Treasury-Federal Reserve Study of
the U. S. Government Securities Market

THE CHANGING STRUCTURE OF THE DEALER MARKET IN GOVERNMENT SECURITIES

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THE FEDERAL RESERVE BANK of ST. LOUIS

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1. Introduction

The years 1961-66 were years of change in the dealer market for Government securities. New dealers, both nonbank firms and bank dealer departments, entered the industry and a few nonbank firms withdrew. The net effect was to increase competition in an already highly competitive industry. In addition, banks and other investors became more active in trading Government securities for short-term gains and in taking speculative positions in new Treasury issues--in part, because of the diminished risks characteristic of the steadier interest rate environment that accompanied the balanced economic expansion from 1961 to mid-1965. Despite a substantial increase in the volume of aggregate transactions in Government and Federal agency securities, the dealers became increasingly concerned during the 1961-65 interval whether the profits being earned were adequate to justify existing commitments of capital and specialized personnel in the industry.[1] At the same time some observers questioned whether the increased participation of banks as primary dealers might not lead to a withdrawal of nonbank dealers. This, it was said, would impair the ability of the dealer market to function under adverse conditions in intermediate- and longer term issues, in which trading risks are greatest and the bank dealers are least active.

The present paper is concerned first, with the changing composition of the dealer community and its adaptation to environmental changes over the interval, 1961 to mid-1965, and secondly, with the functioning of the dealer market subsequently as the monetary-fiscal policy mix used to deal with an overheating economy imposed heavy strains on financial markets. Broadly speaking, the dealer market handled an expanding volume of trading activity on generally

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1. The question of dealer profitability is the subject of another paper. William G. Colby, "Dealer Profits and Capital Availability in the U. S. Government Securities Industry, 1955-1965."

diminishing trading margins over the balanced phase of the economic expansion. It seems probable that this enhanced the ability of the Treasury to float its issues, of the Federal Reserve to carry out open market operations, and of private investors to utilize the market to serve their liquidity and investment requirements. As was to be expected, once imbalances began to develop in the economy and in financial markets, the dealers experienced growing difficulty in maintaining orderly and smoothly functioning markets, particularly in intermediate- and long- term securities. As expectations in 1966 became more volatile and then progressively more apprehensive about the impact of current and prospective demands on financial markets, many dealers and trading participants that had contributed to the resiliency of the market earlier practically withdrew from participating except in Treasury bills. Even here participation dropped sharply. Thus, the functioning of the Government securities market outside the short-term area came to depend increasingly upon only a few dealers, principally the large nonbank dealers, who continued to make markets in all maturities, albeit on a reduced scale. Investors experienced a notable deterioration in the market's capacity to bid for Treasury securities in any volume even at prices significantly below quoted markets.

The deterioration in the market's performance in 1966 appears to be explainable on purely cyclical grounds. It seems doubtful that structural changes within the dealer industry from 1961 through mid-1965--e.g. the entry of new bank and nonbank dealers--contributed importantly to the result. The very heavy use of borrowed money characteristic of the industry encourages a large volume of stabilizing speculation when risks of loss are small or moderate, but makes the conservation of capital a dominant consideration for most participants when such risks become large.

This kind of market mechanism serves effectively in transmitting the effects of monetary policy to the economy. Official moves toward either stimulation or restraint are transmitted very rapidly through financial markets as Government securities dealers seek to raise or lower their positions by large amounts and as their capacity for making effective markets varies. Thus, the deterioration in that capacity in 1966 reduced the shiftability of intermediate- and long- term Government securities, contributed to the rise in interest rates, and helped restrict the availability of credit to finance spending.

There is some risk as well in relying on a dealer mechanism so heavily dependent on borrowed money--the risk that the capital of the industry may be so impaired or threatened by falling prices that dealers will hardly make bids at all for long- term securities. Such a development affecting financial markets could conceivably lead to defaults by financial institutions or other debt holders unable to meet unforeseen cash drains and these defaults could escalate into a general financial crisis. It would appear that the Treasury and Federal Reserve System have a real interest in seeing that the Government securities market, in particular--and possibly other debt markets as well--do not cease to function in periods of restraint. This question, however, is beyond the scope of the present paper.

The present study describes briefly the nature of the dealer market for Government securities and examines recent changes in the financial environment within which the dealers function--specifically the further development of the money market and the increased professionalism of customers. Then, the paper reviews the changing share of various dealers and dealer groupings in market activity over the interval, 1961 to mid-1965, detailing the reduced share of the larger dealers and the rising share of bank dealers. A selective analysis is made of the performance of dealers as underwriters in Treasury bill auctions and in the Treasury's exchange refundings with attention focussed primarily on the same interval. The study then takes up the financing of dealers' positions, examining inter alia how monetary restraint makes dealer financing more expensive and difficult to obtain and thereby makes for thinner and more volatile markets. Finally, the paper examines the marked change in the relative performance of dealers in the first half of 1966, a development that underscored the dependence of customers in that period on a few core dealers for markets in intermediate- and long-term Government securities. As the reader will recognize, the form and content of the study are conditioned in some degree by the author's continuing responsibilities at the Trading Desk of the Federal Reserve Bank of New York.

2. The Dealer Market in 1966

In 1966 there were 20 primary dealers that were making markets in Government securities and doing business with the Federal Reserve Bank of New York. Each of these dealers bought and sold Government securities as a principal--that is, for his own account, undertaking the risks of loss and possibilities of gain that are implicit in owning outright the marketable debt obligations of the United States Government. (Like any other marketable obligation, these securities are subject to fluctuations in price with changes in economic conditions and investor expectations.) Taken together, the dealers provide a secondary market for Government securities that is unequalled elsewhere in the world in the size of transactions it will accommodate or the narrowness of the spreads between bid and offer prices at which business can be done.

The availability of this market, and the absence of credit risk in the obligations in which it deals, have given short-term Treasury obligations a ready marketability that has made them a preferred liquidity reserve for many.

Domestic banks and other financial institutions, nonfinancial corporations, state and local government agencies, and other economic units hold Treasury bills, in particular, for both the income and the liquidity they provide. Foreign central banks and international institutions find Treasury bills an ideal medium for holding their international reserves. Marketability and prime quality have also enhanced the attractiveness of intermediate- and long-term Treasury obligations to various investors. The excellence of the secondary market facilitates both the open market operations of the Federal Reserve System and the Treasury's management of the national debt.

The dealers that make up the market are a varied group. Eight are dealer departments of commercial banks and twelve are nonbank firms. All contact customers throughout the United States by phone and many of the nonbank dealers maintain regional offices. On a day-to-day basis the bank dealers normally operate quite independently of the investment or municipal bond underwriting operations of their banks. In fact, they tend to be more closely allied to the management of the bank's reserve position, which can be affected considerably by their operations. The bank dealers seek to service bank customers and to develop customers of their own, and to do so profitably, but the strategies pursued, and the risks run, vary considerably from bank to bank.

The nonbank dealers are even more diverse. Four that loom large in the Government securities business are departments of large firms that are also major underwriters of corporate and municipal bonds and, in varying degrees, of corporate stocks as well. (One of the leading nonbank firms specializing in Government securities merged into a leading brokerage and underwriting firm in 1964.) Several other dealers are similarly involved in corporate and municipal securities. For three nonbank firms, however, dealing in Government securities is their principal activity. Five of the nonbank dealers are also dealers in bankers' acceptances, and nearly all of the dealers--bank as well as nonbank--deal in Federal agency securities.

Dealers look to three sources of gross profit in their operations: current trading, taking speculative positions, and net interest earned after payment of financing costs. Trading profits are normally thought of as arising from day-to-day activity in buying securities at one price and selling them at a slightly higher price. Taking speculative positions involves essentially the management of a dealer's total position with a view to profiting by meeting anticipated customer needs and by expected movements in interest rates. Dealers, like other merchants, must normally have some inventory to be in business, but they have considerable leeway for adding to or reducing inventories, or for changing the maturity distribution of holdings in trying to buy low and sell high. The management of position takes in a longer time period than daily trading, but dealers cannot usually separate the two components of what are commonly reported as trading profits. The third element of return to dealers is the difference between the interest income earned on the securities owned and the interest paid on loans to carry the securities. Dealers speak of a positive carry when the difference is in their favor and of a negative carry when they pay out more in interest than they receive. Activity, positions, and interest rate relationships are key elements in the calculus of dealer profit.

An important characteristic of the dealer market is the huge volume of activity that is carried on by nonbank dealers in relation to the equity capital invested in the business. In 1965 reporting dealers had average daily transactions in Government securities and Federal agency issues (sales and purchases) of $2.0 billion and average daily positions of $3.7 billion. The nonbank dealer firms, which held $2.9 billion of these positions, usually borrow 95 to 98 per cent of the value of their inventories in hand, depending on the maturity of the securities being financed and the type of lender. In this situation, a change of one per cent in the value of a firm's portfolio could mean a loss or a gain equal to one-fifth to one-half the firm's capital employed in the Government securities market. Obviously, the conservation of capital is a key consideration to a nonbank dealer in conducting his operations. The bank dealers appear at least equally sensitive to the risk of loss, although the portion of bank capital invested in the business is ordinarily small.

The necessity of protecting dealer capital is perhaps the major determinant of the quality of the performance of the dealer market--the size and closeness of the markets dealers make to all comers in the various maturity categories. At all times a dealer is prepared to buy or sell Treasury bills or other short-term issues in far larger amounts and at narrower spreads than would be the case with long-term bonds. The price risk involved in short-term issues is less than for longer maturities and the volume of trading activity is very large, enabling a dealer to vary his holdings readily as his market judgements change. The size and closeness of quoted dealer markets also varies with dealer expectations of interest rate movements. In the period 1962 to mid-1965, when interest rates moved narrowly within a gradually rising trend, dealers were notably more willing to deal in larger size and at narrower spreads for any maturity than they had been in earlier years. In the subsequent period of economic boom in which interest rates rose rapidly and prices of Government securities fluctuated widely, the size of dealer markets again contracted and the price spreads at which they were willing to trade widened. Investors may be able to take the long view, but the dealer must be agile, changing his markets quickly to preserve his capacity for making markets at all.

