Included will be an analysis of information submitted by the reporting dealers, Treasury financing statistics, and economic indicators. As part of this effort we will obtain information on size of primary dealers by category, including the high, low, and average size by developing daily/weekly/quarterly statistics for selected individual dealers (transactions, positions, and financing similar to tables 1.42 and 1.43 in the Federal Reserve's quarterly bulle-

tins). We will also continue our work at the New York Fed by interviewing staff responsible for market supervision to determine

- legal authority to supervise the market;
- goals of supervision;
- historical development;
- status of previous GAO recommendations;
- applicable rules, forms and guidelines; and
- criteria for selection to the reporting list (and reasons to drop firms from the list).

We will further develop plans for the follow-on jobs of evaluating the ability of the New York Fed's market surveillance staff to carry out their responsibilities as well as analyzing risks in the market, how they are regulated, and the capital adequacy of market participants in view of continuing large deficits.

## APPENDIX I

WALTER E. FAUNTROY, D.C., CHAIRMAN

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WASHINGTON, D.C. 20515  
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RON PAUL, TEX.  
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SUBCOMMITTEE ON DOMESTIC MONETARY POLICYOF 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

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?

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?

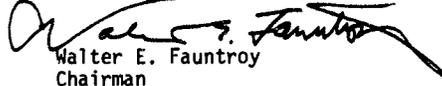
What steps have been taken to prevent collusion between dealers?

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. Fautroy  
Chairman

CONTACTS FOR SURVEY OF THE FEDERAL RESERVE'S  
SUPERVISION OF THE TREASURY SECURITIES MARKET\*

- House Banking Committee - Howard Lee - Staff Director  
Carl Mintz - Prof. Staff  
Andrew Bartels - Prof. Staff
- Federal Reserve Board - Don Kohn - Deputy Staff Director  
Brian Madigan - Economist  
Edward Mulrenin - Assistant Staff  
Director  
Dave Robinson - Associate Director  
Harry Jorgenson - Legal Div.
- Federal Reserve Bank  
of New York - Peter Sternlight - Executive V.P.  
Edward Geng - Senior V.P.  
Edward Ozog - Asst. V.P.  
Gary Haberman - Manager  
Peter Bakstansky - V.P. - Public  
Affairs  
James Oltman - General Counsel  
Walker Todd - Asst. Counsel  
Susan Moore - Mgt. - Reports Processing  
Ed Reagan - Economist
- SEC - John Komoroske - Special Counsel  
Catherine McGuire - Market Surveillance  
Greta Powers - Enforcement
- Treasury - Warren Carter - Deputy Asst. Sec.  
Frank Cavanaugh - Director, Govt. Fin.
- CFTC - Stacey Dean - Asst. to Commission  
Ron Hobson - Director, Div. of  
Economics
- CFTC - Chicago - Dennis Robb - General Counsel  
Richard Fung - Investigator  
Mitze Liebensorger - Economist  
Peter Stadalsky - Economist  
David Rosenfeld - Economist
- Public Securities  
Association - Heather Ruth - Ex. Director  
Robert Portnoy - Dep. Ex. Director  
and General Counsel  
Neal Atterman - Deputy General  
Counsel  
George Brakatselos - Research
- First Boston Corp. - Francis Jenkins - Management of  
Taxable Fixed  
Income Dept.
- Bankers Trust - Allen Rodgers - Manager, Govt. Dept.
- Columbia University - Frank Edwards - Professor  
- Ian Giddy - Assoc. Professor
- Wharton - Anthony Santomero - Professor
- Virginia Polytechnic  
Univ. - David Meiselman - Professor
- Chicago Board of Trade - Rick Kilcollin, Chief Economist
- Chicago Mercantile  
Exchange - Roger Rutz, Financial Futures  
Economist

LIST OF GOVERNMENT SECURITIES PRIMARY DEALERSAND 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  
 The Northern Trust Company  
 Carroll McEntee & McGinley Incorporated  
 Briggs, Schaedle & Co., Inc.

Registered Dealers

Bear, Stearns & Co.  
 A.G. Becker Incorporated  
 Donaldson, Lufkin & Jenrette Securities Corporation  
 The First Boston Corporation  
 Goldman, Sacks & 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.

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

Brokers' Brokers

Fundamental Brokers, Inc. (FBI)  
 Garban Ltd.  
 Chapdelaine & Co., Inc.  
 RMJ Securities Corporation  
 PGB Securities  
 Hill Farber Securities  
 Canter Fitzgerald Securities Corp. (Telerate -  
 available to public)

LIST OF GOVERNMENT SECURITIES PRIMARY DEALERS 1/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  
 The Northern Trust Company  
 Carroll McEntee & McGinley Incorporated  
 Briggs, Schaedle & Co., Inc.

Registered Dealers

Bear, Stearns & Co.  
 Donaldson, Lufkin & Jenrette Securities Corporation  
 The First Boston Corporation  
 Goldman, Sacks & 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.

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

Source: Federal Reserve Bank of New York.

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<sup>1</sup>This list is current as of May 1, 1985, and reflects mergers of firms and changes among categories. There are now 36 primary dealers.