# economic review

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IN THIS ISSUE



FEDERAL RESERVE BANK OF CLEVELAND

# REPURCHASE AGREEMENTS

THE INCREASINGLY complex and competitive nature of the central money market has encouraged the development of specialized money market instruments. One such instrument is the repurchase agreement, which is designed to fill the specific needs of a limited number and type of borrowers. These borrowers, principally dealers in Government securities, play a very important role in the money market.[1]

A repurchase agreement involves the sale of securities and a simultaneous commitment by the seller to repurchase the securities at a later date. Such agreements are used continuously by dealers in Government securities to help finance their operations. To better understand the need for and development of the repurchase agreement, it is first necessary to examine the environment in which it originated.

[1] Government securities, as used in this article, refers to the marketable obligations of the U. S. Government.

## THE DEALER MARKET

A repurchase agreement, which is used as a borrowing tool, is intimately connected with the functioning of the secondary market for U. S. Government securities. It is particularly significant for the small group of dealers that comprises the core of this market.

The volume of marketable U. S. Government obligations outstanding has expanded nearly five-fold since the start of World War II. While the major part of the growth occurred during the war, the volume of marketable Federal debt, after retreating moderately through 1951, increased further to a record level of nearly $208 billion at yearend 1963. To facilitate the orderly transfer of securities, an active and viable secondary market is indispensable. A network of dealers provides such a market for Government securities. At the present time there are about nineteen major dealers making primary markets in

Government securities in the nation, six of which are commercial banks. The bulk of all transactions in Government securities is executed through the facilities provided by these dealers. In the average week during 1963, Government securities dealers handled transactions in securities with an aggregate par value of nearly $1.75 billion.

The dealers actually "make the market" by standing ready to quote buying and selling prices for all Government securities traded. In making a market dealers act as principals, buying and selling securities for their own account.

Most transactions in Government securities take place in the over-the-counter market as opposed to an organized market such as the New York Stock Exchange. Buyers and sellers of U. S. Government securities conduct their transactions through three principal types of intermediaries: (1) Government securities dealers, (2) commercial banks, and (3) securities brokers.

While transactions can be executed through any of these professional groups, virtually all final purchases and sales are handled by the nucleus of dealer specialists. Dealers transact business directly with customers and with other dealers and intermediaries such as commercial banks and securities brokers. Prices are determined by negotiation between the dealers and their customers, or other intermediaries acting as agents for their customers. Negotiation, which involves the matching of dealer bid and offering prices with the prices buyers and sellers wish to receive, leads to transactions on terms that are mutually satisfactory. Prices change continuously as a result of the constantly shifting demand and supply forces that prevail in the market.

Competition among the dealers is vital to the maintenance of representative prices, but it also gives assurance of reasonably narrow spreads in the bid and offering prices quoted by the dealers. While spreads are rather narrow, they provide the principal opportunity for dealer profits. Because dealers act as principals in transactions, profits depend in part upon the dealer's ability to maintain a favorable spread between the cost of inventory and the price at which securities are sold. The considerable degree of risk involved in maintaining an active and continuous market chiefly stems from the necessity that dealers position a substantial volume of securities, the value of which is subject to market fluctuations.

In the process of providing an active market in Government securities, the dealers accumulate inventories during periods when the supply of securities for sale exceeds customer demand at the prevailing price level, or when the dealers' appraisal of the market indicates that rising prices on securities may enable them to turn a profit on their inventory position. These positions may, in turn, be reduced in periods when customer demand for securities increases, or when the dealers' market appraisal indicates that lower prices are in prospect. Inventory positions will fluctuate, therefore, depending upon demand and supply conditions and the market outlook.

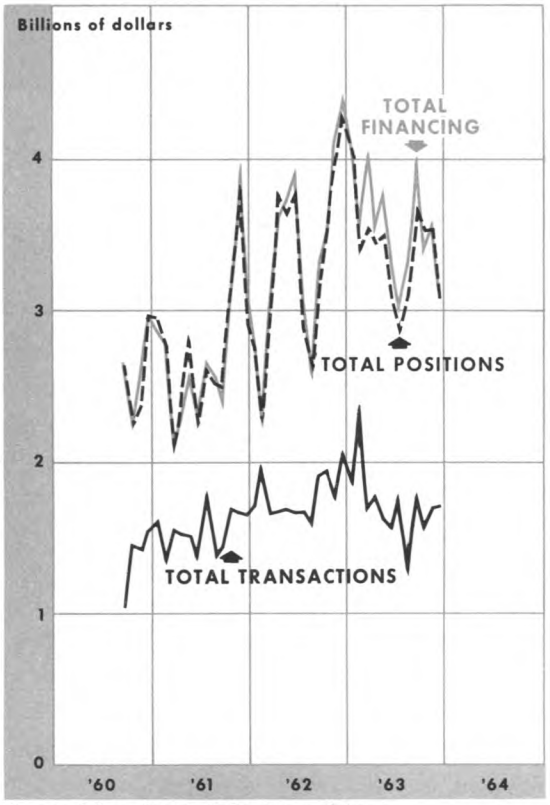
## NEED FOR BORROWED FUNDS

Because of the need to carry a sizable inventory of Government securities, the availability and cost of borrowed funds to

## U. S. GOVT. SECURITIES DEALERS

### 1. TRANSACTIONS, POSITIONS, AND FINANCING

Monthly Averages of Daily Figures




Source of data: Board of Governors of the Federal Reserve System

help finance an inventory position is crucial to the successful performance of the dealer function, so far as nonbank dealers are concerned; bank dealer departments use mainly the bank's own funds. Permanent dealer capital provides an equity cushion; however, it constitutes only a small part of the total working capital requirements of the dealer. The bulk of dealer funds is derived from short-term borrowing.