Dealer portfolios tend to reflect both the nature of activity with customers and the response of dealers to changing economic circumstances. In

1965, 76 per cent of daily average dealer positions in Government and Federal agency securities were in Treasury bills and Treasury coupon securities maturing in less than one year. Price risks are small in these securities and 81 per cent of market activity in Treasury issues was concentrated in them. Federal agency securities, for the most part maturing within one year, accounted for another 9 per cent of portfolios. Holdings of 1 to 5 year issues and issues maturing in over five years constituted 4 and 11 per cent, respectively, of 1965 average positions.

Aggregate dealer positions in Government and Federal agency securities were $3.7 billion in 1965, almost $1 billion higher than in 1960. (See Table I.) Between the two years holdings of issues maturing in less than a year expanded by $950 million while holdings of longer maturities declined. Positions in Federal agency securities rose by $200 million to $339 million. Dealer exposure to risk increased markedly in 1964 and 1965, however, as positions in securities maturing in over five years rose sharply to average $391 million in 1965. This shift of emphasis apparently stemmed from dealer judgements that opportunities for profit were best in these maturities, given the gradual flattening of the yield curve, and that Treasury market purchases to keep down interest rates on new Treasury issues provided protection against marked price declines. As a consequence of its exposure, the dealer community sustained sizable losses as interest rates rose well above 4 1/4 per cent on all Government securities in the last half of 1965.

The continued escalation of interest rates in 1966 to levels not seen in a generation was accompanied by a decline in positions in coupon issues maturing in over one year to only $45 million in the first half of 1966, far lower than at any time in the preceding six years. Holdings of Treasury bills and short-term coupon issues also fell back. In contrast, average dealer positions

TABLE I

AGGREGATE DEALER POSITIONS IN
U.S. GOVERNMENT AND FEDERAL AGENCY SECURITIES

(daily averages, in millions of dollars)

	1960*	1961	1962	1963	1964	1965	(1st half) 1966
Treasury Bills	1,551	1,913	2,424	2,542	2,634	2,632	1,840
Treasury Coupons							
under 1 year	317	439	499	333	268	186	304
1 to 5 years	587	335	272	383	308	139	14
over 5 years	116	56	122	146	217	391	31
Subtotal	1,020	830	893	862	793	716	349
Total Government Securities	2,571	2,743	3,317	3,404	3,427	3,348	2,189
Federal Agency Securities	138	115	194	233	244	339	511
Total Government & Federal Agency Securities	2,709	2,858	3,511	3,637	3,671	3,687	2,700

*Beginning May 1960

Source: Market Statistics Division, Federal Reserve Bank of New York

in Federal agency securities rose sharply as agency financing increased rapidly and dealers experienced difficulty in distributing new issues in an atmosphere of rapidly rising rates. Late in 1966 and early in 1967, when the interest rate outlook changed, dealers built up their positions sharply in all areas to profit from the rise in prices they expected.

3. Changes in the Financial Environment

a. The further development of the money market

The money market has grown substantially in recent years, providing banks and other corporations, state and local governmental bodies, and others a more efficient mechanism for adjusting their liquidity positions. The demand for short-term assets by these economic units has mushroomed with the expansion of the economy and the further development of intensive cash management. Commercial banks, sales finance companies, the Treasury, Federal agencies, and other borrowers have tapped this demand by issuing short-term obligations tailored to a variety of needs. The secondary market for these instruments has also developed greatly, reducing the costs and uncertainties involved in moving between cash and earning assets, and thereby contributing to the increased demand for short-term obligations. The dealers in Government securities have played a key role in this process, partly because the entry of new firms and the general stability of interest rates in the 1961-65 period intensified competition and encouraged the search for new business.

The volume of money market instruments outstanding grew rapidly during the economic expansion of 1961-66, rising almost 80 per cent in the six years that ended in December 1966 (Table II). The supply of Treasury bills alone increased by $25.3 billion as the Treasury financed most of its cash requirements in the short end of the market--during much of the period in order to shore up short-term interest rates for balance-of-payments reasons. Other short-term debt

TABLE II

SELECTED SHORT-TERM DEBT OUTSTANDING

(billions of dollars)

	December 31, 1960		December 31, 1966	
U.S. Government marketable securities maturing in less than one year				
Treasury bills	39.4		64.7	
Other	34.4		40.5	
Subtotal		73.8		105.2
Other short-term debt[a]				
U.S. Agency issues	4.4		13.4	
Commercial paper	4.5		13.3	
Bankers' acceptances	2.0		3.6	
Banks				
Negotiable C/D's	-		15.7[b]	
Short-term notes	-		N.A.	
Subtotal		10.9		46.0
Total		84.7		151.2

a/ Government securities dealers had $2.3 billion in repurchase agreements with others than banks in December 1966; major banks around the country also had a large volume in such agreements outstanding with nonfinancial corporations. Since in both cases these essentially finance dealer positions in Government securities, they do constitute an addition to the supply of short-term debt outstanding.

b/ Weekly reporting banks.

Source: Treasury Bulletin and Federal Reserve Bulletin grew at an even more rapid pace, more than quadrupling within the six-year period. Indeed, a striking characteristic of the money market during the interval was the willingness of short-term investors to reach beyond Treasury bills, the most widely held and actively traded of liquid assets. The commercial banks were particularly successful in capturing a major share of the growth in liqquidity reserves through their issuance of negotiable certificates of deposit. On a much smaller scale, banks also provided corporations with very short-term investment outlets by selling Government securities to them under repurchase contracts and for a time by selling short-term notes of their own.[1] The nonbank dealers in Government securities continued to make repurchase agreements available to corporations and other investors as a means of financing dealer positions. Traditional issuers of short-term paper also shared in the enlarged market for such debt and the total outstanding of short-term Federal agency securities, commercial paper (including finance company paper), and bankers' acceptances rose sharply.

The very success of the System and Treasury in holding up short-term interest rates, even in the early stages of the expansion, provided holders of liquid balances a significant incentive for employing them in the money market during the 1961-65 interval. State and local governments greatly increased their participation in the Treasury bill market, raising their holdings from $2.6 billion at the end of 1960 to $4.5 billion on December 31, 1966.[2] The more sophisticated of such governmental units also added significantly to their holdings of bank certificates of deposit. The number of commercial banks investing in Federal

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1. The Federal funds market continued to provide primarily a mechanism for inter-bank reserve adjustments. While this grew apace, it did not add to the investment outlets available to nonbank investors.

2. Treasury Bulletin.

agency securities and commercial paper also expanded. Corporate treasurers, already skilled in cash management and short-term investment, were especially aggressive in seeking out higher yielding assets. Nonfinancial corporations are believed to be the primary investors in bank C/Ds and finance company paper, and also are active in almost every other segment of the money market. Other new areas of activity have included the purchase of short-term municipal securities, both outright and under repurchase contracts, and at one stage the placement of funds with Canadian banks and in the Euro-dollar market. Holdings of Treasury securities by large corporations reporting to the SEC declined by $4 billion over the five years ended December 31, 1965, but holdings of other current assets (excluding cash, receivables and inventories) rose by $13.5 billion to $23.3 billion.

b. The increasing professionalism of customers of the Government securities market

A notable feature of the Government securities market in the 1960's has been the growing professionalism of nondealer participants in the market. Money managers in banks and other financial institutions, nonfinancial corporations, state and local government instrumentalities, foundations, and trade unions have both broadened their investment horizons and sharpened the techniques they use in increasing the return on the funds under their care. Increasing customer sophistication in financial matters began much earlier, of course, but the steadier interest rate environment that developed in the first half of the 1960's both encouraged the search for better yields and reduced the risks associated with more venturesome investment behavior. The Government securities dealers themselves were a major force in the education of their customers to the attractiveness of alternative investment outlets and to the potential profitability of increased trading activity.

By mid-1965 the Government securities market functioned in a milieu in which professional money managers shifted funds in large size among a range of debt instruments and maturities in response to yield incentives that would have been thought nominal only a few years earlier.[1] While this development was most pronounced at the short-end of the maturity spectrum where alternative outlets abound, it was evident as well at the longer end where the yield spreads between Government securities, corporate bonds and mortgages were considerably narrower than in earlier years. The reappearance of major cyclical uncertainties in financial markets after mid-1965 increased both the importance of liquidity considerations and risks so that most money managers tended to pull back, at least temporarily, from the trading, arbitraging, and underwriting activities in which they had become engaged in more tranquil times.

Evidence on the use made by financial officers of the investment alternatives available to them is provided by an analysis of replies to a mail questionnaire by 397 institutional investors, which held about one-quarter of the marketable U.S. debt held outside official accounts at the end of 1965.[2] The respondents were all holders of Government securities, largely selected from those covered by the Treasury's survey of ownership. The replies indicated stepped-up use of loans or repurchase agreements with Government securities dealers, commercial paper of all types, bankers' acceptances, short-term municipal bonds and negotiable certificates of deposit. Not surprisingly those

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1. See Robert W. Stone, "The Changing Structure of the Money Market", <u>Monthly Review of the Federal Reserve Bank of New York</u>, February 1965.

2. Data drawn from the survey conducted by Joseph Scherer and his report "Institutional Investors and the Government Securities Market." Included in the survey were commercial banks, mutual savings banks, savings and loan associations, life insurance companies, fire and casualty insurance companies, and nonfinancial corporations, as well as the general funds and retirement funds of state and local governments, college foundations, and trade unions.

respondents that were most active in Government securities and/or had large total assets were most active in broadening their investment horizons. Banks and large nonfinancial corporations were among the most active, but a rise in activity was observed in all institutional groups. Over half of the respondents, however, reported no activity in the several types of short-term debt listed above.

