

# The Dealer Market For United States Government Securities

The market for United States Government securities occupies a central position in the nation's financial system. The market helps the Treasury finance the Government debt and provides the Federal Reserve with an effective means of implementing monetary policy. While the safety of Government securities is a fundamental feature, perhaps their most vital quality to investors is their liquidity—the ability to transform them into cash quickly and at low cost. The market is an over-the-telephone one in which dealer firms stand ready to buy and sell from a wide range of public and private participants. The dynamic interaction of all participants enhances the attractiveness of Treasury securities and the importance of the market itself.

The dealer market is an effective conduit for the distribution of new Government securities to investors. Treasury financing requirements have grown significantly in recent years, owing to a series of increased Government deficits and to the need for refinancing a heavy schedule of maturities. Since 1974, dealers have initially bought slightly more than 40 percent of the securities competitively auctioned to the public by the Treasury. Moreover, the active role that the dealers have taken in making a secondary market, *i.e.*, buying and selling outstanding issues, has enabled investors to use Government securities more readily in carrying out their portfolio strategies.

Federal Reserve open market operations are undertaken with dealers in the market to implement monetary policy. The Manager of the System Open Market Account buys and sells securities on a temporary or outright basis either to augment (through purchases) or to reduce (through sales) the reserves available to member banks. These operations, conducted at the Trading Desk of the Federal Reserve Bank of New

York (FRBNY), have an important bearing on overall economic activity. They help to determine the growth of monetary aggregates and the availability of credit, and they influence the trend of interest rates.

Open market operations are also used to counter sharp fluctuations in bank reserves, which arise from such factors as changes in the public's demand for currency or in the size of Treasury cash balances held at Federal Reserve Banks. The Federal Reserve serves as the fiscal agent for the Treasury and as agent for Government and foreign official institutions in the market, buying and selling Treasury securities for them. Activity at the Trading Desk has grown significantly in recent years, mainly in reflection of greater fluctuations in other factors affecting reserves and the increased participation of foreign central banks in the market. The expansion of this activity has also contributed to the growth and liquidity of the secondary market.

The Treasury and the Federal Reserve closely monitor developments in the market. The Trading Desk at the FRBNY conducts regular meetings with representatives of dealer firms and throughout the day remains in telephone contact with their trading rooms, receiving price quotations and assessments of the state of the market. Officials of the Treasury are also in frequent contact with these firms and often solicit their views on debt management. The FRBNY has recently stepped up its surveillance of dealer firms. In addition to obtaining statistical reports from them, it visits the individual firms to gain further insight into market practices and to evaluate the activities of the firms themselves.

The market has expanded sharply in the past few years, both in overall trading activity and in the

number of dealer firms. The growth of trading, outright buying and selling, reflects the greater short-run variation in interest rates in the 1970's as well as the large increase in Treasury debt. The Treasury's debt management policies, especially efforts to extend the maturity of the Government debt while meeting enlarged borrowing needs, have also contributed to the market's development. There has also been a growing willingness on the part of portfolio managers to seek to anticipate interest rate movements and thus to trade more actively in the short run.

The entry of a number of new dealer firms into the market has substantially reduced the concentration of trading activity—*i.e.*, the share of trading activity accounted for by the largest firms—and has to some extent altered the trading relationships among the dealer firms. A more impersonal and even more competitive market atmosphere has developed. At times, participants, in seeking greater returns, may also have overreacted to events that could affect interest rates. This, combined with the active trading, could have contributed to short-run volatility in interest rates.

#### **Stock in trade: United States Treasury debt**

The Treasury increased its borrowing sharply following the onset of the 1973-75 recession. This mainly reflected the large increases in spending during the most severe business downturn in the post-World War II era. The public took on about \$130 billion net of marketable Treasury securities during 1975 and 1976, and the amount held outside the Federal Reserve and United States Government accounts rose by approximately 70 percent. The large increases in the debt in 1975 and 1976 caused the ratio of Treasury debt to gross national product to end a long downward trend and to rise for the first time since 1958. Still, the ratio of Treasury debt to GNP in 1976 was only about one-third as high as in the years following World War II.

The Treasury was able to float the bulk of the sizable increases in its debt without major disruptions to the financial markets, partly because the expansion of private credit demands and inflationary expectations both abated amid a more moderate pace of economic growth. At the same time, the Treasury adopted new techniques to aid its sales efforts. Initially, it concentrated debt offerings in the most liquid areas of the market, raising a substantial amount of new cash in bills during 1975. (For a discussion of the types and characteristics of Treasury debt, see box on page 37.) It then turned heavily to the coupon sector, particularly the two- to five-year area, and also issued long-term bonds as the Congress acted to ease existing interest rate constraints on new issues of these

securities. The greater reliance on the coupon sector helped make these securities more liquid by increasing the size and number of securities available for trading.

To facilitate its financing operations, the Treasury increased the amount of information provided to the public on the expected amount and characteristics of its financing each quarter. The Treasury began to expand the schedule of routine coupon offerings so that by 1976 it was holding monthly sales of two-year notes and quarterly sales of four- and five-year notes.<sup>1</sup> Mid-quarter refundings of maturing coupon securities generally contained offerings of a three-year note, an intermediate-term note, and a long-term bond. This evolving pattern helped to extend the maturity of the debt. Starting in 1970, the Treasury came to rely increasingly on auctions to sell its coupon issues, thus letting the market set the rate competitively. This technique makes pricing easier, because it allows market participants to adjust their bidding to incorporate evaluations of last-minute developments in the credit markets. Notable exceptions to this policy occurred in 1976, when on three occasions the Treasury used a fixed price and coupon subscription method that led to successful sales of very large amounts of seven- and ten-year notes.