Chart 1 illustrates the need for borrowed funds more clearly, showing dealer transactions, inventory positions and total financing from September 1960 to yearend 1963. The figures are averages of daily figures, plotted monthly.[2] In the 1960-63 period the volume of transactions showed substantial, although irregular, growth. The average daily volume of transactions during 1963 was $1.73 billion, compared with an average daily volume of $1.55 billion during 1961. This represents an increase of nearly 12 percent in the average daily volume of transactions during the period. Transactions in issues maturing in less than one year, which normally comprise about three-quarters of total dealer transactions, accounted for the largest share of the total increase.

As indicated in Chart 1, dealer inventory positions, although much larger, tend to move with the volume of transactions.[3] In the 1960-63 period, dealer inventory positions were on average about twice as large as the average

[2] Data for transactions, positions, and financing are reported daily to the Federal Reserve Bank of New York by the major Government securities dealers. Averages of daily figures are released weekly by that bank and published monthly in the *Federal Reserve Bulletin*. The statistics are available only since September 1960. Dealer transactions include the par value of securities purchased or sold in the secondary market, but exclude allotments from and redemptions by the Treasury or Federal agencies and temporary transfers of securities under repurchase contracts.

[3] Positions figures include the par value of holdings, reported on a commitment basis. This means that securities are counted as part of the dealer's position on the day the dealer agrees to purchase them, even though delivery has not been made. Conversely, securities are deducted from positions as soon as a commitment to sell has been made. The figures include all securities that

daily volume of transactions. Dealer inventory positions have expanded to accommodate a rising volume of transactions, as well as market expectations. The average daily level of dealer positions during 1963 was $3.41 billion, or about one-fourth higher than the daily average figure of $2.75 billion during 1961. More than three-fourths of the total increase was centered in positions in short-term issues.

As might be expected, an increase in inventory positions has been accompanied by a corresponding increase in the use of borrowed funds. Because dealers borrow primarily to finance their inventory of securities, it is not surprising that the financing pattern in Chart 1 is nearly identical to the positions pattern.[4] The levels and movements of the two series differ principally because positions are reported on a commitment basis. When a dealer makes a commitment to purchase securities, the purchase is reflected in his position immediately, although the purchase will not have to be financed until the time of delivery, which may be a few days or even weeks later. Conversely, sales of securities reduce their positions immediately, but they must continue to finance the securities until the delivery date.

During 1963 the average daily volume of dealer borrowing was $3.56 billion, or nearly one-third higher than the average daily figure during 1961.

The foregoing shows the magnitude of and the growth in the operations of Government securities dealers and illustrates the way in which dealer transactions, positions, and financing are closely related. If the dealers are to perform their market function, the availability of financing is important. Without access to borrowed funds, dealers would not be able to maintain an orderly and active market for Government securities.

## REPURCHASE TRANSACTIONS

Although small in numbers, Government securities dealers are one of the most important users of short-term funds in the economy. To satisfy their financing needs, nonbank dealers have resorted to a variety of sources of funds, principal among which are nonfinancial business corporations. In this connection, dealers have developed and perfected borrowing techniques, the most important of which is the repurchase agreement. Dealer access to temporarily idle corporate funds is closely tied to the development and use of repurchase agreements because dealers are able to tailor these agreements to the specific needs of corporate lenders.

dealers have sold under repurchase agreements, but exclude those that dealers have acquired under agreements to resell at a future date (reverse repurchase agreements). "Matched agreements", under which a dealer has outstanding repurchase and reverse repurchase agreement contracts that are virtually the same in amount and have the same maturity dates, are also excluded.

[4] The financing data include the total amount of funds obtained by nonbank dealers against U. S. Government and Federal agency securities through either collateral loans or repurchase agreements and, for bank dealers, the total amount of funds allotted by the bank to the dealer department through repurchase agreements. The figures are exclusive of any funds made available through "day" loans, that is, loans extended during the day and repaid by the close of the same day.

Although repurchase agreements (commonly referred to as RPs) are a special type of money market instrument, they are relatively uncomplicated and lend themselves easily to the needs of dealers in Government securities. (While the technique is adaptable to the borrowing needs of any group dealing in debt obligations, e.g., municipal securities dealers, this article discusses only the use by dealers in U. S. Government securities.)

There are three general types of repurchase transactions. Transactions differ principally in the length of time for which the agreement is extended, with most agreements being short-term (extending for only a few days). An *overnight* transaction, which is the shortest in duration, involves the purchase of Government securities from a dealer for a period of one business day. Such a transaction is contingent upon the willingness of the dealer to enter into an agreement to repurchase the securities the following day. To provide an interest return to the lender, the repurchase price exceeds the original sale price. Overnight transactions may be renewed each day, as long as dealer and purchaser agree.

An *open repurchase transaction* is essentially the same as an overnight RP except that the agreement usually remains in effect until either of the two parties elects to terminate it. Such agreements avoid the inconvenience of renewing overnight transactions daily when both parties have a continuing need for this type of accommodation. In either case the dealer has satisfied his need for funds.

A *fixed-date repurchase transaction,* which usually covers longer periods of time, binds both parties to the agreement for a mutually agreeable period. A specified future delivery date is the distinguishing feature of this type of transaction. In addition to providing financing to the dealer, a fixed-date repurchase transaction allows the dealer to accommodate a customer's demand for a Treasury issue with a specific maturity date that is either not available in the secondary market or is in short supply. For example, a corporation with a temporary excess of cash that will be needed to meet a near-term dividend or tax payment on a certain future date, could employ excess funds in a repurchase agreement that expires on or near the specified dividend or tax payment date.