About half of the respondents, accounting for three-quarters of the assets of the group around the end of 1965, reported repurchase contracts outstanding with Government securities dealers at the end of 1965. Somewhat surprisingly, only 30 per cent of respondents, accounting for about half of total assets, reported ownership of Federal agency securities--about the proportion owning bankers' acceptances. Almost half of the institutions with three-quarters of the assets were active in finance company paper in 1965 while two-fifths with about half of the assets employed funds in other commercial paper. Almost half of the respondents--with half of the assets--reported activity in short-term municipal bonds. About one-fourth of the institutions with about that proportion of the assets reported activity in negotiable certificates of deposits (C/Ds), which did not appear as a market instrument until 1961.

A very large proportion of those institutions reporting activity in short-term outlets other than Treasury securities indicated that they had stepped up their activity in the period 1961-mid-1965 as compared to 1955-60. Thus, three-quarters of the respondents with almost 90 per cent of the assets reported that their use of finance company paper had increased. Two-thirds of the respondents with 80 per cent of the assets indicated increased use of other commercial paper, and a slightly higher proportion were more active in bankers' acceptances. Three-fifths of those active in short-term municipal bonds, accounting for 70 per cent of assets of this group, reported increased activity in the 1961-mid-1965 interval.

Treasurers of nonfinancial corporations have been among the more aggressive in utilizing all forms of short-term obligations. A survey by the First Boston Corporation in 1964 provides some insight into the range of investment outlets authorized for 274 large manufacturing, trade, utility, and transport companies, each of which had $20 million or more in cash and marketable securities at the end of 1963.[1] Of this group, 83 per cent were authorized to buy Government securities, 72 per cent could buy C/Ds, 65 per cent finance paper, 50 per cent Federal agencies, 39 per cent municipals, 32 per cent bankers' acceptances, and 29 per cent Canadian Treasury bills, C/Ds or finance paper. As might be expected, the larger companies had the broadest authorizations. Of the 109 companies with $50 million each in cash and marketable securities at the end of 1963, authorizations ranged down from 100 per cent for Government securities to 69 per cent for municipals and lesser percentages for bankers' acceptances and Canadian short-term paper. Moreover, a considerable number of these larger firms authorized their treasurers to buy longer maturities of Government securities. Of the 109, only 6 were restricted to maturities of under one year, while 50 could buy Treasury issues maturing in over two years. Indeed, 31 firms either had no maturity limits or had specifically authorized purchases of issues maturing in over five years.

The Treasury-Federal Reserve survey of institutional investors revealed widespread sophistication in the techniques of money management.[2] Of 397 respondents, three out of five reported that they bid in Treasury bill auctions with a view to quick resale at a profit. Two-thirds reported that they bought

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1. Information furnished through the courtesy of Mr. Carl Cooke, The First Boston Corporation.

2. See Scherer, op. cit. His study documents the tendency for such investors to deal with an increasing number of individual dealers in recent years.

longer Treasury bills in the market and sold them before maturity to increase their return--taking advantage of the fact that longer bills normally yield more than shorter bills. About two-thirds also indicated activity in trading to take advantage of changing price relationships between different Treasury coupon securities. Half or more of the respondents reporting such activities indicated that their activity in each of these categories was about the same in the 1961-mid-1965 period as in 1955-60, but 25 per cent or more reported greater activity. Those reporting greater activity in the several categories accounted for about half of all activity in Government securities in 1965 by those using the three techniques mentioned above.

4. Changes in the Dealer Community, 1961-66

a. The new dealers

The entry of new dealers into the Government securities market was a major influence on the changing structure of the industry in the 1961-66 period. Five new dealers--three bank and two nonbank dealers--came on the scene while three nonbank firms that dealt with the Desk in 1960 either discontinued operations or retired from active participation in the market. Of the two new nonbank dealers, one is involved primarily in Government securities while the other is a department in a large underwriting firm. The three new bank dealers are dealer departments of banks in Chicago, New York City, and Los Angeles. Of these, the first two have their trading operation in New York City while the other operates essentially from the West Coast. Two of the new dealers began operations in 1961 and one each began in 1962, 1964 and 1965.

The new dealers added to the industry's already keen competition for customer business during an interval when most customers were becoming increasingly sophisticated in their use of the dealer market and of trading techniques. By 1965 the new dealers had built up trading volume in Government and Federal agency securities to an average of $446 million daily while the old dealers traded about $1.6 billion daily--about the same pace of trading for them as in 1961 when the entry of new firms began. The new dealers accounted for about one-fifth of activity in maturities of under one year in 1965, a slightly higher proportion of activity in 1-10 year maturities and somewhat less of activity in longer Government securities and Federal agency securities.

The new dealers as a group have apparently not been able to turn over their inventories of Government securities as rapidly as the old dealers. In 1965, for example, the old firms turned over their portfolios three times every four days on average while the new firms turned theirs over only twice in the same interval.[1] Presumably, building up trading activity with customers is one of the chief challenges facing a new firm entering this service industry. It is perhaps not surprising that the old firms as a group maintain an edge despite the aggressive search of the new firms for business on all fronts.

b. Changing dealer shares of trading activity

Increased competition exerted a pervasive effect on the industry during the 1961-65 period. The share of the major dealers in total activity declined and both the medium-sized and the smaller dealers enlarged their share of the business. There were also some shifts in the positions of individual dealers within the industry. The bank dealers increased in number from five to eight and their share of total transactions also rose.

Data on dealer activity suggest that competition eroded most the market position of the major dealers in Treasury bill trading, in which the risks are least, but that their market share of trading in Treasury coupon securities also declined. The top third of the dealers in terms of activity accounted for

1. The trading positions of dealers used in this calculation exclude securities financed under repurchase agreements maturing in over 15 days.

67 per cent of gross Treasury bill transactions totaling about $800 million daily in the last eight months of 1960, when bill rates were dropping back sharply as the recession deepened (Table III). By the following year, however, when rates moved much more narrowly, their share had begun to recede and by 1965, the share of the top six dealers had declined to 54 per cent of the $1.4 billion volume. Between 1960 and 1965 the share of the middle third of the dealers in Treasury bill trading rose from 26 to 34 per cent and that of the lower third rose from 7 to 12 per cent. The six leading dealers in Treasury coupon securities accounted for a larger share of activity in such issues than in Treasury bills--73 per cent of the $470 million average daily trading volume in 1960. By 1965 their share had declined to 63 per cent of the $440 million daily volume. The share of the middle third in trading in Treasury coupon issues rose from 24 to 29 per cent and the lower third from 3 to 8 per cent.

The dealers that were in the top third in activity in 1960 remained in the top third in 1965, but there were some shifts in position. Between the two periods, one dealer within the top third rose two places in Treasury bill trading and another dealer rose one place while two others fell correspondingly. In trading in Treasury coupon issues, two dealers among the top third rose two places each, one fell three and one dealer was displaced by a new dealer. In the middle third of dealers in Treasury bills in 1965, four of the seven were new dealers; in coupon trading, three of the six middle dealers were new dealers. (There were only 18 dealers that dealt in coupon issues.)

One of the key changes in the dealer community has been the rising importance of the bank dealers in total activity and a roughly corresponding decline in the market share of the most active nonbank dealers. In 1965 the eight bank dealers did one-third more business in Treasury bills than the three leading nonbank firms whereas the nonbank firms had had a small edge in 1960. The three nonbank firms, it is true, did about one-third more business in Treasury coupon

TABLE III

DEALER TRANSACTIONS IN GOVERNMENT SECURITIES

(market share; percentage of total)

Dealers	1960*	1961	1962	1963	1964	1965
TREASURY BILLS						
Upper third	67	61	60	65	62	54
Middle third	26	24	31	22	30	34
Lower third	7	15	9	13	8	12
	100	100	100	100	100	100
COUPON ISSUES MATURING IN LESS THAN 5 YEARS						
Upper third	71	68	70	71	74	67
Middle third	25	25	24	21	22	27
Lower third	4	7	6	8	4	6
	100	100	100	100	100	100
COUPON ISSUES MATURING IN MORE THAN 5 YEARS						
Upper third	77	73	69	65	75	64
Middle third	19	20	23	26	20	27
Lower third	4	7	8	9	5	9
	100	100	100	100	100	100

* Beginning second quarter 1960

Source: Market Statistics Division, Federal Reserve Bank of New York

securities than the bank dealers in 1965, but in 1960 they had done almost twice as much business as the bank dealers. In 1965 the eight bank dealers accounted for 42 per cent of all trading in Treasury bills and 32 per cent of trading in Treasury coupon securities, a gain in each category of 7 percentage points from 1960 (Table IV). Nonbank dealers other than the top three retained about the same share of activity in both Treasury bills and coupon securities in 1965 as 1960.