#### **Investors**

The largest investors in Government securities are financial institutions who prefer to have very liquid and high-quality assets in their portfolios. Domestic commercial banks owned over \$100 billion of Government securities in mid-1977 (Table 1). Banks shape their portfolio decisions in response to pronounced seasonal and cyclical flows of funds. For example, bank holdings of Government securities increased substantially in 1975 and 1976 as an offset to cyclically weak demand for loans caused by a restructuring of balance sheets on the part of bank customers in the aftermath of the 1973-75 recession. The expansion in holdings of Government securities followed many years of little or no growth while customer loan demand was heavy. Other private financial institutions—such as thrift institutions, insurance companies, and pension funds—hold somewhat less than half the amount of Government securities held by commercial banks. While they keep Treasury issues in their securities portfolios, their needs for funds are generally more predictable than those of commercial banks. They typically hold a larger proportion of mortgages and other securities that offer

<sup>1</sup> In June 1977 and again in December 1977, fifteen-year bonds were sold rather than five-year notes. The Treasury has indicated that it will make such substitutions from time to time.

higher yields but are less liquid than Treasury issues.

The Federal Reserve System's holdings of Government securities rival the amount held by the commercial banks. These issues constitute the great bulk of the System's assets and they support its liabilities, primarily Federal Reserve notes which constitute most of the nation's currency in circulation, member bank reserves, and Treasury deposits. The principal reason for the growth of Federal Reserve holdings of Government securities has been the expansion of Federal Reserve notes and, to a lesser extent, the increases in

average Treasury cash balances at the Reserve Banks. Member bank reserves have expanded little in recent years, since the growth of member bank liabilities subject to reserve requirements has been offset by reductions in average requirements.

Other governmental units, both domestic and foreign, hold substantial amounts of United States Government securities because they are bound either by law or custom to hold the safest and most liquid securities available. Foreign and international investors, primarily official institutions, held about \$65 billion of marketable

### Characteristics of Treasury Securities

The Treasury sells two different kinds of marketable obligations: coupon-bearing securities and bills. The investor's return on a coupon-bearing security comes from semiannual interest payments plus any gain or loss in the price of the security from the time of purchase to maturity or sale if it is sold before it matures. Coupon-bearing securities are either notes or bonds. By law, notes have an original maturity of from one to ten years. Securities designated as bonds are permitted to have any maturity, but the Congress has restricted to \$27 billion the amount of bonds in the hands of the public that may bear coupons exceeding 4¼ percent. As of June 30, 1977, only \$13½ billion of bonds with coupons over 4¼ percent was in private hands, *i.e.*, outside the Federal Reserve System and official United States Government accounts. There is no comparable restriction on notes. In recent years, most coupon securities have been issued in minimum denominations of \$1,000, except for two- and three-year notes for which \$5,000 has been the minimum.

Coupon securities are usually sold through auctions in which bidders submit competitive bids expressed as annual yields to two decimal places—7.31 percent, for example. Noncompetitive bidders may submit tenders of up to \$1 million. The Treasury allots to the noncompetitive bidders first and then allots competitive bids, beginning with those at the lowest yield. When the issue has been fully allotted, the Treasury calculates the weighted average of the yields it has accepted and then establishes a fixed coupon to the nearest eighth percent, so that the average price is usually at par or slightly below par. For example, a security sold with an average issuing yield of 7.31 percent would have a 7¼ percent coupon and an average price slightly below par. A security is sold at par when the average yield is exactly equal to the coupon. All noncompetitive bidders pay the average issuing price, and competitive bidders pay the price associated with the

bids accepted by the Treasury.

Price quotations in the secondary market are expressed in points with par value equal to 100 points. Fractions of a point are expressed in 32nds. Thus, the price of a coupon security when it is below par might be expressed as 99 10/32, *i.e.*, \$993.12 for a \$1,000 bond. (When the price is above par, the quote might be 102 3/32, *i.e.*, \$1,020.94 for a \$1,000 bond.) The quoted price does not include any interest that has accrued on the security after the previous semiannual coupon payment date. The accrued interest is added to the quoted price the buyer agrees to pay the seller.

Bills do not carry coupons. They are initially sold and subsequently trade at a discount from par value. The investor's return is derived from the increase in value from the original discounted price at purchase to the par value at maturity. The Treasury auctions three- and six-month bills every week and 52-week bills every four weeks. Bills in the secondary market are quoted in terms of bank discount rates: the dollar discount is expressed as a percentage of par value computed at an annual rate until maturity (based on a 360-day year). The minimum denomination for a bill is \$10,000, and noncompetitive tenders are allotted in full up to \$500,000 each at the average auction price.

Another characteristic of Treasury securities is their marketability or nonmarketability. Marketable securities may be resold after issue, while nonmarketable securities are sold to designated purchasers who may not sell them to others. Official United States Government accounts hold slightly more than half the Treasury's nonmarketable securities. Among the most important accounts are the Federal employee retirement funds and the Federal old-age and survivors insurance trust fund. Savings bonds held by individuals constitute slightly less than one third of the nonmarketable debt. Other important holders of nonmarketable debt are foreign governments and state and local governments.

Table 1  
**United States Treasury Debt**

In billions of dollars

Public debt	December 31,	December 31,	December 31,	Amounts outstanding on	
	1960	1965	1970	December 31,	June 30,
				1975	1977
<b>Gross public debt</b> .....	290	321	389	577	674
Nonmarketable debt .....	101	106	140	213	242
Marketable debt .....	189*	215	248	363	431
<b>Marketable by type of security:</b>					
Bills .....	39	60	88	157	155
Notes .....	51	50	101	167	233
Bonds .....	80	104	59	39	43
<b>Marketable by type of holder:†</b>					
United States Government accounts .....	6	12	17	19	15
Federal Reserve System .....	27	41	62	88	102
Commercial banks .....	62	61	63	85	102
Mutual savings banks .....	6	5	3	5	6
Insurance companies .....	10	10	7	9	14
Other corporations .....	19	16	7	20	24
State and local governments .....	19	23	28	33	39
Individuals .....	20	22	29	24	28
Foreign and international .....	10	11	13	44	65
Other investors .....	7	16	22	36	35

Discrepancies in totals are due to rounding.