A less commonly employed variation of these standard repurchase transactions is the *reverse repurchase agreement* or "sell back". In this case, a dealer purchases securities from a seller with the stipulation that he will resell the securities to the original owner. By use of this technique, the dealer is able to borrow securities that he needs by supplying short-term funds to a customer. It is not unusual, however, for a dealer to obtain funds to finance a customer by entering into another repurchase contract for a like amount of securities. Thus, the dealer acts as a financial intermediary in such transactions.

In virtually all types of repurchase transactions, ownership of the securities involved is transferred physically from seller to buyer with the seller receiving payment in return. Payment is generally made in Federal funds, which are immediately available as compared with the delayed availability of clearinghouse funds. When dealer RPs are consummated with purchasers in distant cities, the

securities are usually transferred to a bank in New York City as custodial agent for the purchaser. Nonfinancial corporations usually avail themselves of the services of a commercial bank in arranging transfers of Federal funds to dealers under repurchase contracts. Upon termination of a repurchase agreement the procedure is reversed, with the dealer receiving the securities and, in turn, remitting funds to the lender—including an amount to cover the agreed upon interest charge. Because repurchase agreements provide for the physical transfer of securities, promissory notes are not involved. RPs differ in this respect from loans that are collateralized by Government securities.

While current data on the rate of interest paid by dealers in repurchase transactions are not systematically available, the rate should be consistently competitive with interest rates on alternative sources of short-term funds.

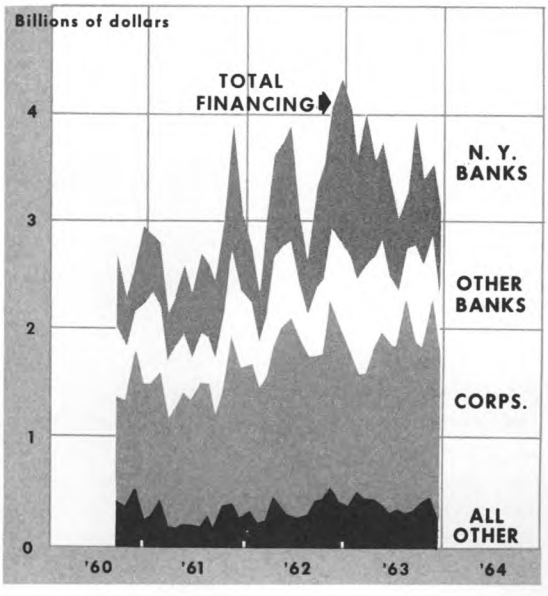
Nonbank securities dealers enter into repurchase agreements with a variety of lenders, most frequently nonfinancial corporations, commercial banks, the Federal Reserve Bank of New York (acting on behalf of the Federal Reserve System), the various Federal Home Loan banks, and state and local governments. As an indication of the relative importance of these various sources of dealer funds, Chart 2 shows total dealer financing by source of funds from September 1960 through the end of 1963. As indicated by the chart, commercial banks and corporations supply the bulk of total dealer financing. During the 1960-63 period, these sources accounted for an average of nearly nine-tenths of total dealer financing.

The percentage distribution of dealer financing by source of funds is presented in Table I, which shows the average distribution of financing for the same period. Data for New York City banks are shown separately because these banks are not major suppliers of dealer financing under repurchase contracts. New York City banks prefer instead to employ funds at a higher rate of interest in collateral loans.[5] As indicated in Table I, however, New York City banks have been supplying an increasing share of total dealer financing in recent years. During the past three years these banks have become increasingly competitive lenders to Government securities dealers. Available data do

**U. S. GOVT. SECURITIES DEALERS**

**2. FINANCING BY SOURCE**

Monthly Averages of Daily Figures




Source of data: Board of Governors of the Federal Reserve System

**TABLE I**

**U. S. Government Securities Dealers**
**Percentage Distribution of Total Financing**
**By Source of Funds***

| Year | N. Y. City Banks | Other Banks | Corporations | All Other | Total |
|---|---|---|---|---|---|
| 1960 (Last 4 months) . . . . | 21.5% | 22.4% | 41.4% | 14.7% | 100.0% |
| 1961 . . . . . | 24.8 | 22.5 | 43.2 | 9.5 | 100.0 |
| 1962 . . . . . | 26.4 | 19.5 | 43.5 | 10.6 | 100.0 |
| 1963 . . . . . | 26.4 | 21.5 | 41.2 | 10.9 | 100.0 |
| Average 1961-63 . . . . . | 25.9 | 21.2 | 42.6 | 10.3 | 100.0 |

* Percentages derived from average of daily figures for each period.
Source: Board of Governors of the Federal Reserve System

not indicate, however, that the New York City banks have become a significant lender in the RP market.

The limited data available indicate that nonfinancial corporations are the principal sources of funds for repurchase agreements. Because demand deposit balances in commercial banks earn no interest, many companies in recent years have employed such balances in ways that permit a more efficient use of cash. At the same time, corporate treasurers have sought new methods of employing excess cash reserves. RPs serve as a convenient and relatively riskless investment medium for such funds.

The repurchase agreement specifies both the price at which a corporation buys the securities and the price at which the dealer repurchases them. Therefore, the rate of interest is determined in advance and the corporate lender is virtually insulated against market risk. The borrowing dealer, in turn, assumes all of the market risk, the degree of which increases with the duration of the contract and the maturity of the underlying securities. In return for accepting this risk, the dealer pays relatively less for the borrowed funds.

While commercial banks may utilize repurchase agreements in a more limited way than corporations, banks outside New York City have found RPs a convenient and profitable manner in which to employ excess reserves. One reason may be that the rate on RPs often exceeds the rate in the Federal funds market (an alternative outlet for idle bank reserves). In addition, some banks may prefer the added safety associated with an RP as opposed to an unsecured sale of Federal funds.

