

The information in this chapter was last updated in 1993. Since the money market evolves very rapidly, recent developments may have superseded some of the content of this chapter.

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Chapter 8

SHORT-TERM MUNICIPAL SECURITIES

John R. Walter

INTRODUCTION

Municipal securities are debt securities issued by state and municipal governments and the special districts and statutory authorities they establish. States and municipalities borrow to finance their own expenditures, to provide funds to some tax-exempt entities such as colleges and nonprofit hospitals, and, to a limited degree, to provide funds to private firms and individuals.¹ State and local governments can borrow at favorable rates because the interest income received by holders of most municipal securities is exempt from federal taxes.

Market participants generally call municipal securities short-term if they have maturities of less than three years or if they have features that shorten their effective maturities to less than three years.² The municipal market includes several short-term financing vehicles. Notes such as bond anticipation notes, tax anticipation notes, and revenue anticipation notes provide funds for short periods and are repaid from the proceeds of bond issues, taxes, or revenue-producing projects. Tax-exempt commercial paper and variable-rate demand obligations enable state and municipal issuers to fund long-term projects at short-term rates. Swaps, municipal preferred stock, and floaters/inverse floaters allow issuers to borrow at fixed rates for the long term while providing investors with floating-rate, short-term debt. During 1991 approximately \$58 billion in short-term municipal securities were issued compared with \$219 billion in total municipal debt, both long- and short-term.³

¹ In this chapter the term "municipality" refers to local governments and to the special districts and authorities created by state and local governments. Some writers use the term to refer to state governments as well.

² Most major data-collecting firms consider municipal securities short-term if they have maturities of no more than 12 or 13 months or if they have features that make their effective maturities no more than 12 or 13 months. The figures quoted throughout the chapter are based upon this criterion.

³ Figures were provided by Securities Data Company, Inc., New York. Figure for short-term municipal securities includes notes, tax-exempt commercial paper, and variable-rate demand obligations.

CHARACTERISTICS OF SHORT-TERM MUNICIPAL SECURITIES

Short-term municipal securities are issued in either coupon or discount form. Coupon securities, the most prevalent by far, pay a stated tax-exempt interest rate, called the coupon rate, at maturity or on specified dates. The coupon rate varies over the life of the issue in the case of variable-rate instruments. Discount securities do not carry a coupon. Rather, they are issued at a price less than their face value and the difference between the issue price and face value is tax-exempt interest income.

Short-term municipal securities are normally issued in denominations of \$5,000 or more. The denomination chosen depends upon the issuer's assessment of who the purchasers are likely to be. If the issuer is trying to sell to individuals, it will use a smaller denomination than if it is trying to sell to institutional investors.

Short-term municipal securities can be either general obligation securities or revenue securities. General obligation securities are backed by the full faith and credit of the issuer, which uses taxes and other possible sources of income to meet debt payments. The ability to tax may be limited by law, in which case the general obligation security is called a limited tax security. Revenue securities are generally backed by revenues associated with the projects the securities finance and not by the full faith and credit of the issuers. The revenues are usually earnings generated by projects; for instance, as tolls from roads or connection fees and charges paid by users of water systems. In some cases, however, the revenues are funds from specific taxes, receipts from bond sales, or transfers from the federal government. Table 1 lists the major issuers of municipal debt and the types of securities they normally issue.

Many districts and authorities cannot tax, so they do not have the ability to make general obligation pledges. Consequently, most of the securities issued by special districts and statutory authorities are backed by revenues from the projects the securities finance. At times, however, the securities of such districts and authorities are backed by general obligation pledges from the state or local governments that founded them.

The interest income earned on most of the debt issued by states and municipalities is exempt from federal taxes. The tax exemption allows states and municipalities and whatever private entities they finance to obtain funding more cheaply than they otherwise could. It is, in effect, a subsidy from the federal government. In recent years, Congress has taken steps to limit access to the subsidy and to prevent states and municipalities from taking advantage of it by investing the proceeds of tax-exempt securities in taxable securities that pay higher rates.