This change in industry composition appears to be rooted not only in the decision of more banks to add a dealer department to their array of services, but also in the diminished risks that seemed to be involved in the business in the period from 1961 to mid-1965. In the beginning most bank dealers tended to perform better in the short end of the market where risks were small. However, interest rates in the period fluctuated only narrowly, chiefly as a consequence of the orderly and sustained pace of the economic expansion, but also because of official actions to foster domestic growth while avoiding flows of short-term funds to foreign countries. With risks of loss apparently reduced, the size of the markets that all dealers would make expanded. The bank dealers as a group were able to do a rising proportion of both the increasing business in Treasury bills and the declining volume of activity in Treasury coupon securities. It may be that the concentration of market activity near times of Treasury advance refundings worked in the same direction since bank dealer departments may have a particular edge in trading with their correspondent banks and other customers of the bank at such times.

c. The broadening of dealer activities

The primary dealers in Government securities took a variety of steps in trying to cope with the increased competition from within the dealer market and from trading banks and other active participants in the market. Dealers

TABLE IV

BANK vs. NONBANK DEALER TRANSACTIONS

(daily averages, in millions of dollars)

	1960*		1961		1962		1963		1964		1965		(1st half) 1966	
	Bk.	Nonbk.	Bk.	Nonbk.	Bk.	Nonbk.	Bk.	Nonbk.	Bk.	Nonbk.	Bk.	Nonbk.	Bk.	Nonbk.
Treasury bills	277	522	386	650	477	753	475	724	504	797	592	805	694	822
Treasury coupons														
under 1 yr.	37	95	45	123	45	126	28	92	24	62	24	55	40	75
1 - 5 yrs.	64	191	56	208	50	175	47	168	56	162	65	129	84	149
over 5 yrs.	15	64	16	67	33	123	45	146	42	125	45	106	49	99
Subtotal	116	350	117	398	128	424	120	406	122	349	134	290	173	323
Total Government Securities	393	872	503	1,048	605	1,177	595	1,130	626	1,146	726	1,095	867	1,145
PERCENTAGE DISTRIBUTION														
Treasury bills	35	65	37	63	39	61	40	60	39	61	42	58	46	54
Treasury coupons														
under 1 yr.	28	72	27	73	26	74	23	77	28	72	30	70	35	65
1 - 5 yrs.	25	75	21	79	22	78	22	78	26	74	34	66	36	64
over 5 yrs.	19	81	19	81	21	79	24	76	25	75	30	70	33	67
Subtotal	25	75	23	77	23	77	23	77	26	74	32	68	35	65
Total Government Securities	31	69	32	68	34	66	34	66	35	65	40	60	43	57

* Beginning May 1960

Source: Market Statistics Division, Federal Reserve Bank of New York

intensified their contacts with old customers and sought out new one through their sales personnel. Most sought to improve their efforts to inform and educate their customers concerning both economic and bond market trends and current money market developments. Several nonbank dealers added economists and other research-oriented personnel for the contribution that they could make to internal decision-making and to relations with professional investment managers. Several of the bank dealers organized special money market desks that offer corporate treasurers advice on short-term investment outlets and even place funds for corporations.

As profitable opportunities shrank in the Government securities market during the long period of interest rate stability, many dealers expanded their activities in related markets. Nearly all stepped up their activity in Federal agency securities, the volume of which grew rapidly during the period. The dealers worked assiduously to win customers for these issues, which were available at higher yields than comparable Treasury issues, and thereby to earn an increased share of the attractive underwriting concessions allowed to members of the various Federal agency selling groups. The dealers became increasingly active in the secondary market for agency securities, greatly broadening that market. As a consequence, the daily average volume of trading in such issues rose from $78 million in the last eight months of 1960 to $141 million in 1965. Dealers' positions in the issues rose from $138 million to $339 million over the interval--in part, because the higher yields on Federal agency issues generally provided a positive carry. At the same time the spread between yields on Federal agency issues and comparable Treasury securities narrowed considerably as the secondary market for agencies improved.

The dealers were also quick to foster a secondary market for negotiable certificates of deposit (C/Ds), which were issued by commercial banks in negotiable form beginning in 1961. Under existing Regulation Q ceilings banks could not effectively sell C/Ds maturing in less than six months, so that dealers could position them without any risk that banks could otherwise offer a more attractive rate on new C/Ds than the dealer could on outstanding ones. Subsequently, however, increases in the Q ceilings in 1964, and 1965 enabled banks to sell C/Ds maturing first, in three months or more and then, in 30 days or over. Thus, when interest rates moved irregularly higher in late 1965 and 1966, few dealers were willing to position a sizable volume of C/Ds and trading tended to move to a negotiated basis. However, once interest rates began to move lower in late 1966, dealers acquired large amounts of C/Ds in order to profit by the rate decline that developed. Trading activity also picked up considerably.

Some nonbank dealers also expanded activities into other markets. Firms already engaged in the corporate and municipal bond markets had every reason to step up efforts in those areas as competition increased in the Government securities market. Their multiple-product lines afforded special advantages in dealing with investors wishing to switch between Government, corporate, and municipal securities. One or two others entered these markets in a small way but pulled back later. One major dealer also became a dealer in bankers' acceptances during the 1961-65 interval.

The bank dealers, for their part, sought to integrate their operations with the full range of other services provided by their banks--deposits, loans, safekeeping, and investment counsel. In close conjunction with their own dealer and money market operations several bank dealers developed a special facility to advise corporate treasurers on their short-term investments. Such money desks progressed rapidly to the actual placement of money for corporations in repurchase agreements with the bank, commercial and finance paper, bankers' acceptances, and short-term municipals as well as Treasury and Federal agency securities.

5. Changes in Dealer Performance as Underwriters of Treasury Offerings

The Government securities dealers play a key part in the financing operations of the United States Treasury. They subscribe for a significant share of nearly all new marketable securities sold by the Treasury, distributing them subsequently to investors. They maintain the secondary market for Treasury securities, in which supply and demand forces determine the yields on outstanding issues--yields that provide one yardstick of value to investors appraising any new securities the Treasury offers. Drawing on their very wide range of customer contacts, the dealers give the Treasury their views in advance concerning investor interest in different maturity areas that might be suitable for a new coupon security and of the terms that would be necessary to sell the issue. More generally, the dealers may put forward their recommendations on how the Treasury might most expeditiously cover the financing requirements projected in the budget. Once the terms of a particular offering are announced by the Treasury, the dealers inform their customers of the offering and help sell them on the new issue as a desirable investment.

Treasury financings pose a special challenge and opportunity to dealers. Normally, new offerings have to come to market at yields that are more attractive than those available on comparable maturities in the secondary market in order to attract the buying necessary to take up the offering. The subscribing dealer (or any other subscriber to the new issue) can realize an underwriting profit if demand for the new securities proves strong enough to cause the yield on them to drop back in line with yields available on similar maturities and if nothing intervenes to depress prices of Government securities generally. In determining his participation each dealer must gauge the attractiveness of the new issue, the potential demand for it, and the likelihood of any significant change in interest rates during the period of distributing the issue to investors.

The manner in which dealers perform their underwriting role depends in some degree on the type of Treasury financing. Weekly, monthly, and special auctions of Treasury bills proceed routinely as a general rule. Offerings of new Treasury coupon securities for cash involve considerable educational effort by the dealers and give rise to moderate trading activity in outstanding issues; a maximum for dealer subscriptions for a new cash issue is usually set by the Treasury. Offerings of new Treasury coupon securities in exchange for maturing issues (a regular rights refunding) or for issues maturing in the future (an advance refunding) usually involve a much heavier volume of secondary market activity as the eligible "rights" issues, the new issues, and outstanding issues change hands. In such exchange offerings, each dealer can usually control his own underwriting commitment by the manner in which he trades and the extent to which he exchanges the rights acquired in trading. To illuminate the changes in the underwriting role of dealers that took place in the 1961-mid-1965 period attention is focussed herein on Treasury bill auctions and on exchange offerings because the dealer largely controls his net commitment in such financings.

a. Treasury bill offerings

The dealer community is a major subscriber to the Treasury's regular offerings of three-, six-, nine- and twelve-month bills for cash. The average amount of Treasury bills taken by the dealers in the weekly auctions of three- and six-month bills rose from $464 million in 1960 to $740 million in 1965. All of the gain was in takings of six-month bills, which tripled to just over $400 million. However, the outstanding volume of Treasury bills rose quite sharply during the interval, partly as a result of the Treasury's effort to shore up Treasury bill rates for balance-of-payments reasons. Accepted dealer bids in the regular weekly auctions were 30 per cent of the total auctioned in 1960 and 34 per cent of the total auctioned in 1965. The dealer share of the nine- and twelve-month bills auctioned monthly has typically been larger, averaging 44 per cent of the total auctioned in the six auctions beginning in September 1966 with the introduction of the nine-month bills. Treasury sales of tax anticipation bills usually allow commercial banks to pay for some portion of their awards by payment to Treasury tax and loan accounts, effectively limiting the nonbank dealer role to buying the bills from successful bank bidders in the secondary market.

An analysis of the weekly auctions in January and July 1965 and in January and June 1966 gives some evidence of dealer performance of the underwriting role. On average in the sixteen auctions examined, the dealers took 27 per cent of the three-month bills and 44 per cent of the six-month bills that were awarded. The bank dealers took 11 per cent of the total awards of three-month bills and 10 per cent of the six-month issues. The nonbank dealers took 16 per cent of the three-month and 34 per cent of the six-month issues, the latter reflecting concentrated bidding by a few firms that frequently place substantial amounts of these bills under long-term repurchase agreements in hopes of selling them at lower rates when they are closer to maturity.

The performance of individual dealers as underwriters in Treasury bill auctions seems to be quite variable. Most dealers appear to regard such underwriting a normal part of their function, bidding in nearly every auction to get some bills. But some appear to be good bidders only spasmodically--presumably on those occasions when they deem the profit potential to be particularly attractive.

The bank dealers seem to be consistently good bidders for the three-month bills as are a small group of nonbank dealers. Thus, in the auctions noted above, six out of seven bank dealers and five out of twelve nonbank dealers received over $5 million in 3-month bills in 12 or more of the 16 auctions. The six bank dealers accounted for 37 per cent of the three-month bills awarded to all dealers while the five nonbank dealers accounted for 42 per cent of total awards.

The bank dealers appear less interested in the six-month Treasury bills, but a small group of nonbank dealers are consistent bidders. Only two of seven bank dealers received over $5 million in six-month bills in 12 or more of the 16 auctions, while four of twelve nonbank dealers were that successful. The two bank dealers received only 6 per cent of total dealer awards in the 16 auctions, while the four nonbank dealers received 45 per cent of total dealer awards.