[5] A collateral loan to a dealer is secured by U. S. Government obligations but, unlike an RP transaction, ownership of the securities does not change hands. Since dealer loan demands tend to be largest when the reserves of New York banks are under the most pressure, the banks are reluctant to offer rates to dealers that may be as low as can be obtained elsewhere. In addition, because the bulk of dealer funds is committed to inventory positions, their average deposit balances are relatively small and provide little bargaining power with the banks.

The Federal Reserve Bank of New York also makes repurchase agreements. In contrast to RPs with corporations and commercial banks, RPs involving the Federal Reserve Bank are usually entered into at the initiative of the Bank, although dealers may provide some impetus through inquiries about the possibility of making such agreements. Although the Federal Reserve utilizes repurchase agreements primarily as a supplemental tool for the conducting of open market operations, such transactions have the effect of supplying financing to Government securities dealers. RPs with the Federal Reserve are made for maturities of no longer than fifteen days and usually involve securities with a maturity of no more than 24 months. The rate of interest is usually equal to the discount rate of the Federal Reserve Bank of New York or the average issuing rate on the most recent issue of 3-month Treasury bills, whichever is the lower. During 1963, the average daily volume of Federal Reserve holdings of U. S. Government securities under repurchase agreement was $114 million, representing only about 3 percent of the average daily volume of total dealer financing. It is evident, therefore, that dealers do not rely on the Federal Reserve as an important supplier of financing. In periods when funds are not readily available elsewhere, however, RPs purchased by the Federal Reserve Bank of New York can provide an important part of the dealers' residual borrowing requirements.

Other sources of dealer financing via repurchase transactions consist of Federal Home Loan Banks, savings banks, and state and local governments. These other sources, however, account for a relatively small share of total RP transactions.

## MARKET IMPORTANCE OF RPs

Charts 1 and 2 are helpful in appraising the magnitude of the credit needs of Government securities dealers and the principal sources of credit. More specific data, however, are essential to an evaluation of the relative importance of repurchase agreements in the total supply of credit. The best available statistics, which are presented in Chart 3, cover a relatively brief period of time—from October 30, 1957 through December 31, 1958.[6]

The information presented in the charts may be unrepresentative due to the inordinate amount of speculative buying that existed in the Government securities market during the first half of 1958 and the liquidation of these speculative positions during the following months of declining prices and rising interest rates. The data are, nevertheless, useful in gaining an approximation of the importance of RPs as a source of financing.

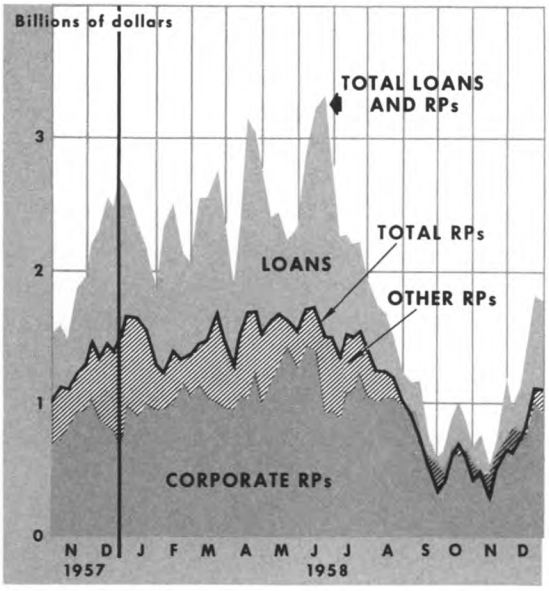
During the period covered in the chart, repurchase agreements accounted for an average of nearly 64 percent of total dealer financing. While the volume of RPs outstanding varied widely from week to week (from a high of $1,729 million to a low of $278 million), RPs represented a relatively constant share of total financing during the period. In only one week during the entire period did repurchase agreements account for less than one-half of total dealer borrowing.

[6] Data in the chart are from the *Treasury-Federal Reserve Study of the Government Securities Market*, Part II, "Factual Review for 1958", pp. 142-43. The figures were derived from a survey of 12 nonbank dealers and 5 bank dealers. Outstanding loans and repurchase agreements were reported as of each Wednesday from October 30, 1957 through December 31, 1958.

## U. S. GOVT. SECURITIES DEALERS

### 3. LOANS AND REPURCHASE AGREEMENTS

Figures plotted as of Wednesday each week for twelve nonbank and five bank dealers




Source of data: *Treasury-Federal Reserve Study of the Government Securities Market*

Volatility was evident in the volume of total financing during the period due principally to wide swings in the volume of loans, particularly those from New York City banks, which ranged from a high of $1,820 million to a low of $201 million. As a share of total dealer financing, loans ranged from a high of 55 percent to a low of 16 percent. When dealer financing needs were largest, as during the first seven months of 1958, loan volume expanded sharply to accommodate the increased demand for funds. As the need for financing diminished, loan volume was contracted more sharply and more quickly than the volume of RPs. This pattern seems to confirm the hypothesis that dealers utilize bank borrowing for unexpectedly large needs while making more consistent use of repurchase transactions as a source of funds.

In Chart 3, it should be noted that repurchase agreements with nonfinancial corporations accounted for the bulk of total RPs outstanding during the period.[7] The total volume of funds derived from nonfinancial corporations during the period was in the form of repurchase agreements. Excluding the last four months of 1958, RPs held by nonfinancial corporations accounted for an average of nearly 72 percent of the total outstanding.

RPs with all lenders other than nonfinancial corporations accounted for little more than one-quarter of total RPs outstanding on average during the period. RPs placed with banks outside New York City represented an average of 53 percent of the funds derived from these commercial banks. Agreements reported with New York City banks were a consistently negligible proportion of funds derived from these banks. Repurchase transactions with all other lenders represented an average of 48 percent of funds borrowed from these sources.