\* Includes \$18 billion of certificates of indebtedness.

† Partially estimated.

Source: *Treasury Bulletin*.

Treasury issues in mid-1977.<sup>2</sup> The growth of foreign holdings of Treasury securities mainly reflected foreign central bank investments of dollars obtained in exchange market operations as well as substantial acquisitions by oil-exporting nations. State and local governments invest in short-term Treasury securities to bridge the gap between the timing of periodic tax receipts and Federal grants-in-aid and the more continuous flow of payments for goods and services.

Individuals hold a considerable volume of marketable Treasury issues even though there are several factors tending to inhibit purchases by small investors. The transactions costs for small purchases and sales, the cost of custody, and large minimum denominations for shorter term issues have tended to restrain purchases by individuals except in periods when market yields on Treasury securities moved substantially above those on alternative liquid investments, mainly thrift and savings deposits. (The major portion of the Treasury debt held by individuals consists of savings

bonds with small denominations. They are not marketable, but they are redeemable prior to maturity.)

#### The dealer market

The market for United States Government securities centers on the dealers who report activity daily to the FRBNY. The dealers buy and sell securities for their own account, arrange transactions with both their customers and other dealers, and also purchase debt directly from the Treasury for resale to investors. In the normal course of these activities, they hold a substantial amount of securities. In addition to the dealer firms, there are brokers that specialize in matching buyers and sellers among the dealers in the Government securities market.

The dealer firms include dealer departments of commercial banks (bank dealers) and all others (nonbank dealers). Bank dealers call upon the custodial and other facilities of the bank and frequently obtain a portion of the financing of their securities holdings from the bank. The bank dealer often acts to meet the needs of the correspondent banks of the parent. In

<sup>2</sup> Foreign investors also held about \$22 billion of nonmarketable Treasury securities in mid-1977.

addition to trading in Government securities, bank dealers are generally active in other money market instruments and in the market for tax-exempt general obligation securities of state and local governments. They are, however, proscribed by the Banking Act of 1933 (Glass-Steagall) from trading corporate equities and bonds, as well as tax-exempt revenue issues. The Glass-Steagall Act was intended to create a legal distinction between commercial banking and investment banking. Nonbank dealers face no such proscription, and most of them trade in these other markets, although a few firms concentrate their energies on Government securities and money market instruments such as bankers' acceptances, commercial paper, and large negotiable bank certificates of deposit.

At the end of 1977, there were thirty-six securities dealers that reported their transactions, financing, and inventories to the FRBNY daily; twelve were commercial banks and twenty-four were nonbank dealers. A firm is added to the reporting list when it demonstrates that it conducts a significant amount of business with customers as well as with other dealers, that it operates in size in the major maturity areas of the market, and that it is adequately capitalized and managed by responsible personnel. If a firm's performance meets high standards in these respects for some period of time, the Manager of the System Open Market Account will generally establish a trading relationship with it. Thus, not all firms on the FRBNY reporting list necessarily trade with the System Open Market Account.

In 1944, the Federal Open Market Committee (FOMC) entered into formal relationships with a limited group of dealers to facilitate its objective of pegging interest rates during World War II. The dealers, numbering about a dozen, were required to make vigorous efforts to find buyers for their excess securities before selling them at the established prices to the System Open Market Account. When this basis for the special relationship ended with the demise of pegged interest rates in the early 1950's, a subcommittee of the FOMC acknowledged the need to develop specific standards for inclusion on the list. Among the characteristics noted at the time were that dealers should make markets, take positions, and operate in volume in all segments of the market.

For a time the size of the list showed some tendency to expand, and by 1960, when the FRBNY began receiving detailed statistical reports from dealers daily, the list included eighteen dealers. The number hovered around twenty through the 1960's but has since expanded rapidly to its present size, largely because investment banking firms have sought to expand the range of their operations as activity in the intermediate- and long-term Treasury market grew.

Dealers trade actively among themselves as well as with customers. Brokers facilitate this interdealer trading because they bring buyers and sellers together; the interdealer brokers themselves do not make markets or hold securities for their own account. They charge a commission on each transaction, amounting to roughly \$78 per \$1 million of Treasury coupon issues sold. The commission on Treasury bill transactions is generally calculated in basis points: for example, the commission on three-month bills frequently is half of 1 basis point, approximately \$62 on a \$5 million trade. (A basis point is 1/100 of 1 percentage point in interest rate terms.) In many cases, brokers provide their services by displaying participating dealers' bids and offers on closed circuit television screens located in the dealers' trading rooms. Other dealers then may contact the broker, respond to the quoted price, and complete the transaction. Some brokers operate completely by telephone, contacting dealers to pass along bids and offers.

In the dealer market, practically all trading is transacted over the telephone. There is no formal centralized marketplace such as an exchange; instead, the market consists of a decentralized group of firms, each willing to quote prices for purchase or sale of Treasury securities. Each firm's traders quote prices and buy from, and sell to, their counterparts at other dealer firms directly or with brokers. The firm's sales personnel use the telephone to contact customers to learn their investment needs and to arrange trades with them. The price for each block of securities traded is negotiated, and many customers will typically canvass the market to find the dealer with the best price.

The over-the-telephone organization of the Government securities market parallels that of other fixed-income securities markets. In contrast, stock exchanges largely rely on brokers to funnel orders from customers to the floor of an exchange. There, brokers called specialists attempt to match orders with designated prices from buyers and sellers in an auction market. At times, the specialists are required to act as principals and to buy and sell securities, especially when there is an imbalance of buy and sell orders.