Dealer participation in the 16 auctions analyzed suggests that dealer performance as underwriters of Treasury bills changed in 1966, as uncertainties mounted and dealer financing costs rose above Treasury bill yields. The bank dealers appear to have been less affected as bidders by the shifting circumstances than the nonbank dealers. Their share of both the three- and six-month bills auctioned in July 1966 was about the same as the average of the twelve earlier auctions, perhaps because the banks bid moderately and consistently in each auction--presumably related to current customer demand. The nonbank dealers, too, maintained in July 1966 their relative share of total awards of the three-month bill, but their participation in the six-month auction fell to 26 per cent in July 1966 from 37 per cent in the three earlier months analyzed. The four consistent bidders for the six-month bill among the nonbank dealers received only slightly less in July 1966 than earlier, but the other nonbank dealers dropped back sharply.

b. Regular exchange offerings

Once the Treasury has announced that it is offering one or more issues (either new or reopened) to holders of maturing Treasury coupon securities, the dealers play an important part in bringing the terms to the attention of these holders and other investors. Typically, the dealers buy the rights in considerable volume from holders that do not wish to make the exchange, frequently because these holders own the maturing issues as short-term investments and do not want to roll them over into issues maturing in as long as 12 to 18 months. At the same time dealers sell either the rights or the new securities to investors who want the new securities but do not own the maturing rights.[1] In the six or seven days between the Treasury's announcement and the close of the subscription books, the dealers acquire a position in the rights that exceeds by a sizable amount their when-issued sales, establishing the net position with which they emerge from the refunding. With the books closed the dealers hope, as noted earlier, that they will be able to sell their stake in the new issues at rising prices to investors that will be attracted by a yield that would normally be somewhat higher than that available on nearby Treasury maturities.

Dealer participation has been an important, though variable, element in the Treasury's regular exchange offerings in recent years.[2] Dealers have participated on average to the extent of about 10 per cent of total public subscriptions for the short options--12 to 18 month issues--in twelve such offerings over the 1961-65 period, but their share ranged from 2 to 18 per cent in particular offerings (Table V). The dealer role was considerably more

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1. Dealers, of course, also buy when-issued securities from holders of the rights who wish to remain invested until the payment date for the new issues, which is usually about two weeks after the books close.

2. This section draws heavily on material prepared by Mr. Donald Hunter of the Securities Department of the Federal Reserve Bank of New York. There are many problems with the data on Treasury financings, but the data presented herein are comparable for the entire period despite internal imperfections. Dealer participations are taken herein as the sum of rights owned on the day before the books close, and net long positions on the same day of when-issued securities by those individual dealers reporting such positions. The aggregate data approximate those presented in Thomas R. Beard, U.S. Treasury Advance Refunding, June 1960-June 1964 (Washington: Board of Governors of the Federal Reserve System, 1965), pp. 26-27.

TABLE V

DEALER PARTICIPATION IN TREASURY EXCHANGE REFUNDINGS

Refunding (1)	Total Dealer Participation[1] ($ millions) (2)	Total Dealer Participation[1] Per Cent of Public Subscription (3)	Percentage of Total Dealer Participation 3 Top Dlrs. (4)	Percentage of Total Dealer Participation 6 Top Dlrs. (5)	Percentage of Total Dealer Participation Other Dlrs. (6)	Percentage of Total Dealer Participation Bank Dlrs. (7)	Percentage of Total Dealer Participation Non-Bank Dealers (8)	Percentage of Total Dealer Participation Total (9)
--SHORT OPTION--								
Aug. 1961	817	13	50	69	31	21	79	100
Nov. 1961	892	15	50	67	33	22	78	100
Feb. 1962	587	9	40	67	33	28	72	100
May 1962	736	10	34	62	38	27	73	100
Nov. 1962	344	8	32	59	41	30	70	100
Feb. 1963	121	4	45	51	49	31	69	100
May 1963	764	14	43	66	34	25	75	100
July 1963	284	13	33	66	34	39	61	100
Feb. 1964	717	18	34	59	41	40	60	100
May 1964	52	2	42	62	38	38	62	100
May 1965	137	8	31	45	55	61	39	100
Aug. 1965	266	13	36	58	42	56	44	100
--LONG OPTION--								
Aug. 1961	222	32	48	72	28	20	80	100
Nov. 1961	205	54	57	73	27	17	83	100
May 1962	261	23	48	68	32	17	83	100
Nov. 1962	471	20	56	75	25	23	77	100
Feb. 1963	677	27	43	70	30	19	81	100
May 1964	572	38	43	66	34	25	75	100
May 1965	818	41	39	64	36	27	73	100
Aug. 1965	197	24	39	65	35	35	65	100

1. Total participation in each exchange offering is equal to:
   (a) Total rights held on the day before the books close.
   (b) Net long positions in when-issued issues on the day before the books close by individual dealers reporting such positions.

important, however, in the eight offerings of a longer option--ranging from 2 1/2 to 13 years to maturity. Dealer participation in these averaged 32 per cent of total public subscriptions, with participation ranging from 20 to 54 per cent in individual offerings. Clearly, the dealer community supplies a very significant amount of support to the Treasury's regular debt lengthening operations.

Dealer participation in exchange refundings includes subscriptions tendered to cover sales of when-issued securities made before the books close. On average, such sales amounted to about one-quarter of dealer participations in the short option on 12 occasions and to about one-third of dealer participations in the longer option on 8 occasions. On average, dealers distributed about another 15 per cent of their participations in both short and long issues by the day before settlement for the exchange. This left the dealer community with net long positions averaging about three-fifths of their total participation in the short options and one-half of their total participation in the longer options. It seems clear that the underwriting period extended well beyond the settlement date for these exchanges.

During the 1960's the dealers came increasingly to favor the long option in regular exchange refundings in which it was available. Thus, dealer participation in the short option was 2.5 times that in the long in the four 1961-2 offerings in which both options were offered. By 1964-65, however, dealer participation in the long option was 3.5 times that in the short in the three refundings in which both were offered. This marked shift in emphasis was more acute than a similar shift affecting general public participation. Dealer participation fell from 11 to 7 per cent of public subscriptions for the short option, but held steady at around one-third of public participation in the long option.

The shift in dealer interest to the longer option probably reflected a number of influences at work. Investors came to favor the longer option in the comparatively stable interest rate environment of the first half of the decade. In addition, the Treasury was somewhat more aggressive during the period in buying for Treasury trust accounts portions of new issues that fell or threatened to fall below issue price, usually the longer option. This official buying led many dealers to feel that their risk of loss was limited and that larger commitments were justified even though potential gain per million dollars might be considerably smaller than in earlier years. In the May 1964 and May 1965 refundings dealers took almost 40 per cent of total public subscriptions. In the event, however, some other market participants seem to have reached similar conclusions and subscribed as quasi-underwriters. Thus, despite selling a normal one-third of their total participations before the books closed, the dealers in these instances made little additional distribution by the settlement date, because of net selling of the new issue by other market participants. In the August 1965 refunding, both dealer and other underwriting interest waned in the wake of stepped-up involvement in Vietnam and distribution proceeded more rapidly than usual as the dealers sold aggressively.

Within the dealer community there were significant changes in the participation in the Treasury's exchange refundings. Perhaps the most notable of these was the increased participation of the bank dealers, whose number rose from 5 to 8 over the interval (Table V). In the short option their share in total dealer participation rose from 26 per cent in 1961-62 to 49 per cent in 1964-65. In the long option their share rose from 19 per cent to 29 per cent. The dealer banks' share of the distribution made of the short option appears to have kept pace with their higher participation. In the long option, however, their performance as distributors showed little change in 1964-65 from 1961-62 (Table VI). This suggests that the bank dealers as a group took an increasing stake in the longer option but were not able to develop outlets to a corresponding degree.

More generally, the data on the 1961-65 experience suggest that the major dealers continued to account for an overwhelming share of the distribution of the longer issues throughout the interval, despite their shrinking share of the total dealer participation. In three 1961-62 offerings, the top three dealers accounted for 58 per cent of the when-issued sales by all dealers in the period preceding the settlement date. In three 1964-65 offerings the top three dealers accounted for 63 per cent of such sales although their share in the initial dealer participation had declined to 40 per cent from 52 per cent in 1961-62. Taking the top six dealers in both intervals--equivalent to the top third, their average share of distribution rose from 76 to 86 per cent between the three 1961-62 financings and the three in 1964-65, while their share in initial dealer participation declined from 72 per cent to 65 per cent.

These relationships indicate that the growth in dealer participation in the long option between 1961-62 and 1964-65 was not accompanied by a commensurate growth in the ability of most dealers to distribute such securities. The top six dealers, a group that included one or two bank dealers on each occasion, continued to account for the bulk of the distribution carried on. The increased weight of securities in the hands of other dealers, as well as in the hands of other short-term holders, would appear to have prolonged the period needed to distribute the new issues and increased the likelihood that the Treasury would find it necessary to relieve market congestion.

TABLE VI

DEALER DISTRIBUTION OF THE LONG OPTION IN TREASURY EXCHANGE REFUNDINGS

Refunding	Net Position on Day Books Close ($ mil.)	Net Position on Day Books Close Per Cent of Public Exchange	When-Issued Sales to Day Before Settle. Date ($ mil.)	Percentage of Sales by Bank	Percentage of Sales by Non-Bank	Total	Percentage of Sales by 3 Top Dealers	Percentage of Sales by 6 Top Dealers	Other
Aug. 1961	181	26	n.a.	n.a.	n.a.	100	n.a.	n.a.	n.a.
Nov. 1961	114	30	85	13	87	100	59	79	21
May 1962	170	15	155	14	86	100	53	77	23
Nov. 1962	363	15	234	17	83	100	61	71	29
Feb. 1963	345	14	434	15	85	100	50	80	20
May 1964	417	28	196	32	68	100	51	77	23
May 1965	536	27	283	12	88	100	59	98	2
Aug. 1965	126	16	104	8	92	100	78	86	14

n.a. Not available.

c. Advance refundings

One of the major innovations of the past decade in Treasury finance has been the introduction of the advance refunding in which holders of issues maturing as long as several years in the future are offered an opportunity to exchange into new or reopened securities maturing even further in the future. The new techniques enabled the Treasury to increase the average maturity of the marketable debt over the 1961-65 period even though four-fifths of the $25.6 billion increase in marketable debt during the interval was in the form of Treasury bills.[1]

The primary dealers in Government securities have become an important factor in the distribution of securities maturing in about 5 years or longer through this technique.[2] In 1960-61 they were responsible for only 4 to 7 per cent of the total public exchange into very long-term issues, but their participation expanded rapidly until they accounted for 26 to 40 per cent of the issues exchanged in 1963-65 (Table VII). This increase paralleled a general expansion of public interest, which proceeded to the point that over $9 billion of securities were exchanged in advance of maturity in both July 1964 and January 1965. As in the case of regular exchange refundings, the dealers also were willing to build up their stake--in part because of expectations that official buying would be likely to limit the risk of loss.