If it can be assumed that the financing pattern evident in Chart 3 is representative of the pattern that has existed since that time, it would mean that a growing utilization of repurchase agreements by Government securities dealers has accompanied the increase in the volume of total dealer financing, as outlined in Chart 2. It can be safely assumed

[7] Corporate RPs actually exceeded the volume of total RPs periodically during the latter part of 1958, pointing up the offsetting effect of resale agreements with commercial banks during those periods.

that virtually all of the financing supplied by corporations during the period from September 1960 through the end of 1963 was in the form of RPs. Based on the results of the 1957-58 market study, it may also be assumed that roughly 50 percent of total financing derived from banks outside New York City and other nonbank sources was obtained through repurchase transactions. Therefore, the volume of RPs outstanding has expanded considerably in the 1960-63 period, and continues to account for the largest proportion of total dealer financing.

## COST ADVANTAGE

The growing use of repurchase agreements is the result of a number of factors, chief among which is the cost. Because the dealer function involves the financing of substantial inventory positions, the cost of credit is a crucial factor in determining profitability of dealer operations. Available data suggest that RPs provide funds at a markedly lower cost than alternative sources.

Table II, which presents a sample comparison of the rates that dealers paid for various types of funds in the 1948-58 period, points up the cost advantage of RPs.[8] While coverage is limited to the responses of only a few dealers, the data should be representative of the experience of all participants in the highly competitive Government securities market. The absence of rates on repurchase agreements during the early part of the 1948-58 period is probably a reflection of the ready availability of funds to dealers and the accompanying relatively small demand for dealer financing during those years. The use of RPs expanded with the sharply higher financing requirements that followed the Treasury-Federal Reserve accord of 1951. With the Federal Reserve no longer committed to support the market price of Government securities, an important part of the function of maintaining an active and orderly market fell to the Government securities dealers. With an inflated volume of securities outstanding, which resulted from wartime financing, dealer inventory and financing requirements were greatly enlarged.

Rate comparisons indicate that repurchase transactions are generally consummated at a lower rate of interest than the rate charged on collateral loans. The last two columns in the table show that the average rate on RPs was consistently below the loan rate during the period covered, with the differential ranging from a low of 15 basis points in 1949 to a high of 71 basis points in 1953. The average differential during the entire 1948-58 period was about three-eighths of one percent. In addition, the rate on RPs with nonfinancial corporations was, with few exceptions, the lowest rate available. The willingness of corporations to participate in RPs at such favorable rates to dealers explains their dominant position in this market. Although relatively low, the corporate RP rate may be higher than rates on other money market instruments that are available to corporations. Furthermore, the features of flexible maturity and minimum market risk enhance the attractiveness of RPs to a corporation.

[8] Data used in the table were obtained from Table V-4 of *A Study of the Dealer Market for Federal Government Securities*. Materials prepared for the Joint Economic Committee, Congress of the United States. United States Government Printing Office, Washington, D. C., 1960, p. 88.

**TABLE II**

## U. S. Government Securities Dealers Reported Rates on Loans and RPs 1948-1958 (in percent)

| | COLLATERAL LOANS | | | REPURCHASE AGREEMENTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | N. Y. City Banks | Banks Outside N.Y.C. | Other[a] | Banks Outside N.Y.C. | Non-Financial Corporations | Federal Reserve | Other[b] | Average rate on Loans | Average rate on RPs | Spread loans to RPs |
| 1948 | 1.25 | 1.13 | 1.00 | — | 0.80 | — | — | 1.13 | 0.80 | .33 |
| 1949 | 1.31 | 1.25 | 1.25 | — | 0.85 | 1.50 | 1.00 | 1.27 | 1.12 | .15 |
| 1950 | 1.38 | 2.00 | 1.50 | — | 1.38 | — | — | 1.63 | 1.38 | .25 |
| 1951 | 1.88 | 2.00 | 1.88 | — | 1.63 | 1.75 | 1.63 | 1.92 | 1.67 | .25 |
| 1952 | 2.00 | 2.25 | 1.88 | 1.63 | — | 1.75 | — | 2.04 | 1.69 | .35 |
| 1953 | 2.25 | 2.50 | 1.88 | 1.38 | 1.38 | — | 1.75 | 2.21 | 1.50 | .71 |
| 1954 | 2.00 | 2.00 | 1.19 | 1.82 | 1.88 | 1.38 | .94 | 1.73 | 1.51 | .22 |
| 1955 | 2.63 | 2.63 | 2.25 | 2.19 | 1.63 | 2.13 | 1.88 | 2.50 | 1.96 | .54 |
| 1956 | 3.38 | 3.50 | 3.13 | 2.63 | 2.63 | 2.88 | 2.75 | 3.34 | 2.72 | .62 |
| 1957 | 3.75 | 3.75 | 3.50 | 3.31 | 3.06 | 3.00 | 3.32 | 3.67 | 3.17 | .50 |
| 1958 | 2.13 | 2.38 | 1.63 | 1.57 | 1.56 | 2.50 | 1.94 | 2.05 | 1.89 | .16 |
| 1948-58 Average | 2.18 | 2.31 | 1.92 | 2.08 | 1.68 | 2.11 | 1.90 | 2.13 | 1.76 | .37 |

[a] Principally Foreign Agencies

[b] Principally Federal Home Loan Banks, savings banks and state and local governments

Note: Percentages are midpoints in the range of rates reported, by source of funds, by a small number of dealers. Data for some of the dealers are based on end of the calendar year reports; for other dealers, dates in the second quarter of the year were chosen.

Source: *A Study of the Dealer Market for Federal Government Securities*, (see footnote 8).

While it is not certain that a rate structure such as that in Table II still prevails, continued use of this specialized money market instrument would seem to depend heavily on the existence of a favorable differential between the cost of funds raised through RPs and alternative rates on loans.

