Noncompetitive tenders in Treasury auctions: how much do they affect savings flows?

At each Treasury auction investors may purchase securities through either competitive or noncompetitive tenders, a unique combination of bidding alternatives. Unlike competitive bids, noncompetitive tenders do not state a price or yield. Instead they are simply offers to buy a given amount of Treasury securities at a price which will be determined by competitive bidders in the auction.[1] This feature makes them attractive to many investors who are not regular participants in the dealer market for Government securities. The most obvious advantage is that buyers need not expend time and effort determining what the market rate is likely to be on a forthcoming issue. Moreover, bidders are protected against the risk of paying a price that is far above the market, yet are assured their tenders will be accepted in full. As market interest rates rise above deposit ceiling rates at banks and thrift institutions, investors begin to step up their purchases of all types of securities yielding market rates of interest. Noncompetitive bids for Treasury issues respond particularly strongly. In the first nine months of this year, investors submitted noncompetitive tenders for $32 billion in Treasury securities, $7 billion more than the amount submitted in the comparable period of 1977.

The convenience of noncompetitive tenders and the attractiveness of Treasury securities encourages a broad range of investors to participate at each auction. However, since the Treasury limits the size of noncompetitive tenders accepted from any bidder, institutional investors with large sums to place must purchase Treasury securities either through competitive bids at Treasury auctions or from dealers in the secondary market. In Treasury bill auctions, these ceilings were raised from $200,000 to $500,000 in June 1975. In coupon auctions, the maximum size of the noncompetitive tenders is announced each auction and is usually somewhat greater than the limit in the bill market; a ceiling of $1 million has been customary since October 1976. In contrast, the average size of *competitive* tenders submitted in one recent bill auction was $28 million, and many institutional investors submitted more than one tender.

Treasury securities are offered in minimum denominations, ranging from $10,000 for bills to $1,000 for many coupon issues. Investors are attracted to Treasury bonds and notes not only by the United States Government guarantee, but also because secondary markets in these instruments are much more active than secondary markets in municipal or corporate bonds, enhancing the liquidity of Treasury issues relative to other securities. Moreover, Treasury issues may be purchased without brokerage fees by tenders submitted directly to any Federal Reserve Bank or branch. The relatively small minimum denomination of Treasury securities has made them attractive to individuals, who have in the past faced somewhat limited options for direct investment in short-term money market instruments issued by the private sector, most of which are normally sold and traded in round lots of $100,000 or more. In addition to such minimum-size conventions, per-unit brokerage fees are typically higher on small orders, taking the form of fixed fees for orders below the standard trading size or price adjustments above quoted dealer spreads for odd-lot transactions.

[1] A competitive tender states the price (or yield) the bidder is offering for a stated amount of securities. The Treasury satisfies all noncompetitive tenders first and then fills the remainder of the offering from the competitive tenders proceeding from highest to lowest price until the issue is fully subscribed. Tenders submitted below the lowest accepted price, the stop-out price, are not filled. Noncompetitive tenders are awarded at the average price of accepted competitive tenders.

In recent years, however, financial institutions have developed to meet the needs of investors with smaller amounts of funds to invest. Money market mutual funds, municipal and corporate bond funds, and similar, more diversified investment vehicles have begun to offer small savers access to investments in financial instruments at transactions costs comparable to those available to large savers. These funds offer the additional advantage of broad risk diversification formerly available only to the largest institutional investors, and most offer fast redemption on shares in minimum amounts of only a few hundred dollars. These funds, as well as other institutional changes, allow smaller investors to purchase indirectly a wide variety of money market assets that are available directly to large-denomination investors. Recent regulatory changes also permit commercial banks and thrift institutions to offer six-month money market certificates at rates related to those of six-month Treasury bills. Since these certificates may be offered in minimum denominations of $10,000, they are well suited to the needs of many individual investors. Such institutional developments have allowed individual savers access to a variety of instruments that yield market rates of interest, reducing their reliance on noncompetitive purchases of Treasury issues.

Who submits noncompetitive tenders?

Noncompetitive tenders are submitted by all types of investors, ranging from individuals to bank and nonbank financial intermediaries and even to nonfinancial corporations. Since 1973, the Treasury has collected detailed data on the size of bids and types of purchasers of coupon securities.[2] Although comparable information is not collected for Treasury bills, the tenders submitted in the Second Federal Reserve District for the six-month Treasury bill dated July 20, 1978 were classified by size and type of purchaser. Analysis of noncompetitive tenders submitted in both bill and coupon auctions suggests that large-denomination tenders submitted by a variety of investors make up most of the dollar volume.