For the most part, the delivery of Treasury bills takes place on the same business day (called "cash" delivery) while coupon issues are generally delivered on the following business day (called "regular" delivery). Delivery and safekeeping of securities is in large part handled by a book entry system provided by the Federal Reserve Banks. At the beginning of 1977, four fifths of the Treasury's marketable debt was in the form of bookkeeping entries on computers at the Federal Reserve Banks; the remainder was in paper certificates. The computerized system eliminates physical

handling of certificates, since the securities can be transferred electronically from sellers to buyers through entries on the safekeeping accounts of commercial banks that are members of the Federal Reserve System and who act as agent for these transactions. When transactions are arranged between participants in different Reserve Districts, the securities transfer is carried over the Federal Reserve wire-transfer network. Book entries and wire transfers facilitate rapid and low cost transfers of securities, especially among dealers and customers who are separated geographically.

#### The role of the dealer

The dealer firm makes markets by purchasing and selling securities for its own account. Dealers do not typically charge commissions on their trades. Rather they hope to sell securities at prices above the ones at which they were bought. Dealers also seek to have a positive "carry" on the securities they have in position, *i.e.*, they try to earn more interest on their inventory than they must pay on the funds raised to finance that inventory.

Dealers attempt to establish positions in the various maturities of Treasury securities in light of their expectations about interest rates and then trade around that position. But the initiative often rests with customers trying to undertake specific transactions, and the dealer must be willing to bid or offer at competitive prices to retain his customer base. When traders quote prices to customers and to other dealers, they continuously make small adjustments in relation to perceived prices elsewhere in order to maintain the firm's position, its inventories of securities, within the limits laid down by the firm's management. The management relies heavily on the traders' skills to enable the firm to change its position in various maturities whenever the outlook changes. A good trader is also expected to make money from the spread between bid and offered prices in a steady market.

The spread between bid and offered prices in general depends on a variety of factors. Two basic determinants are the current state of market activity and the outlook for interest rates. Spreads are narrower for actively traded issues, because the dealer is fairly certain about the price at which the issue can be purchased or sold. Spreads are narrowest of all on Treasury bills, because they are both actively traded and involve less risk of price loss than longer term securities. Spreads for three-month bills are often as small as 2 basis points on recent issues, *i.e.*, \$50 per \$1 million. The spread on an actively traded coupon issue might be 2/32 to 4/32, or \$625 to \$1,250 per \$1 million of securities. The spread is wider the longer the term to maturity and the smaller the size of a requested

transaction. Spreads also widen—sometimes dramatically—when new developments generate caution or uncertainty in the market.

A substantial increase in the short-run volatility of interest rates—and thus securities prices—in the 1970's has caused dealer firms to place great emphasis on position management. Sharp, unexpected price movements can lead to profits or losses on their net position, gross long positions minus gross short positions, that can easily outweigh the gains or losses arising from other sources.<sup>3</sup> Consequently, they manage their positions actively, frequently altering them in response to changing economic news, the perceived supply and demand conditions for Government securities, and other factors affecting the outlook for the securities markets. In the past, when rates were reasonably steady in the short run, dealers placed somewhat more emphasis on structuring their inventories to meet customer needs.

Dealer inventories are highly leveraged. More than 95 percent of the value of their holdings is typically financed with borrowed money; the dealer's own capital furnishes the remainder. Thus, the cost and availability of funds is an important consideration in a dealer's willingness to hold securities. When interest rates on the securities themselves are higher than the cost of the funds needed to finance the position, there is a "positive" carry. A dealer will tend to hold a higher inventory than in the opposite case when "negative" carry prevails. In all but a few periods in the last several years, interest rates have generally been higher on longer maturities—*i.e.*, the yield curve, the market yield at a specific time for each available maturity outstanding, is usually upward sloping. Thus, the cost of day-to-day funds is usually below the yield on all but the shortest term securities in the dealer's inventory. However, the full risk of any rise in interest rates falls on the dealer. Carry profits can quickly vanish.<sup>4</sup> The

<sup>3</sup> A dealer firm has a long position in a security when the firm is an owner of the security. The firm stands to gain if the price of the security rises. A firm establishes a short position by selling a security it does not own; it makes delivery to the buyer by obtaining temporary possession of the security, for example, by borrowing it from a third party. In this case, the firm stands to gain if the price falls because the firm can then purchase the security to return it to the lender at a price lower than the price at which it sold the security.

<sup>4</sup> Profits earned from positive carry can be rather small, compared with those resulting from buying and selling on the bid-asked spread or the profits and losses stemming from price changes. For example, a change of 1 basis point in the discount rate on a bill due in slightly more than three months is equivalent to the carry profits earned in one day if the financing cost of carrying the bill is 100 basis points (1 percentage point) lower than the rate on the bill itself. Moreover, positive carry rarely reaches magnitudes of 1 percentage point while a daily change of at least 1 basis point in bill rates is quite common.

amount of risk a dealer is willing to take by holding a longer term portfolio is one of the distinguishing characteristics of management style.

Searching out and obtaining financing at the lowest cost is a vital ingredient in making markets and the pursuit of profit. In doing so, the dealers provide temporary investment outlets for market participants with idle cash. In addition, dealers take in funds to provide them to others who are temporarily short of cash, in effect acting as intermediaries between short-term lenders and borrowers. (See section on dealer financing and the growth of intermediation on pages 45-46.)

Dealers also provide a service to their customers by giving their views about and advice on the market. Many dealer firms distribute market letters about recent and prospective market developments. The letters often contain assessments of Treasury financing needs, Federal Reserve actions, and prospects for the economy and interest rates. Salesmen discuss these subjects directly with participants and also seek to develop a familiarity with customers' investment objectives so that the firm's traders can provide the customers with buying and selling opportunities that mesh with their plans.

### The growth of trading activity

Trading activity has grown sharply in the last few years after many years of more modest expansion. Outright trading, the total of purchases and sales, amounted to nearly \$10½ billion on a daily average basis in 1976, roughly three times the level in 1974 (Table 2). In part, the growth of activity reflected the substantial outpouring of Treasury debt. But the efforts of all market participants in seeking superior returns on their portfolios have also been an important factor. Many investors, disenchanted by falling stock prices, have sought to obtain higher returns in the securities market by buying and selling more frequently in response to anticipated short-run movements in interest rates. Interdealer activity has expanded as well, particularly in the brokers' market.