## SUMMARY

The successful operation of the Government securities market, and in turn the dealers, is heavily dependent upon the availability of credit at a cost that does not consistently exceed the return on their inventory positions. Since, on average, approximately four-fifths of dealer positions are comprised of securities maturing within one year, the rate of return on inventory is usually relatively low. Unless dealers can finance their positions at a cost that is below the rate of return on their inventory of Government securities, a "carry loss" is incurred. If the cost of carrying securities is not at least offset by profits from the sale of securities, dealer incentive to carry securities would be dampened. Dealer unwillingness to hold securities might, in turn, contribute to dis-

orderly market conditions because the stabilizing force of dealer participation would be absent.

To date, dealers have evidently been able to satisfy their demands for borrowed funds at a rate of interest satisfactory to them. They have relied on repurchase agreements as a means of acquiring credit. It appears that future use of RPs will hinge on the relative cost advantage of this type of financing.

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# NEGOTIABLE TIME CERTIFICATES OF DEPOSIT

IN FEBRUARY 1961, a commercial bank in New York City announced that it would begin to issue negotiable time certificates of deposit and that a U.S. Government securities dealer had agreed to make a secondary market for such an instrument. At yearend 1963, less than three years after the introduction of this new money market instrument, the volume of negotiable time certificates of deposit outstanding (commonly called CDs) totaled approximately $10 billion, and CDs were being issued by approximately 300 commercial banks. The total volume of CDs outstanding has already surpassed that of commercial and finance company paper as well as bankers' acceptances, and is only slightly less than the combined dollar volume of both types of money market paper (see Table I).

A negotiable time certificate of deposit is a receipt given by a bank for the deposit of funds. The bank promises to return the amount deposited plus interest to the holder of the certificate of deposit on the date specified on the certificate. The fact that the bank agrees to pay the amount of the deposit plus interest to the holder of the certificate of deposit allows the certificate to be negotiable and to be traded prior to the actual maturity date. This provided an impetus for negotiable time certificates of deposit to become an important money market instrument.

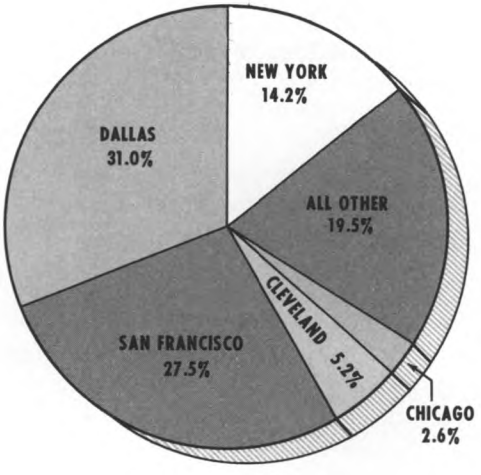
The widespread use of CDs by large money market banks reflects an attempt to prevent further reduction of the proportion of total bank deposits accounted for by those banks. Banks located in New York City, Chicago, and other major metropolitan areas depend

upon corporations for a significant part of their total deposits; however, corporate bank balances have been pared throughout the postwar period as financial managers have attempted to place an increasing share of their cash assets in highly liquid, short-term investments. This trend is an outgrowth of improved cash management techniques, higher short-term interest rates during the postwar period, and an attempt to improve earnings.

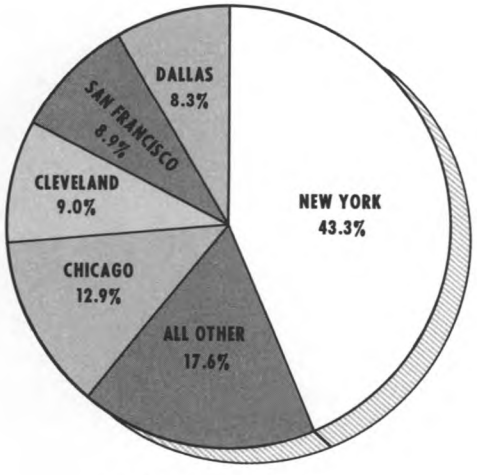
Despite the relative decline in corporate demand deposits at major money market banks, these same banks have been called upon to provide a larger proportion of total bank loans to business. This reflects, in part, the increasing size of the loans required by business firms as well as the postwar merger movement among manufacturing organizations. Such developments have resulted in the need for many corporations to rely upon larger banks for credit because of the legal limitations on the size of loans that a commercial bank may make to a single business borrower.

Until the widespread issuance of CDs, the major banks did not accept corporate time deposits. Reluctance to do so was based largely on the assumption that funds would be switched from demand to time deposits, thereby increasing bank operating costs without increasing total deposits; however, the

**1. VOLUME OF TIME CERTIFICATES OUTSTANDING** — Percentage Distribution by Federal Reserve Districts*




December 31, 1960




December 31, 1963

*Data include all outstanding time certificates of $100,000 or more at weekly reporting member banks

Source of data: Board of Governors of the Federal Reserve System

## TABLE I

### Estimated Volume of Selected Money Market Instruments Outstanding at Yearend (millions of dollars)

| | Commercial and Finance Company Paper | Bankers' Acceptances | Time Certificates of $100,000 and over[a] |
|---|---|---|---|
| 1960 | $4,497 | $2,027 | $ 796 |
| 1961 | 4,686 | 2,683 | 2,782 |
| 1962 | 6,000 | 2,650 | 5,442[b] |
| 1963 | 6,747 | 2,890 | 9,579 |

[a] Data cover all weekly reporting member banks

[b] December 5 data

Sources of data: Board of Governors of the Federal Reserve System and the Federal Reserve Bank of New York

## TABLE II

### Original Purchasers of Time Certificates Outstanding December 5, 1962

| | Percentage Distribution | |
|---|---|---|
| | Certificates of $100,000 and over | Certificates of $500,000 and over |
| Businesses | 69.0% | 70.8% |
| State and local governments | 15.5 | 13.5 |
| Foreign official institutions* | 6.2 | 7.5 |
| Individuals | 2.6 | 1.5 |
| All other | 6.7 | 6.7 |
| Total | 100.0% | 100.0% |

*Foreign governments and central banks and international financial institutions.