Dealer participation in the advance refundings tended to be considerably higher in the longer maturities offered by the Treasury. Thus, in 1963-65 dealer conversions ranged from 62 to 73 per cent of total public

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1. E. Ettin, The Financial and Economic Environment of the 1960's in Relation to the U.S. Government Securities Market. See also Thomas R. Beard, op. cit. which analyzes the advance refundings in detail.

2. This section draws heavily on material prepared by Mr. Donald Hunter of the Securities Department of the Federal Reserve Bank of New York.

conversions into issues maturing in over 10 years. The dealer share of exchanges into 5-to-10 year maturities was considerably lower, ranging from 12 to 31 per cent.

Advance refundings typically touched off a substantial volume of trading in the secondary market as investors used that market to acquire or sell the issues eligible to the exchange or the new issues. A larger share of the conversion apparently took place through the market than in regular exchange refundings, when many of the holders have presumably acquired the maturing coupon securities with a view to the possibility of exchange. Thus, dealers placed from 11 to 20 per cent of the final exchange with investors in the week to ten days from the time the Treasury announced the terms until the books closed. This distribution compared with a range of 2 to 9 per cent in regular refundings. Even so, advance refundings were normally so much larger in magnitude than regular refundings that the net underwriting commitment of the dealer community was considerably larger. Dealers' net positions on the day the books closed totaled almost $2.5 billion in the three 1964-65 advance refundings compared with $1.3 billion in the long option of regular refundings in February 1963, May 1964 and May 1965.

Dealer distribution of the new issues seems to have become somewhat more sluggish in the later advance refundings. In the three 1962-63 refundings on which data are available, dealers were able to distribute two-thirds of their total exchange by the day before settlement for the new issues (Table VII). In the three 1964-65 operations, their distribution fell back to 56 per cent of the amounts exchanged for by the dealers. One suspects that in advance refundings, as in regular refundings, a large volume of speculative subscriptions was attracted over time from dealers, banks and others, who have limited capacity to distribute securities to investors.

TABLE VII

DEALER PARTICIPATION IN ADVANCE REFUNDINGS

Occasion	Dealer Conversions		Net dealer positions in new issues after conversion		Net dealer sales to day before settlement[1]	
	$ million	Per cent of public conversion	$ million	Per cent of public conversion	$ million	Per cent of dealer conversions
Feb. 1962	400	10	271	6	n.a.	-
Sept. 1962	1,515	20	661	9	1,015	67
Feb. 1963	2,288	30	886	12	1,683	74
Sept. 1963	2,210	34	932	14	1,315	60
Jan. 1964	1,052	40	492	18	552	52
July 1964	2,433	26	995	11	1,553	63
Jan. 1965	2,447	27	985	11	1,265	52

n.a. Not available.

1. Excluding sales to Treasury investment accounts.

6. Dealer Financing[1]

The interest costs that Government securities dealers incur in financing their portfolios bear on dealer profitability and on the size and composition of their portfolios. What matters is not so much the particular level of rates at which financing is available as the spread between the interest rates dealers earn as owners of Government securities and the rates they pay for carrying the securities. A sizable positive spread, or "carry," adds to profits while a negative carry imposes an additional charge against profits earned in trading. As noted earlier, the nonbank dealers normally finance positions to the extent of 95 per cent or so with borrowed money. Accordingly, they have a powerful incentive to seek out the cheapest source of financing available, provided this does not impair the availability of securities for trading purposes. Aside from expectations of potential trading profits, dealers have a natural tendency to weight their portfolios with securities that will carry themselves--that is, provide an interest return at least as great as current financing costs. Accordingly, dealers tend to have net long positions in high coupon securities and to have net short positions in low coupon securities--although other considerations may outweigh interest calculations at times. Bank dealer departments are likewise conditioned in their operations by the rate at which their bank charges the dealer department for the use of bank funds, if such a charge is made.

a. The nonbank dealers

The nonbank dealers tap a variety of sources in financing their positions. Nonfinancial corporations are a major source, financing about half of nonbank dealer positions in recent years. (See Table VIII.) Dealers normally make repurchase agreements with a corporation, selling securities to them with

1. This section draws on the excellent Ph. D. dissertation by Louise Freeman Ahearn, The Financing of U.S. Government Securities Dealers, 1960-63 (New York, 1965).

TABLE VIII

SOURCES OF FINANCING FOR THE NONBANK DEALERS IN GOVERNMENT SECURITIES[1]

(dollar volume in millions of dollars)

	1960		1961		1962		1963		1964		1965		1966 (1st half)	
	$ Vol.	Per Cent	$ Vol.	Per Cent	$ Vol.	Per Cent	$ Vol.	Per Cent	$ Vol.	Per Cent	$ Vol.	Per Cent	$ Vol.	Per Cent
Corporations	1,024	51	1,132	51	1,408	51	1,392	49	1,255	46	1,282	47	934	48
Com. Banks														
N. Y. City	292	14	394	18	530	19	498	18	512	19	494	18	418	21
Other	331	16	428	19	467	17	572	20	601	22	490	18	330	17
Subtotal	623	30	822	37	997	36	1,070	38	1,113	41	984	36	748	38
Fed. Reserve	130	6	49	2	59	2	114	4	102	4	159	6	96	5
Other	250	12	206	9	295	11	267	9	265	10	296	11	179	9
Total	2,028	100	2,210	100	2,759	100	2,843	100	2,734	100	2,722	100	1,957	100

1. Financing of positions in Government and Federal agency securities including securities held under repurchase agreements maturing in 16 days or more.

Source: Market Statistics Division, Federal Reserve Bank of New York

a contract to repurchase them on a specified date one or more days hence at a price which will compensate the corporation at an agreed-upon rate for the period. Most dealers cultivate corporate lenders since the rate the dealer pays on corporate repurchase agreements is usually somewhat lower than the rate he will have to pay on bank loans. Banks outside New York City are another major source, accounting for a shade under 20 per cent of dealer financing at rates that are usually quite close to the Federal funds rate. The New York City banks supply a similar proportion of dealer financing needs but at a rate fractionally higher than the Federal funds rate so that the City banks tend to finance the residual needs of the dealers. The Federal Reserve System has met between 2 and 6 per cent of nonbank dealer financing needs in recent years--usually at the discount rate--in the course of supplying reserves temporarily to the banking system. Assorted other lenders--Federal agencies, savings banks, foreign agency banks, state and local governments--financed 9 to 12 per cent of dealer positions.

There have been no major shifts among the sources of nonbank dealer financing over the last five years, or even over the past decade. The nonbank dealers have continued to rely heavily on the corporate lenders that they introduced to repurchase agreements in the first postwar decade. In recent years the share of corporate lenders in nonbank dealer financing has receded slightly, but the dollar volume of corporate lending has risen despite the availability of alternative outlets in the form of rapidly expanding volume of bank C/Ds, Treasury bills, finance paper, and corporate R/Ps with banks during the period. The share of dealer financing supplied by commercial banks tended to creep up a bit through 1964, but fell back in 1965 and the first half of 1966. This decline apparently reflects a tendency for bank lending rates to rise faster than the rates available from other sources as monetary restraint increased and Federal funds traded at an increasing premium above the discount rate. The situation reversed in early 1967 when monetary policy was expansive.

The nonbank dealers pay careful attention to the spread between interest earned and interest paid as well as the outlook for rate movements in managing their total positions. Indeed, a number of these dealers have made a large business of entering into repurchase agreements, chiefly with corporations, for a period of several weeks or even months in order to take advantage of an attractive spread between the interest rate earned on securities bought for the purpose and the rate paid to the corporation. These securities obviously do not become a part of the firm's trading account until the repurchase agreements mature, although dealers often have the right to substitute one issue for another under the agreement. In 1965, for example, the nonbank dealers held $846 million on average of Government securities financed under repurchase agreements maturing in 16 days or more--equal to almost one-third of their total positions. Nonfinancial corporations accounted for $800 million of these long-term repurchase agreements. If one excludes securities held under such agreements, the corporate share falls from about one-half of dealer financing to one-quarter while the bank share rises from 35-40 per cent to 50-60 per cent.