Individuals typically submit a large proportion of the total number of tenders, but other types of investors, who generally submit bids in larger denominations, account for a substantial amount of the dollar volume. For example, in the November 1, 1977 auction of the 7⅝ note of 1987, about 3,300 noncompetitive tenders were made by individuals, representing 78 percent of the total number of tenders submitted throughout the country (Chart 1).[3] Despite the large number of these tenders, individuals' bids accounted for only about one fourth of the dollar amount raised noncompetitively.

This disproportionately small share of the dollar volume reflects the smaller average bid size of individuals relative to other investor categories. Nonetheless, even among individuals, denominations below $10,000 are not particularly popular, although the Treasury often offers coupon issues in minimum denominations of $1,000 or $5,000. Usually the greatest number of individuals' tenders is submitted in the $10,000 to $24,000 category, closely followed by the $25,000 to $100,000 category in which the greatest dollar volume from individuals is generally raised. For the 7⅝ note, only 2 percent of the dollar volume of noncompetitive tenders was denominated below $10,000 and only about one fifth of the total dollar volume was denominated in the $10,000-$100,000 range. Most institutional investors, on the other hand, submitted larger bids. Overall, three fifths of the dollar volume of total noncompetitive tenders fell in the $500,000 to $1 million range.

Although individuals play a relatively more important role in noncompetitive bidding for Treasury bills than for coupon issues, denominations over $100,000 account for most of the dollar volume. Individuals in the Second Federal Reserve District submitted over 1,300 noncompetitive tenders for the six-month bill dated July 20, 1978, more than 85 percent of the District's total number of private noncompetitive tenders (Chart 2). Individuals' tenders accounted for 70 percent of the total dollar volume of noncompetitive bids, almost three times the percentage attributable to individuals in the long-term market. Among individuals' bids, the size distribution is particularly revealing—tenders for amounts of $100,000 or more made up 40 percent of the dollar volume. Many of these large-denomination tenders represent estates and personal trust accounts managed by commercial bank trust departments. Institutional investors, such as banks, insurance companies, and other corporations, who accounted for the remaining dollar volume, typically submit tenders in large-sized denominations as well.

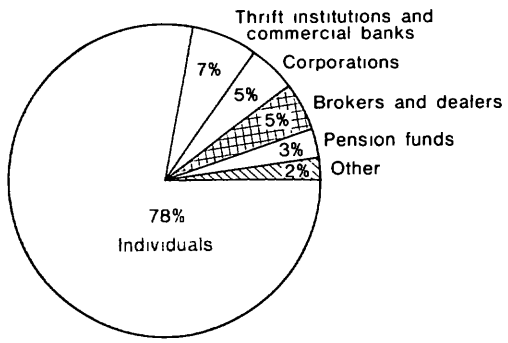
[2] These data classify tenders by twenty investor classes, bid size, and price or yield. Only tenders submitted for the investment and trading accounts of banks and reporting dealers are attributed to them; bids made by these agents for their clients' accounts are attributed to the final purchasers.

[3] The Federal Reserve may purchase securities noncompetitively in any quantity to replace maturing issues in its portfolio and the portfolios of foreign official institutions for which it acts as agent. Government agencies have similar privileges. Foreign central banks may also replace maturing issues or, at the Treasury's discretion, purchase additional 52-week bills, notes, and bonds through noncompetitive bids. Since this discussion focuses on tenders from the private sector, tenders submitted by these public purchasers were excluded.

Chart 1

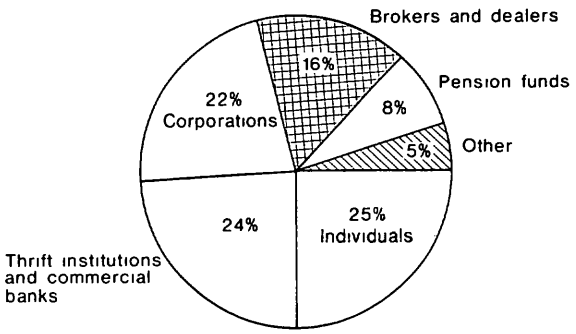
Although individuals submit the most tenders in coupon auctions . . .