While trading in bills has continued to dominate activity in the dealer market, trading in coupon securities has grown in relative importance. As recently as 1974, coupon trading accounted for 29 percent of total activity, but by 1976 it had reached 36 percent. The growing share of coupons resulted from the more rapid growth of coupon debt outstanding, and this growth in turn led to a more active secondary market for these issues. When measured by activity per dollar of debt

Table 2  
**Transactions in United States Government Securities by Dealers Reporting to the Federal Reserve Bank of New York**

Year	By maturity (in millions of dollars, daily averages)			By trading participant (as a percentage of total)			
	Due within one year*	Due in one year or more	Total	Dealers and brokers		Commercial banks	All others
1960†	994	379	1,373	31.5		44.0	24.5
1965	1,481	346	1,827	31.9		41.4	26.7
1970	2,032	481	2,513	42.7		37.0	20.3
1971	1,988	712	2,700	39.7		35.7	24.6
1972	2,259	671	2,930	Dealers	Brokers	34.1	27.2
1973	2,643	796	3,439	24.8	14.0		
1974	2,800	779	3,579	19.3	23.1	31.8	25.8
1975	4,112	1,915	6,027	18.2	27.0	27.9	26.9
1976	6,886	3,565	10,449	14.7	29.0	24.1	32.2
1977‡	7,061	3,877	10,938	13.0	32.6	23.2	31.2
				11.7	34.1	22.0	32.2

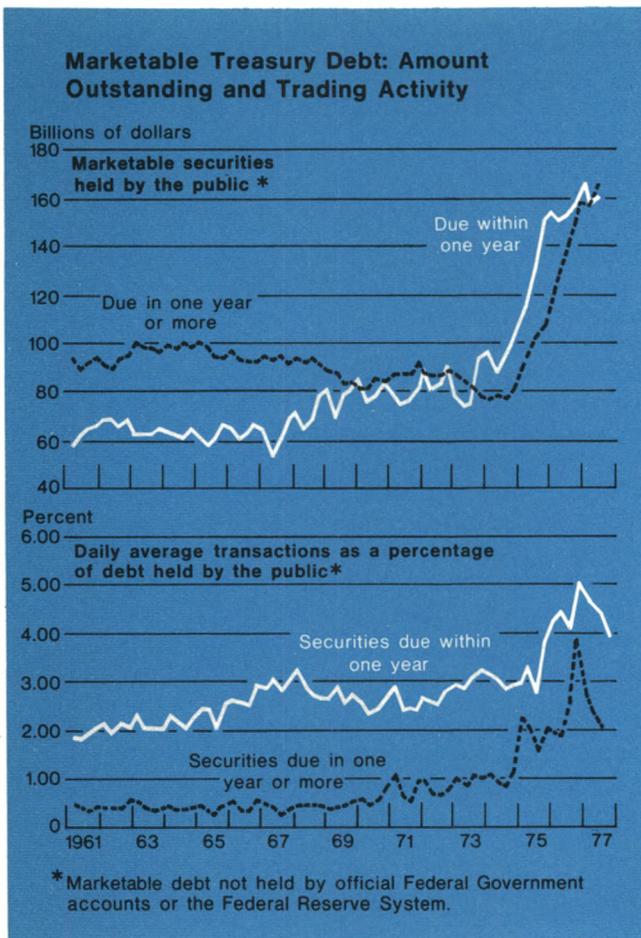
Discrepancies in totals are due to rounding.

\* Includes a small volume of transactions in coupon securities with less than one year to maturity.

† Average for last four months of the year.

‡ Average for first nine months of the year.

Source: Federal Reserve Bulletin.



outstanding in the hands of the public, the expansion of trading in longer term securities from 1974 to 1976 exceeded that for shorter term securities (chart).

The growing importance of the coupon sector also stems from the increased liquidity of these issues. For several reasons, participants can make desired portfolio changes more easily than in the past. The number of coupon securities outstanding has expanded sharply, and by mid-1977 there were nearly 100 different coupon issues, over 50 percent more than in 1974. Several maturity gaps were filled in, especially in the under-five-year area, thus facilitating adjustments to the maturity distribution of portfolios. Secondary market activity has been encouraged by an increase in the average size of coupon offerings from about \$1.5 billion in 1974 to about \$2.8 billion in 1977. Thus, dealers and other participants now have a greater variety of fairly sizable issues available with which to engage in hedge or arbitrage operations. A dealer, for example, may hedge to avoid market risk by matching a short sale in one

issue with a purchase of a similar issue whose price is expected to move by about the same amount as that on the security sold short. In an arbitrage operation, a participant would attempt to profit from what is expected to be a temporary disparity in the market's pricing of two issues by selling one and buying the other. He would then wait until the disparity is eliminated to reverse the transaction. If it is not eliminated, he might take a loss on the operation.

The dealers' customers, who account for slightly more than half of total dealer trading activity (Table 2), have expanded their trading substantially. Portfolio managers often seek to anticipate movements in interest rates and to lengthen or shorten the average maturity of their holdings to take advantage of expected rate changes. Changes in the outlook for interest rates over a day, week, or month now play an important role in portfolio decisions. In the past, such decisions were often tied to the investor's expectations of short- and long-run needs for liquidity. The profits generated by falling interest rates, *i.e.*, rising prices, in 1975 and 1976 also acted as an inducement to active trading. The annual growth in trading activity moderated through the first three quarters of 1977, compared with 1976, and trading per dollar of debt declined sharply from the highs posted at the end of 1976, as short-term interest rates rose and longer term rates fluctuated irregularly over a good part of the year.