Source of data: Board of Governors of the Federal Reserve System

## TABLE III

### Percentage Distribution of Time Certificates Outstanding by Deposit Size of Bank and Original Purchaser

### December 5, 1962

| | Deposit Size of Banks (millions of dollars) | | | | |
|---|---|---|---|---|---|
| | Under 100 | 100-500 | 500-1,000 | 1,000 and over | Total |
| | Certificates of $100,000 and over | | | | |
| Businesses | 2.0% | 17.9% | 25.0% | 55.1% | 100.0% |
| State and local governments | 7.5 | 34.9 | 40.4 | 17.2 | 100.0 |
| Foreign official institutions | — | 7.1 | 12.0 | 80.9 | 100.0 |
| Individuals | 7.7 | 37.8 | 33.5 | 21.0 | 100.0 |
| Others | 2.4 | 21.8 | 46.3 | 29.5 | 100.0 |
| Total | 2.9% | 20.7% | 28.2% | 48.2% | 100.0% |

Source of data: Board of Governors of the Federal Reserve System

larger banks were caught in the interaction of increasing demands for credit by large business borrowers and a decline in the proportion of business deposits from which these demands for credit could be satisfied. Therefore, CDs have offered larger banks an opportunity to compete for corporate cash balances that otherwise might be invested in other money market instruments, e.g., U. S. Treasury bills or commercial paper.

Prior to 1961, a small volume of CDs were issued primarily on a local and regional scale. At the close of 1960, nearly three-fifths of the total volume of CDs outstanding had been issued by banks in the west and southwest United States. In contrast, by the end of 1963, nine large New York City banks accounted for more than one-third of the total volume of CDs outstanding, and banks located in the city of Chicago accounted for nearly 10 percent.

## DEVELOPMENT OF THE MARKET

The growth in the volume of CDs outstanding at nine major New York City banks from April 1961 to yearend 1963 is shown in Chart 2. During this period, the volume outstanding increased from $0.4 billion to $3.4 billion. At the end of 1963, the dollar volume of CDs reported by the nine banks exceeded the total dollar volume of all bankers' acceptances outstanding.

Corporations hold the largest proportion of CDs (see Table II). Larger banks attract a significant part of corporate time deposits by offering CDs in multiples of $1 million because corporate purchasers frequently desire to place large sums of money with a major bank. The desire to hold CDs of larger banks reflects the relative ease with which they can be sold, as well as the fact that FDIC insurance covers only the initial $10,000 of deposits. Therefore, in the absence of FDIC protection, corporate investors prefer to purchase CDs from larger, better-known banks.

Table III shows the volume of CDs outstanding by original purchaser and by deposit size of issuing bank as of December 5, 1962. The corporate preference for CDs of larger denominations issued by larger banks is reflected in the fact that 55 percent of the CDs held by businesses were issued by banks with total deposits of $1 billion or more. Table III also reveals that foreign official institutions had an even greater preference for CDs of the largest banks. This may be explained by the fact that most foreign transactions are carried out through New York City banks, and the fact that, as mentioned earlier, there is a preference to purchase CDs from larger, better-known banks.

On the other hand, state and local governments have concentrated their purchases of CDs from banks that have deposits in excess of $100 million but less than $1 billion. This may be partly explained by the fact that such governmental units often maintain a certain allegiance to banks located within the same local and regional areas.

## COMPETITIVE STANDING OF CDs

Yields on CDs outstanding are competitive with rates on other short-term investments. Although yield comparisons cannot be made prior to the spring of 1962 when rate information on CDs first became available, the recent movement in CD yields has closely paralleled that of other money rates. Chart 3

compares secondary market yields on CDs with three months remaining to maturity with rates on other money market instruments having comparable maturities. The rates are on a monthly average basis from May 1962 through December 1963. The CD rate averaged 25 basis points higher than the 91-day Treasury bill rate and 18 points less than the rate on four- to six-month prime commercial paper.

Unlike other short-term investments such as bankers' acceptances, CDs are offered at a 360-day interest add-on basis rather than on a 365-day discount basis.[1] CDs also permit investors to place large sums of money in a short-term investment with a tailored maturity date. The only other short-term investments that offer such a wide range of maturity dates are Treasury bills, repurchase agreements and finance company paper. Thus, investors are able to obtain CDs that mature on or shortly before corporate tax payment or dividend dates. Recent studies indicate that a major portion of CDs do mature on such dates. The higher yield on CDs, however, makes them a more attractive tax anticipation investment than Treasury bills.

## REGULATION Q

One of the problems associated with the issuance of CDs involves the effect of Regulation Q, which establishes the maximum rate of interest payable on time deposits.

[1] Bankers' acceptances do not carry a coupon rate of interest. The yield on such investments is determined by the purchase price, which includes a discount. At maturity, the owners receive the par value of the instrument. CDs, however, do carry a coupon rate of interest so that the owners receive par value plus interest at maturity.