Number of noncompetitive tenders



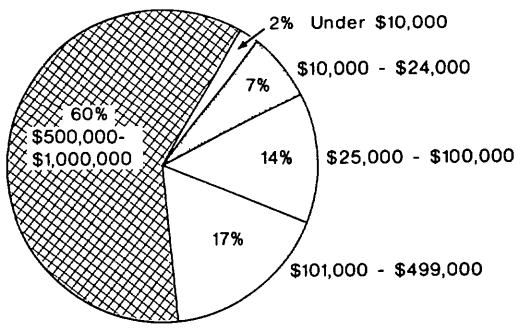
. . . other investors account for most of the dollar volume . . .

Percentage of dollar volume



. . . and large-denomination tenders play the major role.

Size of tender as a percentage of dollar volume



Total noncompetitive tenders for the 7 5/8 percent note of 1987, net of Federal Reserve and foreign official purchases

Source United States Department of the Treasury

Noncompetitive tenders and disintermediation

During periods of high interest rates, sharp increases in the gross volume of noncompetitive tenders have coincided with slow growth, or outright declines, in savings deposits at banks and thrift institutions subject to interest rate ceilings. This led many analysts to assume that most noncompetitive tenders reflect direct switching from savings deposits into Treasury securities during high interest rate periods. To discourage depositors from substituting Treasury bills for smaller sized deposits and to limit the cost of small awards, the minimum tender size in bill auctions was increased from $1,000 to $10,000 early in 1970. It is difficult to assess the impact of this requirement. Even in coupon auctions where the minimum denomination is $1,000 to $5,000, only a small proportion of the total number or dollar volume of noncompetitive tenders submitted by individuals is denominated under $10,000. Thus, the total volume of deposit switching is likely to have been only marginally reduced by the $10,000 minimum for Treasury bills.

To discover how much of the deposit shortfall during high interest rate periods is attributable to noncompetitive tenders and to gauge the sensitivity of these tenders to movements in interest rates, gross tenders must be adjusted by subtracting maturing bills previously purchased noncompetitively to arrive at an estimate of net investment (Chart 3).[4] These estimates may then be summed over appropriate time intervals to compute changes in the outstanding stock of bills acquired noncompetitively.

High and rising bill rates stimulate noncompetitive investment in Treasury bills. These funds are quickly withdrawn as rates begin to decline, even when rates are still well above passbook ceilings and gross tenders are large by historical standards.[5] This rapid runoff suggests that many investors, who submit noncompetitive tenders when they wish to shorten the average maturity of their portfolios as rates rise, switch to longer term issues as rates begin to fall.

This cyclical investment pattern is illustrated in the early 1970's when interest rates declined from their

[4] This calculation is necessary since a constant rate of gross investment of, say, $100 million per week in three-month Treasury bills would result in an outstanding stock of $1 3 billion by the end of the thirteenth week Since the initial stock of bills would have matured during this period, a constant level of gross investment may disguise either net investment or net disinvestment After the thirteenth week, the same $100 million rate of gross investment would be sufficient only to maintain the $1 3 billion stock by just replacing maturing issues

[5] Over the 120 months from February 1968 to February 1978 the correlation between net noncompetitive tender investment in short-term Treasury bills and the level of Treasury bill rates is 60 The correlation between net noncompetitive tender investment and the change in the Treasury bill rate from three months earlier is 72

cyclical peaks and over the course of the 1973-74 cycle and its aftermath. Between February 1970 and February 1972, investors pulled nearly $7.8 billion out of short-term Treasury securities purchased through noncompetitive tenders, but as rates rose toward their record 1973-74 peaks the investment outflow was reversed. From August 1972 to the peak investment level in September 1974, there was a net investment of $9.2 billion in Treasury bills through noncompetitive tenders. As short-term rates fell sharply in the fourth quarter and then dropped steadily through 1975, investors again quickly withdrew these funds from the bill market. In the twelve months ended September 1978, increases in interest rates again encouraged investors to place an additional $2.1 billion in the bill market through noncompetitive tenders.

Total deposit growth has mirrored the movement of noncompetitive tenders to some extent, but the behavior of passbook accounts and time deposits has differed (bottom panel of Chart 3). Large-denomination passbook deposits appear to be particularly sensitive to interest rates, and analysts have often discussed how quickly these funds can be shifted when market rates rise above regulatory ceilings on passbook deposits at banks and thrift institutions.[6] The regulatory ceilings on these short-term, highly mobile accounts thus play a critical role in determining when funds at banks and thrift institutions will begin to be shifted into various instruments yielding market interest rates.