Commercial banks account for over 40 percent of dealer trading with nondealer customers. In recent years, banks have come to rely on their securities holdings less as a secondary source of reserves, given their emphasis on liability management, and to use securities trading more as a means of maximizing profits. The more active approach to asset management has also meant greater variability in bank holdings of coupon issues. Banks have not been the only institutions that have adopted a more aggressive approach to portfolio management and trading. In fact, the activity of other customers, including state and local governments and nonfinancial corporations, has grown even more rapidly.<sup>5</sup> As a result, trading activity by dealers with customers other than banks grew from 35 percent to 57 percent of total trading with customers between 1970 and 1976.

Trading within the dealer community itself is conducted either directly between the firms themselves or indirectly through brokers. In the past few years, trading through brokers, who put together trades between dealers, has come to dominate interdealer trading; such brokering now accounts for nearly three quarters

<sup>5</sup> The available statistics separate banks from other customers but do not provide data on other customers by category.

of dealer trading with other dealers, compared with about one third in 1972 (the first year for which separate data on trading through brokers are available). Using a broker provides anonymity and allows a dealer to shield information about his activity and position from other dealers and market participants. Another factor contributing to the popularity of trading through brokers is the rapid transmission of quotes to other dealers, reducing the costs of canvassing a large number of dealers to collect that information.

Still, dealers continue to arrange a portion of their trades, slightly more than 10 percent of total activity, directly with other dealers. This activity reflects established interdealer trading relationships. A dealer firm specializing in one area of the market can sometimes meet customer needs by dealing directly with a firm primarily engaged in another area of the market.

The increased emphasis on position management has contributed to a tendency for total interdealer trading to assume a larger share of total activity, since dealers will typically look first to other dealers to find bids or offers for issues they want to sell or buy. Such trading has expanded from about one third of total activity in the early 1960's to about 45 percent recently. To some extent, this reflects an increase in the number of reporting dealers.<sup>6</sup> But over the longer run the expansion of the reporting list has probably not substantially distorted the measurement of the rising trend in activity. Many of the new entrants were not active in the Treasury market for very long before they became reporting dealers, and their trading volume was essentially nonexistent in the 1960's.

On the other hand, many of the newer firms are relatively more active in interdealer trading and have no doubt contributed to its measured rise. They have used trading with other dealers as a way of building up expertise and volume. (To meet the criteria for the reporting list, however, a firm must show a substantial volume of trading with customers.)

### Dealers' positions

Several important changes in the market have enabled dealers to conduct their operations with a lower level of inventories in relation to trading volume than in the 1960's and early 1970's. While dealers have placed greater emphasis on managing their positions actively, they can meet their customers' needs with inventories that are lower relative to sales than in the past. The

wider range of participants in the market, the growth in the activity of brokers, the greater ease in covering short positions (as is discussed below), and possibly more caution in exposing capital have contributed to this trend. Positions were sharply cut back—in the aggregate and in relation to sales—during the 1973-74 period of steep increases in interest rates. When money market pressures later abated and rate expectations changed, inventories expanded threefold to \$7½ billion by 1976 (Table 3), about the same as the expansion in trading activity. Even with the enlargement of inventory positions, however, dealer inventories were lower in relation to trading activity in 1976 than they had been during the years before the bear markets in bonds in 1973-74. The ratio of inventories to activity continued to fall over 1977 as a whole, when positions declined while growth of activity was rather modest.

The more performance-oriented approach of customers has generated a higher turnover of their portfolios. Dealers now find it easier to obtain issues to meet demands, especially for coupon issues. Moreover, the expansion of activity by brokers and the price quotations they provide almost continuously have probably bolstered dealers' confidence that particular issues can be found more readily than before.

The growth of the market for repurchase agreements

Table 3

### Inventories of United States Treasury Securities Held by Dealers Reporting to the Federal Reserve Bank of New York

In millions of dollars: daily averages

Year	Due within one year	Due in one year or more	Total
1960*	1,936	642	2,578
1965	2,816	533	3,348
1970	3,124	642	3,766
1971	3,322	867	4,188
1972	4,084	198	4,282
1973	3,047	58	3,105
1974	1,926	655	2,580
1975	4,562	1,322	5,884
1976	6,478	1,115	7,592
1977†	5,082	328	5,409

Discrepancies in totals are due to rounding.

\* Average for last four months of the year.

† Average for first nine months of the year.

Source: Federal Reserve *Bulletin*.

<sup>6</sup> A trade between a reporting dealer and a newly reporting dealer is an interdealer trade. Before the new dealer was added to the reporting list, that trade was classified as a trade with a customer. Also, because the new dealer is now a reporting dealer as well, the trade is counted twice—as is true for all interdealer trades.

Table 4

**Sources of Short-term Financing of United States Government and Federally Sponsored Agency Securities for Dealers Reporting to the Federal Reserve Bank of New York\***

In millions of dollars; daily averages

Year	Total	Commercial banks in New York City	Commercial banks elsewhere	Corporations	Others
1960†	2,610	559	584	1,081	386
1965	3,546	956	782	1,336	471
1970	3,965	1,098	1,072	538	1,258
1971	4,658	1,364	878	789	1,627
1972	4,201	1,292	713	904	1,292
1973	3,604	1,227	659	467	1,252
1974	3,977	1,032	1,064	459	1,423
1975	6,666	1,621	1,466	842	2,738
1976	8,715	1,896	1,660	1,479	3,681
1977‡	9,947	1,412	1,982	2,233	4,320

Discrepancies in totals are due to rounding.

\* Includes both bank and nonbank dealers.

† Average for last four months of the year.

‡ Average for first nine months of the year.

Source: Federal Reserve *Bulletin*.