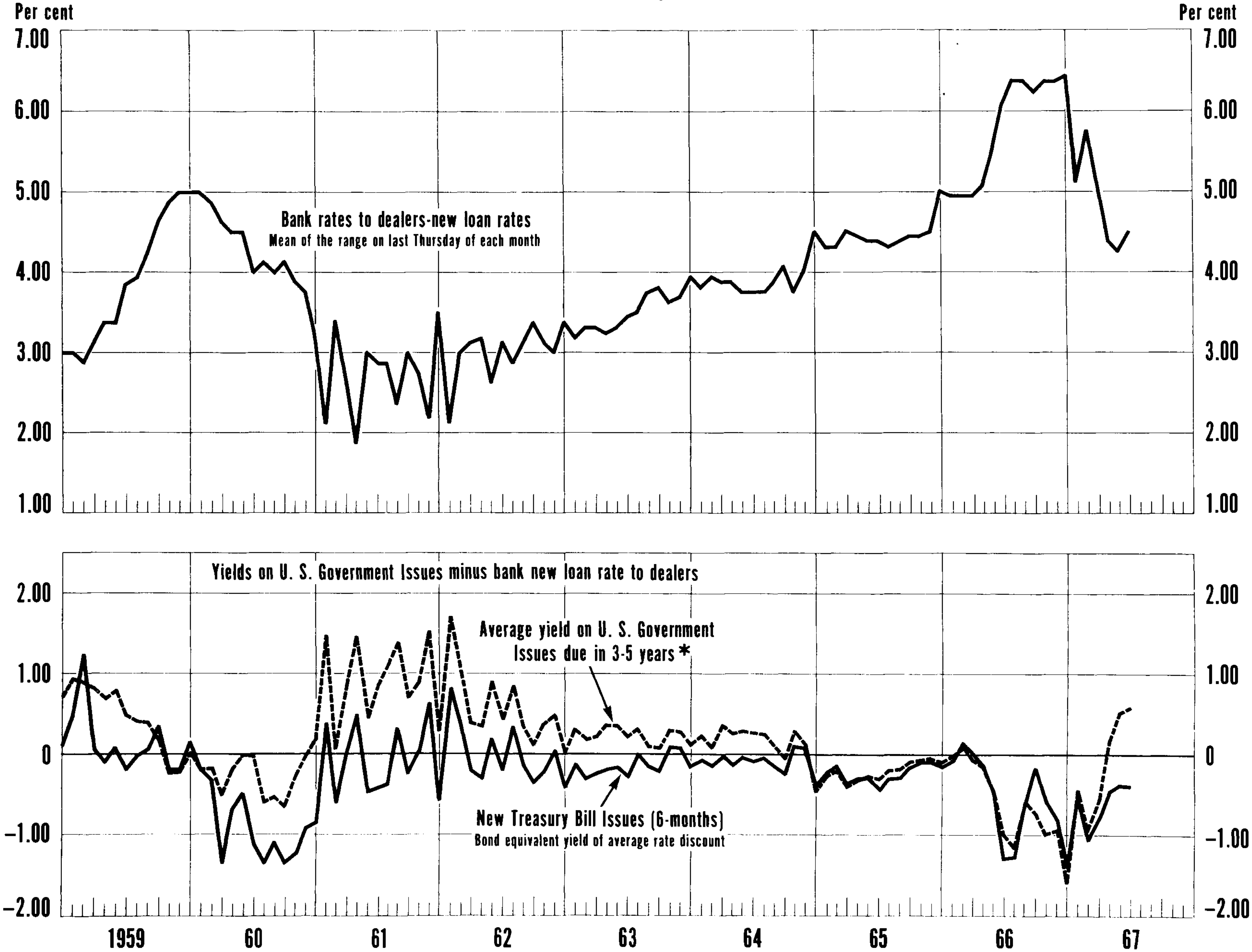
Four dealers have accounted for about nine-tenths of the securities held by the nonbank dealers under long-term repurchase agreements. Dealers who use long-term repurchase agreements extensively must weigh the market risks of owning securities for an extended period against the net earnings accruing to them from an advantageous rate spread and the potential for trading profits. Typically, such dealers have bought six-month Treasury bills in the weekly auction and placed them with corporations at a rate lower than that on the Treasury bill. If interest rates remain reasonably steady or decline, the market rate on the repurchased Treasury bills--by then an issue with 4 or 5 months to maturity--should be lower than the rate at which the dealer originally purchased the issue. Obviously, dealers must be quite astute in their assessment of the balance of risk and advantage. If Treasury bill rates should rise appreciably in the interval of the repurchase contract, the dealer can easily suffer a capital loss that will more than offset the net interest earned. Dealers conducting such operations have, in fact, suffered sizable losses on several occasions in recent years--for example, at the time of both the 1964 and 1965 increases in the Federal Reserve discount rate. The persistence of the practice suggests, however, that at least a few have been able to turn it to long-run advantage.

Dealer financing rates--and their relation to yields on Government securities--exert a shifting influence on dealers' portfolios over the cycle. As Chart I makes clear, dealer financing rates at the New York City banks tend to fall below Treasury bill rates and yields on other Government securities during periods when monetary policy is seeking aggressively to stimulate economic activity--for example in the first half of 1958 and in 1961. However, as economic expansion continues and interest rates rise, the interest rate spread tends to become unfavorable to the dealer first on three-month Treasury bills, then on longer Treasury bills, and finally on longer term Government securities as short-term interest rates rise more rapidly than longer rates. Increasingly, longer and longer maturities are required to cover financing costs until at some point--most recently, in 1966--the nonbank dealer cannot finance any Government security at the New York City banks except at a negative carry.

Once a booming economy and monetary restraint generate high interest rates, dealer financing tends to become a problem that interferes with the smooth and orderly functioning of the market. In addition to the risks of capital loss, dealers have every incentive to keep their portfolios low when their residual financing at the New York City banks involves a sizable interest rate penalty.

Chart I

COST OF NONBANK DEALER FINANCING AT NEW YORK CITY BANKS COMPARED TO YIELDS ON U. S. GOVERNMENT SECURITIES DECEMBER 1958 TO JUNE 1967



* Board of Governors of the Federal Reserve System.

Moreover, the banks become less reliable as a source of financing, diverting bank resources to business and other loans. The portfolios of the nonbank dealers fell sharply in 1966--to $2.1 billion of Government and Federal agency securities in the first half from $3.0 billion in the year earlier period. Their average borrowing fell even further as dealers sought aggressively to sell out Treasury bills and other securities acquired from the Treasury before payment for them was required.

b. The bank dealers

Financing a position poses different kinds of problems for most dealer departments of commercial banks than for the nonbank dealer. Basically, the banks must find the resources employed in dealer operations as well as those employed in other bank activities. Early in the economic upswing most dealer departments had no financing problems as long as they stayed within the limits imposed by top management on the scope of their operations. The dealer department had only to be concerned about the rate it was charged internally for the use of bank funds--frequently the Federal funds rate or an internal cost-of-money rate. This internal accounting rate was very important, of course, to the department's profitability and hence, a significant influence on operations, but the bank dealer did not have to search out funds daily like the nonbank dealer. The bank's money desk had the day-to-day job of dealing with shifts in the bank's reserve position whether the change came from dealer operations, other bank activities, or external factors.

In recent years, however, financing has come to play a much more important part in determining dealer department operations than the foregoing would suggest. As credit demands pressed increasingly on available bank resources, top management increasingly tended to regard dealer operations in the light of the bank's over-all resource allocation and liquidity reserves. The scope allowed dealer departments for varying the size of their portfolios on the basis of market judgements was curtailed and the departments have become much more intimately involved in day-to-day financing.

The bank dealers followed in the footsteps of their nonbank colleagues in promoting repurchase agreements with nonfinancial corporations. Initially banks provided a short-term investment outlet to corporate customers as an accommodation--one that was facilitated by the establishment in a number of banks of facilities for advising on the placement of corporate funds in money market instruments. As time passed, corporate repurchase agreements were gradually used on an expanding scale for augmenting bank resources. The dealer banks appear to have been most active in this development but other banks have also resorted to repurchase agreements on a sizable scale. Unfortunately, several dealer departments reporting to the Federal Reserve Bank of New York do not report their use of repurchase agreements as some banks do not relate their use of such agreements directly to their dealer departments. Other data, however, show that the four dealer banks in New York City in December 1965 had $465 million on a daily average basis in repurchase agreements from corporations for more than one day.[1] At the time, the funds used by the four dealer departments averaged $532 million.

A few dealer departments went beyond the use of repurchase agreements to cover their financing needs and used due bills to raise money for their banks.[2] Due bills arise when a dealer sells short a particular security to a customer and

1. What portion of these contracts is related directly to the Government securities operation is unknown.

2. Effective September 1, 1966, the Board of Governors of the Federal Reserve System amended its regulations to provide in effect that due bills issued by a bank "...principally as a means of obtaining funds to be used in its banking business..." (as opposed to simply facilitating a security transaction) were to be classified as deposits, subject to reserve requirements and the rules governing payment of interest.

the customer makes payment and accepts a written obligation to deliver--a due bill--in lieu of the security itself.[1] Legitimately used, a due bill enables a dealer to meet a customer's need for a temporarily unavailable issue until the dealer can make delivery, usually within a few days. Prior to September 1966, a few dealer departments issued unsecured due bills in considerable volume for short-dated Treasury bills selling at low rates--presumably as a means of raising cheap money for their banks. The actual bills were often never bought in to make delivery prior to the expiration of the contract. Such a practice would appear to represent an undesirable distortion of normal market practice, involving a net addition to the effective market supply of Treasury bills outstanding to the benefit of the issuer of due bills rather than to the benefit of the Treasury.

c. Dealer financing and market performance

The changes that have occurred in dealer financing patterns from 1961 to date appear related chiefly to the general growth of credit demands in the course of the present expansion. As in the past business expansions, the nonbank dealers experienced progressive difficulty in financing their positions at a positive carry as the economy approached full employment levels. The problem became acute in 1966 when the nonbank dealers could not finance any securities at a positive carry. Moreover they frequently encountered reluctance on the part of New York City banks to handle their residual financing at even the high posted rates. The bank dealers were all exposed to great pressure to hold inventories down and/or to expand the use of R/Ps and due bills in order to free the bank resources employed in dealer operations for commercial loans and other bank uses.

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1. Some customers will accept due bills secured by Government securities from a nonbank dealer, but more will take unsecured due bills from banks, deeming the bank itself a sufficient guarantor.

The gradual effect of credit restraint on the dealer financing mechanism contributed to a deterioration in the capacity of the dealer market to buy and sell Government securities in volume at prices that respond in an orderly fashion to supply-demand forces. Dealers found their market judgements overruled by the necessity of avoiding losses in carrying securities. Not only did dealer portfolios in 1966 shrink to the point of not being large enough in many issues of Treasury bills and coupon securities to serve as effective buffers to the movement of interest rates. The dealers also became a potent force for short-term rate instability as the negative carry caused them to press sales aggressively of securities acquired from customers or the Treasury to avoid carrying inventory. The financing problem added to the basic market difficulties caused by the burgeoning credit demands of a boom economy and the uncertainties stemming from the mix between monetary and fiscal policies.