Passbook savings flows at commercial banks, mutual savings banks, and savings and loan associations turned into outflows through most of 1969, and there were only slight inflows in the 1973-74 period. In each period, savings flows remained sluggish until short-term bill rates fell close to the ceilings on passbook accounts. On the other hand, time deposits increased at a quarterly average of $11 billion in the 1973-74 period, owing to longer average maturities on time deposits, to higher ceilings on long-term deposits, and also to an estimated average increase of just under $4.5 billion per quarter in commercial bank time deposits over $100,000 (excluding negotiable certificates of deposit) which were not subject to interest rate ceilings.

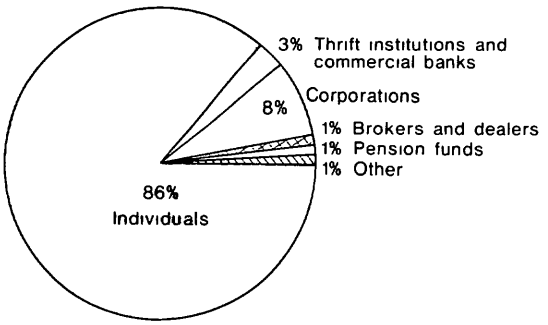
Although noncompetitive tenders increase during high interest rate periods, they account for only a fraction of the shortfall in time and savings deposit flows at banks and thrift institutions. For example, be-

[6] One study of California savings and loan associations in 1974 found the biggest disintermediation impact in accounts over $25,000 Most of the 1974 savings outflow at savings and loan associations nationwide was concentrated in a small number of large metropolitan areas where most deposits were in accounts over $10,000 See T A Goldman, "Disintermediation Under a Microscope", *Journal* (Federal Home Loan Bank Board, December 1975), pages 13-15, and D L Smith, "Regional Impact of Disintermediation", *Journal* (Federal Home Loan Bank Board, June 1977), pages 20-24

Chart 2

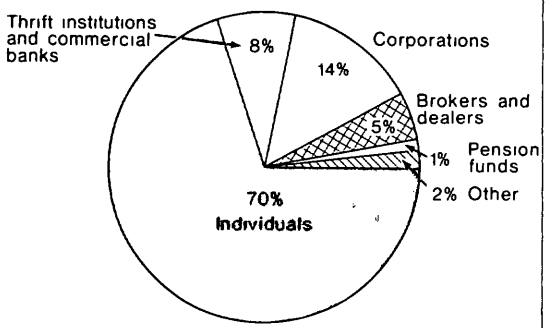
In bill auctions, individuals submit the most tenders . . .

Number of noncompetitive tenders



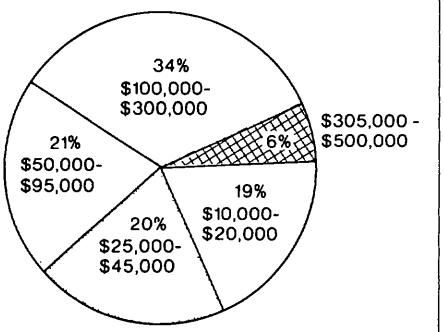
. . . and account for the most dollars.

Percentage of dollar volume



Even for individuals, large-denomination tenders dominate investment activity.

Size distribution of tenders submitted by individuals

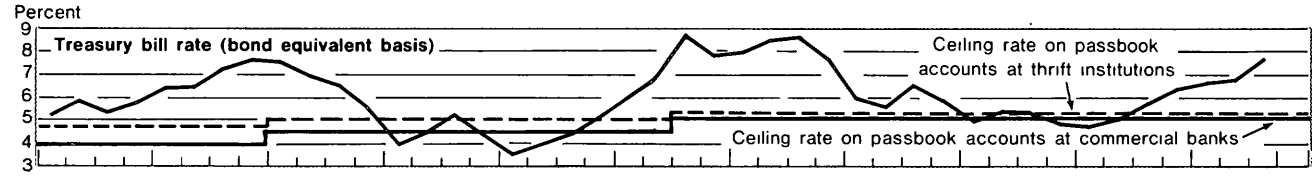


Noncompetitive tenders submitted in the Second Federal Reserve District for the six-month Treasury bill dated July 20, 1978, net of Federal Reserve and foreign official purchases