Table 5

**Categories of Short-term Financing Arrangements by Nonbank Dealers Reporting to the Federal Reserve Bank of New York**

In billions of dollars; daily averages

Year	Collateral loans (1)	RPs (2)	Reverse RPs (3)	Matched RPs and reverse RPs (matched transactions) (4)	Funds provided to others through reverse RPs and matched transactions (3) + (4)	Funds retained (1) + (2) - (3)
1973	0.8	1.4	0.2	2.0	2.2	2.0
1974	0.8	1.6	0.8	2.5	3.3	1.6
1975	1.0	3.9	0.8	2.9	3.7	4.1
1976	1.4	5.1	1.8	3.4	5.2	4.7
1977*	1.7	7.0	4.9	4.8	9.7	3.8

RPs = Repurchase agreements.

\* First three quarters.

(RPs) and reverse RPs<sup>7</sup> has facilitated short sales—either to meet demands of customers or because of interest rate expectations. The availability of securities in this market has made it easier for a dealer to locate the particular issue he needs to deliver by acquiring the security under a reverse RP. In fact, a market for “specific issues”, with the party obtaining the securities specifying the particular issue, has developed in the RP and reverse RP markets and has become an alternative to borrowing securities. The older method of finding a holder willing to lend securities could be more costly and cumbersome. It often meant that a dealer's positioning move became obvious to others and required the borrower to put up other securities as collateral. The growth of RP markets has enabled dealers to take larger short positions than they had before during periods when interest rates were expected to rise. In other periods, dealers on average have not enlarged their long positions by as much as they had previously.

Dealers may also have become more cautious about exposing capital by assuming large short or long positions. Year-end capital<sup>8</sup> relative to positions in Treasury securities at the nonbank dealers has moved somewhat higher in recent years, compared with the 1960's and early 1970's. However, capital which has reached the industry in part through the entry of additional firms did not grow so rapidly as trading volume.

#### **Dealer financing and the growth of intermediation**

Dealers have broadened their sources of funds significantly in recent years. Their greater participation in the money market has enabled them to reduce their reliance on borrowing from banks in money centers. The growth of the market for RPs reflects the changes in dealer financing patterns and the increasingly sophisticated cash management techniques used by many money market participants. Dealers typically raise more funds than they need to finance their positions in securities and have become important as intermediaries in the money market.

<sup>7</sup> See “Federal Funds and Repurchase Agreements”, this Review (Summer 1977), pages 33-48. In a repurchase agreement, the owner of a security sells it outright to the provider of funds and agrees to repurchase the issue at a specified future date and price. In a reverse repurchase agreement, the provider of funds purchases a security and agrees to sell it back at a specified future date and price. These terms, RPs and reverse RPs, are sometimes interchanged in market parlance, however, and RPs are often used to describe the usual transactions of an institution in the market—whether it is a provider or user of funds.

<sup>8</sup> The capital applied to trading in Government securities represents the sum of each nonbank dealer firm's estimated allocation of its net worth to its activities in that market. Capital data are only an approximation of the capital employed, because it is likely that the various firms may use different and somewhat arbitrary methods of estimating their allocation of capital.

Commercial banks have remained the largest source of funds to dealers, but by 1976 the share they provided had slipped to about 40 percent from roughly 50 percent in most earlier years (Table 4). Large corporations once provided most of the rest, but insurance companies, savings institutions, Federally sponsored agencies, and state and local governments have become relatively more important. The Federal Reserve, through the RPs arranged by its Trading Desk, has also played a larger role in providing funds to dealers for short periods of time. The volume of RPs with the Federal Reserve has grown substantially since mid-1974, mainly because of the need to counter the effect on commercial bank reserves of enlarged fluctuations in Treasury cash balances at the Reserve Banks. As a result, the volume of funds provided by RPs with the Federal Reserve rose to about 15 to 20 percent of dealer financing in 1974 through 1976; in many earlier years it was only around 5 percent.

Dealers employ two basic methods of financing inventories: entering into RPs or furnishing securities as collateral for a loan. The rate of return on overnight RPs is related to the Federal funds rate but is typically below it, in part because the agreements are viewed as secured loans by many market participants. The interest rate on collateral loans to dealers by large banks in money centers is usually somewhat above the Federal funds rate since the banks view the latter rate as the cost of funding the loan.

Collateral loans have remained a significant source of dealer financing despite their higher cost. The banks are often residual suppliers of funds when money market conditions are tight and liquidity is scarce. Thus, collateral loans amounted to about one third of nonbank dealers' financings through collateral loans and RPs combined in 1973-74 but that proportion declined substantially in 1975-76 (Table 5). Bank loans can be obtained late in the day—and often are—after dealers have searched out other sources of funds. They can be used when a dealer agrees during the day to take delivery that same day, say, in Treasury bills, or ends up with securities that were expected to be sold but were not. Dealer departments of commercial banks do not use collateral loans. They rely on RPs and on other forms of financing and often obtain funds from their own banks.

Dealers also obtain funds to provide them to others. A dealer may raise funds through use of RPs and provide them to others by arranging a reverse RP. The growth in holdings of Government securities by many institutions over the past few years has enabled them to sell their holdings temporarily through RPs to meet short-term cash needs as an alternative to raising funds in the commercial paper market or at

Table 6

**Dealers' Trading Activity in Government Securities, 1976**

Percentages by maturity and by trading participant

Dealers	By maturity		By trading participant			
	Due within one year	Due in one year or more	Dealers	Brokers	Commercial banks	Other
All bank dealers .....	72	28	13	35	20	32
All nonbank dealers .....	62	38	13	31	25	31
Nonbanks:						
Ten recent entrants .....	59	41	12	38	18	32
Older firms .....	64	36	14	27	29	30
Top five firms .....	68	32	12	26	27	35
Others .....	65	35	14	37	21	28

banks. In addition, corporations and financial institutions have also been willing to invest temporary cash surpluses in short-term RPs in preference to holding demand deposits which pay no interest.

Frequently the dealer acts as a middleman in these transactions, obtaining funds from one customer to provide them to another. While the dealers are principals in the transactions, some are essentially acting as brokers because they "match" the maturities of the RP and the reverse RP that they arrange with customers. When the maturities of such transactions are not exactly matched, the dealer shoulders some risk with respect to interest rates. There can also be some risk in that the dealer is dependent on the performance of one customer in order to ensure that he can fulfill his obligation to another customer. Dealers are often willing to finance the placement of funds under reverse RPs through a series of RPs with shorter maturities. The upward slope of the yield curve over the past few years has encouraged this pattern.