**2. NEGOTIABLE TIME CERTIFICATES OUTSTANDING**

Nine New York City Banks

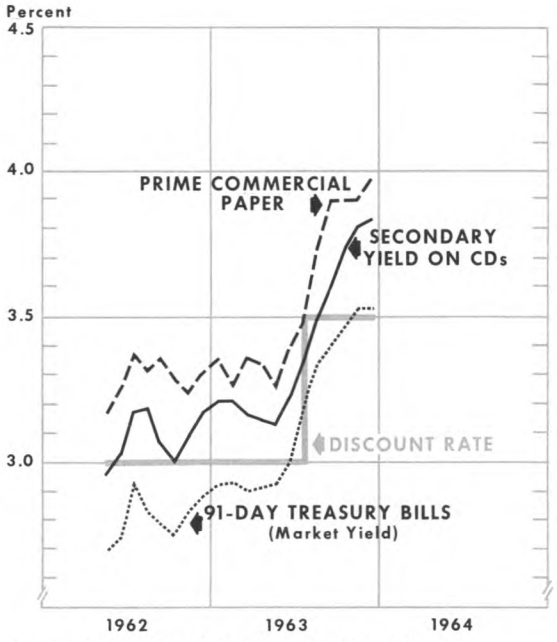

Source of data: Federal Reserve Bank of New York

This regulation is administered by the Board of Governors of the Federal Reserve System. Table IV shows the past and present maximum rates that member banks are authorized to pay on time deposits. It is noteworthy that the rates have been increased twice since the widespread issuance of CDs in 1961.

The most recent change in Regulation Q, in July 1963, was intended to permit primary rates on CDs with original maturities of 90 days to one year to become more competitive with other short-term interest rates. This change also concurred with the increase in the Federal Reserve discount rate from 3 to 3½ percent that also took place in July 1963.

Because the payment of interest rates in excess of 1 percent on CDs with original maturities of less than 90 days is currently

3. SELECTED MONEY RATES




Sources of data: Board of Governors of the Federal Reserve System; Salomon Brothers and Hutzler

not permitted under Regulation Q, CDs are not competitive with other money market instruments in this maturity range. Regulation Q, however, applies only to the rate on CDs at the time they are issued, and not to the yields that investors receive on CDs purchased in secondary markets. Investors have been able to purchase CDs with less than 90 days to maturity in the secondary market, and gain a return of more than 1 percent. For example: an investor purchases a $1 million, six-month CD carrying an interest rate of 4 percent from an issuing bank. If the original purchaser holds the CD until maturity, he will receive his initial investment of $1 million plus $20,000 interest. However, with 45 days remaining to maturity, the holder chooses to sell the CD in the secondary market for $1,015,500. The purchaser will earn a yield of 3.6 percent if he holds the CD to maturity. The original owner receives his $1 million plus $15,000 interest which he has earned at 4 percent, and an additional profit of $500.

## SECONDARY MARKET

As previously mentioned, a secondary market for CDs was established in 1961 by a small group of U. S. Government securities dealers. Near the end of 1963, dealer positions in CDs ranged between $150 and $200 million; the daily average volume of trading was between $25 and $50 million.

There are a number of factors that determine the marketability of outstanding CDs, of which the most important are the identity of the issuing bank, denomination, and maturity. CDs issued by the larger, better-known money market banks are highly marketable, thereby commanding a higher price than those of other banks. As a result, lesser-known banks must offer higher rates on CDs in order to compensate for the sacrifice the holder will make if forced to sell the CDs prior to maturity.

Furthermore, many corporations have adopted a policy of holding only CDs issued by major money market banks or of those banks in which the corporation maintains demand deposits regardless of rate differentials. This, of course, further restricts the secondary market for CDs of smaller banks.

The denomination of CDs is also a determinant of the strength of the secondary market. The most popular trading unit is $1 million, and most dealers are reluctant to acquire a certificate of less than $500,000. One reason

for their reluctance stems from the fact that CDs of smaller denominations usually are issued by lesser-known banks and are not readily marketable. Certificates of odd lot sizes usually sell at prices that yield from 10 to 15 basis points above the yield on the standard $1 million unit.

The maturity or due date also plays an important part in determining the extent of the market for outstanding CDs. A certificate that is scheduled to mature immediately prior to a corporate tax date will usually enjoy a strong market. In addition, CDs scheduled to mature near quarterly dividend payment periods or the close of corporate fiscal periods are also in demand.

In order to finance a position in CDs, dealers may borrow from banks at a rate equal to the call rate for loans with U. S. Government securities as collateral. If the collateral for a CD loan is a CD of the bank making the loan, however, the rate has to exceed the primary rate of interest on the CD by at least two percentage points in order to satisfy Regulation Q. An additional element of reluctance in making a loan to finance CD positions is the question of default. If a loan is secured by a CD of the bank making the loan, subsequent default would find the bank as holder of its own CD prior to maturity, and Regulation Q prohibits redemption prior to maturity except in cases of emergency.

**TABLE IV**

**Maximum Rates of Interest Payable on Time Certificates of Deposit* (Percent)**

| Maturity (Months) | Effective January 1, 1957 | Effective January 1, 1962 | Effective July 17, 1963 |
|---|---|---|---|
| 12 and over | 3 | 4 | 4 |
| 6-12 | 3 | 3½ | 4 |
| 3-6 | 2½ | 2½ | 4 |
| Under 3 | 1 | 1 | 1 |

*For three years beginning October 15, 1962, there is no restriction on the maximum rate of interest payable on foreign time deposits.

Source of data: Board of Governors of the Federal Reserve System

Another source of dealer financing is through repurchase agreements with corporate investors. Dealers sell CDs to corporations and agree to repurchase them at a specified date, paying interest at a mutually determined rate. Data for dealer financing to position CDs are not available prior to October 1963, but the major source of financing in the latter weeks of 1963 was through repurchase agreements with corporations.

Payment for CDs is made in Federal funds (deposits at Federal Reserve banks). Participation in the CD market represents a new type of Federal funds transaction. The use of Federal funds rather than clearinghouse funds (deposits in commercial banks) makes payment for CDs immediate rather than on the following business day.