7. Structural Change and Market Performance

The interaction of intensified dealer competition and an environment of comparatively steady economic growth from 1961 through mid-1965 fostered a Government securities market that accommodated increasingly large transactions in that period with only modest movements in interest rates. Investors and the Federal Reserve System found the dealer market an increasingly efficient mechanism for carrying out investment decisions and management responsibilities with distinction. It drew heavily on the intelligence supplied by the competitive dealer community as to the investment climate and relied to an important degree on the expanding capacity of that community to underwrite new Treasury issues. In mid-1965 it almost appeared that no one had serious cause for complaint about the functioning of the market--no one, that is, except the dealers who complained that their poor profit experience in the 1960's would lead to a withdrawal of capital and personnel from the indsutry.

The performance of the Government securities market in the year or so after mid-1965 brought into question whether the structural changes at work in earlier years had really added as much to the market's ability to function well as surface appearances had previously suggested. In an economy becoming overheated, interest rates not only rose sharply but also fluctuated widely as expectations swung back and forth. Investors and the Federal Reserve alike encountered a marked shrinkage in the size of transactions dealers were willing to undertake--even at prices far away from those currently quoted. The capacity of even the Treasury bill market to effect liquidity adjustments was impaired by the penalty costs of carrying first, short-dated Treasury bills and then longer maturities. At times the bond market was so unsettled as to make it difficult for investors to execute sales of any magnitude. In this environment the Treasury found market prices a less reliable guide to pricing its new issues, and the dealers found a much less receptive market for such issues.

The lessons of this experience lie in the structural characteristics of the market's response to the challenge of rapid change, not in the direction of the response. One should not be surprised after all that a marked increase in uncertainty and risk--and a preponderance of customers wishing to sell--would bring retrenchment and caution in a group as sensitive to risk as the primary dealers are. What is important is that at best only a half-dozen of the 20 primary dealers continued to make effective markets throughout the Treasury list--even on a reduced scale--from mid-1965 through most of 1966. Frequently, no more than two or three dealers were willing to make firm bids in any size to customers at any price near quoted market levels for intermediate- and long-term Treasury bonds.

The behavior of the market in 1965-66 has made clear that an orderly secondary market depends very heavily on the performance of a small core of key dealers. Other dealers withdraw from making real markets when uncertainties in the economy or market environment reach the point that they cannot depend on unwinding customer transactions quickly with the core dealers. The inner core of the dealer community included from three to five nonbank dealer firms at any one time and one or two bank dealers. A few other dealers--chiefly bank dealers--made reasonably good markets in Treasury bills throughout the list, and most dealers continued to be active in the latest issues. A large number of banks and corporations, which tended to give the market resiliency in better times through their trading activity, largely withdrew.

Further insight into the structure of the market and the change in its functioning between 1965 and the first half of 1966 can be gained by a review of dealer transactions with customers during the two periods. In the Treasury bill market the top six dealers (the top third) play a key market role, but all dealers do a fairly broad business. Thus, in 1965 the top six--three bank and three nonbank--accounted for 59 per cent of all dealer activity in Treasury bills with customers. Even more indicative of their role as makers of markets throughout the full Treasury bill list was the fact that three-quarters of their total trading was with customers and only one-quarter with other primary dealers in Government securities. (See Table IX, column 3.) In other words, the trading of these dealers with customers in Treasury bills was about three times as large as trading with other dealers. The middle third of dealers traded with customers about twice as actively as with other dealers and in 1965 the lower third relied almost as much on the dealer market as a whole to unwind or consummate their transactions as on customers or on their own positioning of securities. Nonetheless, the large participation of all dealers in the market for Treasury bills is evident.

TABLE IX

DEALER TRANSACTIONS WITH CUSTOMERS IN TREASURY BILLS
(i.e. excluding Inter-Dealer Trading)

	1965			1st half 1966		
	$ millions (1)	As per cent total dealer activity with customers (2)	As per cent gross activity[2] (3)	$ millions (4)	As per cent total dealer activity with customers (5)	As per cent gross activity[2] (6)
Top three	375	38	78	434	39	77
Next three	210	21	74	243	23	70
Upper third[1]	585	59	77	677	62	77
Middle third	335	34	69	330	30	73
Lower third	75	7	45	91	8	58
	995	100	71	1,098	100	72

1. Six, including top three.
2. Activity of group with customers as per cent of total activity (including inter-dealer trading).

Source: Market Statistics Division, Federal Reserve Bank of New York

The first half of 1966 brought a considerable pickup in activity with customers amidst a background of bill rate swings that were considerably more pronounced and abrupt than in earlier years. All dealer groups shared to some extent in this increase, but the top six dealers increased their share of customer activity to 62 per cent of the total while the lower two-thirds lost ground. Even so, the share of the top six remained well below the 70 per cent level that had prevailed in 1960.

In the market for Treasury coupon securities maturing in less than five years, the share of the top six dealers in activity with customers rises appreciably. These dealers--two bank and four nonbank--accounted for 68 per cent of such activity in 1965. The role of the top three--all nonbank dealers--becomes much more important. (See Table X, column 3.) Three-quarters of their total business was with customers, indicating their very important role as market makers. The remaining group of dealers traded with customers only slightly more, or slightly less, than with other dealers.

In the first half of 1966, trading activity with customers picked up by more than 20 per cent. The top three dealers increased their share of activity somewhat, although trading by all dealer groups rose. The top six dealers--five nonbank and one bank--increased the proportion of their total activity that was carried on with customers. In contrast both the middle and lower thirds of the dealer community became more dependent on other dealers in the execution of transactions. Despite the first half gain in their share of activity with customers, the top three and the top six in total customer activity remained below the 1960 level.

In the market for Treasury coupon issues maturing in over 5 years, the importance of the top three dealers is even more pronounced. This group--all nonbank dealers--accounted for 52 per cent of all activity with customers in 1965.

TABLE X

DEALER TRANSACTIONS WITH CUSTOMERS IN TREASURY COUPON SECURITIES MATURING WITHIN 5 YEARS
(i.e. excluding Inter-Dealer Trading)

	1965			1st half 1966		
	$ millions (1)	As per cent total dealer activity with customers (2)	As per cent gross activity[2] (3)	$ millions (4)	As per cent total dealer activity with customers (5)	As per cent gross activity[2] (6)
Top three	83	47	76	105	48	78
Next three	38	21	55	47	22	54
Top third[1]	121	68	68	152	70	68
Middle third	47	26	57	50	23	54
Lower third	10	6	46	14	7	40
	178	100	63	216	100	62

1. Six, including top three.
2. Activity of group with customers as per cent of total activity (including inter-dealer trading).

Source: Market Statistics Division, Federal Reserve Bank of New York

In this maturity category the second three--one bank and two nonbank--account for an additional 18 per cent of customer activity. However, only the dealings of the top three with customers approached three times that with other dealers. For the other dealer groupings, activity with customers was about equal to that with other dealers.

In the first half of 1966 trading with customers by the top three firms rose 30 per cent and their share in such trading rose to 63 per cent. (See Table XI.) Indeed, two dealers accounted for about half of such activity. The share of the top six dealers--one bank and five nonbank--rose from 70 to 81 per cent, and activity with customers dropped back sharply for the middle and lower third of the dealers. The share of the top three dealers--and the top six--exceeded in the first half of 1966 the share achieved in any year in the 1960-65 interval. Hence, it would appear that the growth in the number of dealers over 1960-65 did not add to the basic strength of the market in this area or its capacity to function under stress.

As noted earlier, major Treasury financings also depend importantly on the distribution and underwriting activity of a small group of dealers. The top six--typically five nonbank dealers and one bank dealer--accounted for two-thirds or more of all subscriptions for the long option in the 1961-65 exchange refundings. The top three and top six accounted for an even larger share of the net sales of when-issued securities before the close of the books on the refunding, the crucial period in determining the degree of success of the operation. Dealer activity was particularly important in the advance refundings, in which dealers turned in from 16 to 40 per cent of the issues exchanged after mid-1962. Over the interval from 1961 to mid-1965 the non-core dealers did increase appreciably the size of the net positions they were willing to take in Treasury financings but their distributive potential did not appear to keep pace. After

TABLE XI

DEALER TRANSACTIONS WITH CUSTOMERS IN TREASURY COUPON SECURITIES MATURING IN OVER 5 YEARS
(i.e. excluding Inter-Dealer Trading)

	1965			1st half 1966		
	$ millions (1)	As per cent total dealer activity with customers (2)	As per cent gross activity[2] (3)	$ millions (4)	As per cent total dealer activity with customers (5)	As per cent gross activity[2] (6)
Top three	50	52	76	65	63	82
Next three	17	18	52	18	18	49
Upper third[1]	67	70	67	83	81	72
Middle third	22	23	53	16	15	47
Lower third	7	7	47	4	4	44
	96	100	62	103	100	62

1. Six, including top three.
2. Activity of group with customers as per cent of total activity (including inter-dealer trading).

Source: Market Statistics Division, Federal Reserve Bank of New York

mid-1965 the willingness of all dealers to take on an underwriting commitment diminished but several of the major dealers continued to underwrite Treasury offerings on a sizable scale.

The 1961-66 behavior of the dealer market reaffirms the importance of a small number of key dealers to the performance of that market. The bank dealers performed reasonably well throughout as dealers in Treasury bills. However, the larger nonbank dealers continued to be the dominant factor in the market for Treasury coupon securities. Thus, a legitimate concern exists whether the more rapid growth of bank dealer activity over the 1961-66 period poses a danger to the future performance of the dealer market. One cannot come to grips with that concern without a careful appraisal of the extent to which the nonbank dealers find profitability over the entire cycle adequate to justify their investment of capital and personnel. The evidence of the first half of 1966 suggests that those firms that really performed as dealers have increased their market shares and probably their long-run profit potential. Customer loyalty is built on the basis of experiences in just such a period. Trading profits appear to have expanded greatly in the 1966-67 interval when interest rates moved lower and there is some presumption that the major firms have benefited therefrom.