These money market activities of the dealers have grown substantially in recent years. The dealers' role as a financial intermediary rivals their use of the market to finance inventories. In 1976, nonbank dealers provided \$1.8 billion of funds (primarily raised through RPs) to others through reverse RPs on a daily average basis. In addition, they entered into matched transactions of \$3.4 billion. The total, \$5.2 billion, was somewhat more than the \$4.7 billion they retained for their own use—collateral loans plus RPs excluding reverse RPs (Table 5). In 1977, the intermediation function continued to grow while the volume of funds retained declined as inventories fell.

**The changing structure of the market**

The structure of the market has changed significantly since the early 1970's. At work have been a sharp increase in trading activity, the closer trading relationships that have developed between the Government coupon and other capital markets, and new entrants. The new entrants have been able to take on a significant portion of overall trading activity despite their recent entry. An increase in competition has led to narrower spreads between bid and offered prices—particularly for coupon issues—and it has reduced market concentration to some extent.

Eleven firms were added to the reporting list from early 1974 through 1976, including two firms that left the market in 1973 and 1974 but returned in 1976. Ten of the new entrants were nonbank dealers, many of whom were already active elsewhere in the capital market. They were attracted by the expansion of trading in the Treasury coupon sector and the opportunity to provide alternative investment outlets for their customers. The lackluster performance of the equities market was an added factor. As a group, the new entrants have concentrated more of their trading in the coupon sector, with 41 percent of their activity in the more-than-one-year maturity area compared with 36 percent for the older nonbank firms in 1976 (Table 6).

The nonbank entrants appear to have placed more emphasis on position management and arbitrage, in that they hold lower net positions in relation to trading volume than older active nonbank firms. In addition, they do not seem to have developed customer relationships to the same extent as the firms active earlier. In 1976 about 50 percent of their trading was with cus-

tomers, compared with 59 percent for firms in the market prior to 1974. Some of these characteristics were highlighted in early 1977 when trading volume sagged as prices declined. Trading activity at the new nonbank dealers fell by roughly 20 percent in each of the trading participant categories. The older nonbank firms experienced a 12 percent decline overall, but their trading in the brokers' market fell by somewhat more than their trading in those areas involving established customer relationships (direct trading with other dealers, with commercial banks, and with all other customers).

The sizable growth in the number of reporting dealers has contributed to a substantial decline in the concentration of trading activity. In the late 1960's and early 1970's, the five most active firms accounted for about half of total trading activity, but by 1976 the share of the top five firms had fallen to slightly more than one third. Concentration of trading activity had begun to diminish slightly in the early 1970's when participation in the market began to expand. Even so, the same firms have tended to remain in the most active group over the past ten years. Over the interval, four firms were always among the five most active firms each year, and four others were included at various times.

Even though their share of activity fell, the five most active firms continued to account for about half of dealers' net positions, on average. Their positions may have remained higher because of the firms' orientation toward meeting investor demands. About 60 percent of the trading activity by the five most active dealers was directly with customers, while for other dealers it was about one half (Table 6).

Growth in the number of dealers in recent years may have been stimulated in part by high profits earned in the industry in 1975 and 1976, although dealer ranks have also increased in 1977 when the profit picture was far less favorable. The years 1975 and 1976 were two of the most profitable ever for dealers, rivaling 1970 and 1971. The Treasury's large outpouring of debt, the larger than expected declines in interest rates from record highs, and positive carry contributed importantly to the upswing of total profits.<sup>9</sup> In 1977, against a back-

ground of fluctuating interest rates, market activity leveled off and profits shrank. The risks inherent in the business are demonstrated by the profit results from 1967 to 1974, for in three of those years dealers as a group reported before-tax losses in their operations in United States Government and Federally sponsored agency securities.

### Conclusions

Recent years have witnessed substantial growth in the Government securities market, both in terms of activity and in the number of dealer firms. The market has responded well to sizable increases in Treasury financing requirements and in Federal Reserve open market operations. The liquidity of Government securities, particularly coupon issues—the fact that they can be converted into cash more quickly than other assets of similar maturity—has been enhanced in the process. Consequently, participants can carry out investment decisions readily at competitive prices.

Increased activity has both contributed to and resulted from the greater efficiency and competitiveness of the market. The market's capacity to handle large Treasury financings and Federal Reserve operations smoothly has expanded in recent years. The market is also better able to weather surges in trading activity precipitated by shifts in participants' perceptions of the economic outlook. These expanded capabilities are due in part to the increase in the number of available maturities, the enhanced ability to establish long or short positions, and the wider variety of independent decision makers active in the market. Competition has been strengthened through the large increase in the number of dealers and the resulting reduction in market concentration.

The expansion in the market and in activity has not been an unmixed benefit, however. Trading has taken on speculative overtones at times, which may well have exacerbated the volatility of prices. Participants—in searching for information about the probable course of interest rates—have increased their focus on, and reacted more to, temporary phenomena. The emphasis on trading and performance may not always have been accompanied by adequate appreciation of the increased position and credit risks that derive from this approach. Experience in 1977 seems to have served as a pertinent reminder of these risks. The dealers in the market confront a new challenge to develop and maintain activity in the more cautious but increasingly competitive market environment with which 1978 begins.

Christopher J. McCurdy

<sup>9</sup> The profits reported by the firms to the FRBNY should be viewed as an indicator of the general trend rather than a precise measure of levels, as there are several conceptual problems in calculating the firms' profits on trading in Treasury and Federal agency securities. Among the problems are the separation of overhead and capital costs for firms that operate in other markets and the calculation, for bank dealers, of the cost of funds obtained from the parent bank.