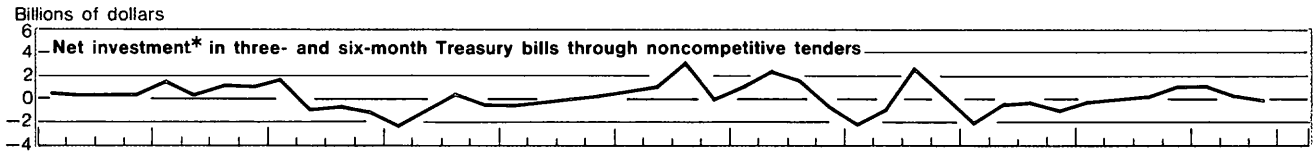
Source Federal Reserve Bank of New York

Chart 3

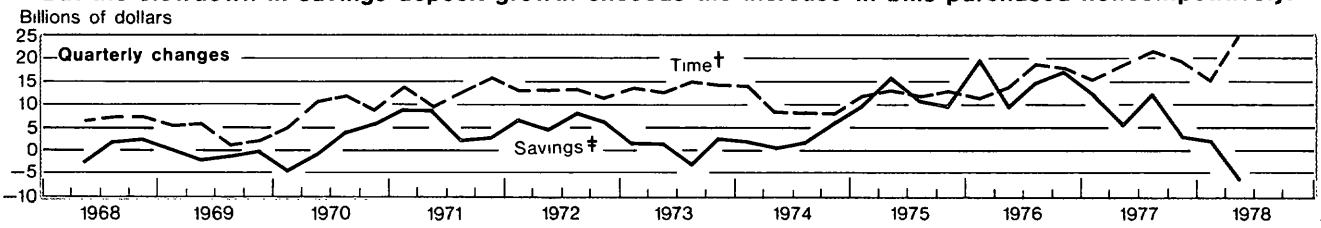
As interest rates rise . . .



. . . investors purchase Treasury bills through noncompetitive tenders.



But the slowdown in savings deposit growth exceeds the increase in bills purchased noncompetitively.



*Gross noncompetitive tenders for three- and six-month bills less maturing three- and six-month bills previously purchased noncompetitively.

†Total time deposits at thrift institutions and commercial banks excluding negotiable CDs at weekly reporting banks.

‡Total savings deposits at thrift institutions and commercial banks.

Sources: Board of Governors of the Federal Reserve System and Treasury Bulletin.

tween August 1972 and September 1974, time and savings deposit growth fell short of the increase posted over the previous two-year period by more than $36 billion, while net investment in Treasury bills through noncompetitive tenders increased $9.2 billion, only about one quarter of the deposit shortfall. Even this proportion probably overstates the deposit shortfall attributable to direct switching into three- and six-month bills, since a relatively small part of these noncompetitive tenders is submitted by the type of investors who also maintain nonnegotiable interest-bearing deposits at banks and thrift institutions.[7]

Noncompetitive tenders provide a means for a wide variety of investors to purchase securities yielding market rates of interest. The volume of these tenders is sensitive to changes in market rates of interest, and some of this volume reflects transfers of funds between Treasury securities and deposits at banks and thrift institutions. However, large-denomination tenders, which account for most of the dollar volume, probably do not result from such deposit switching. Moreover, since many alternative investment vehicles are available, changes in the volume of noncompetitive tenders are small, relative to deposit shortfalls, and offer few clues to current or future deposit flows.[8]

[7] In regressions relating net noncompetitive tender investment to changes in savings and time deposits, interest rates, and the three-month change in Treasury bill rates for February 1968 through February 1978, neither time nor savings deposits were found to be closely related to noncompetitive tenders. Indeed, a $1 billion decline in passbook deposits was estimated to produce only a $33 million increase in net noncompetitive tender investment. Of the two interest rate terms, the three-month change in interest rates proved to have a stronger impact on noncompetitive tender investment than the level of rates, confirming the view that tender activity in the bill market is related not only to the level of rates but also to the direction of current trends.

[8] For example, in regressions relating changes in savings deposits to the three-month Treasury bill rate, net noncompetitive tender investment, and a linear time trend over the February 1968 to February 1978 period, the estimated impact of noncompetitive tenders on deposit flows is not significantly different from zero, but a 1 percentage point increase in the bond-equivalent bill rate is estimated to reduce the monthly savings flow by about $700 million.

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