Over the last decade, Congress has placed greater and greater restrictions on who can issue tax-exempt obligations and for what purposes. So far it has not attempted to tax interest income on municipal debt used to finance the provision of governmental services, although in April 1988 the Supreme Court ruled that

TABLE 1
**Issuers of Short-Term Municipal Securities
 and Types of Debt Issued**

Issuer	Types of Debt Generally Issued
State government	G.O. and revenue
Local government:	G.O. and revenue
City	G.O. and revenue
County	G.O. and revenue
Authorities, districts, and agencies created by state and local governments:	
Public school	G.O. and revenue
Higher education	G.O. and revenue
Public power	Revenue
Water or sewer	Revenue
Transportation	Revenue
Health facilities	Revenue
Student loan	Revenue
Housing finance	Revenue
Waste management	Revenue

Note: G.O. denotes general obligation.

it has the power to do so. The most important restrictions were introduced by the Tax Reform Act of 1986, which limited private-purpose municipal debt to certain uses and imposed state-by-state limitations on such debt. In addition, the Act redefined private-purpose debt to make circumvention of the limitations more difficult. (The provisions of the Tax Reform Act affecting the municipal debt markets are outlined in the box on page 92.)

These limitations halted the rise in the use of private-purpose, tax-exempt debt that had occurred over the preceding decade. Tax-exempt debt issued for the benefit of businesses and nonprofit organizations (which accounts for most of the private-purpose tax-exempt debt) had risen from 4 percent of all tax-exempt borrowing in 1975 to 32 percent in 1985, but within three years after the passage of the Act it fell to 24 percent of all tax-exempt debt outstanding (Board of Governors 1990, pp. 43-44). Some municipal borrowers have issued taxable securities to finance private-purpose activities.

In the Tax Reform Act of 1986, Congress took steps to limit the ability of tax-exempt issuers to earn profits from investing the proceeds of tax-exempt issues in higher interest rate taxable securities. First, it required that such arbitrage

FEATURES OF THE TAX REFORM ACT OF 1986

- Lowered the top marginal tax rate for individuals from 50 percent to 33 percent and lowered the top marginal tax rate for corporations from 51 percent to 39 percent.
- With the exception of certain small issues of debt and debt purchased on or before August 7, 1986, ended depository institutions' ability to deduct from income the interest expense of carrying tax-exempt debt.
- Included in corporate and individual minimum income tax calculations tax-exempt interest income from newly issued (issued after August 7, 1986) private-activity bonds.
- Changed the definition of a private-activity security so that a municipal security is a private-activity security if something other than a governmental unit uses more than 10 percent of the proceeds or provides more than 10 percent of the repayment. Prior to the Act the cutoff had been 25 percent.
- Placed state-by-state limits on the amount of certain private-activity, tax-exempt debt. After 1987 annual new issues of private activity, tax-exempt debt were limited to \$50 per capita or \$150 million, whichever is greater.
- Restricted tax-exempt, private-activity debt to charitable uses, to certain small debt issues, and to use for certain specified infrastructure and waste disposal facilities.
- Limited the ability of issuers to earn arbitrage profits and restricted advance refunding issues.

profits be returned to the federal government. It also greatly limited advance refunding issues, which are securities issued ostensibly to fund the retirement of other securities but issued well before their date of maturity, because the proceeds of such issues offer the opportunity for arbitrage profits.

THE INSTRUMENTS

Notes States and municipalities issue notes to bridge the gap between expenditures and the receipt of funds from bond issues, taxes, grants, income-generating projects, or new issues of notes. One type of note frequently used by states and municipalities is the bond anticipation note (BAN) which is paid off with funds from a bond issue. Suppose a state or municipality plans to finance a construction project with bonds. Rather than issuing bonds before the project is finished and

the final costs are certain, the state or municipality may first sell notes that will be retired with the proceeds of bonds issued upon completion of the project. For example, in 1990 Arlington County, Virginia, issued \$47 million in two-year, fixed-rate bond anticipation notes to fund public improvements. The notes were general obligation securities backed by the full faith and credit of the county. When they matured in 1992 the county paid them off by issuing new two-year BANs which were then repaid with the proceeds of bond sales in 1994. In this example, while the immediate source of repayment of the BANs maturing in 1992 was another BAN issue, not a bond issue, the notes in the first issue were called BANs because they were ultimately repaid with proceeds of the 1994 bond issue.

Notes are also issued in anticipation of receipts from taxes, grants, and fee-generating projects. These notes are generally named according to the source of repayment. Popular notes are revenue anticipation notes (RANs), tax anticipation notes (TANs), grant anticipation notes (GANs), and tax and revenue anticipation notes (TRANs).

Notes generally have minimum denominations of \$5,000. Maturities are generally less than one year, though some have maturities of up to three years. Repayment comes from funds available on or before the maturity date. In 1991 states and local governments issued \$42 billion in notes which accounted for about 72 percent of all short-term municipal securities issued that year (see Figure 1).

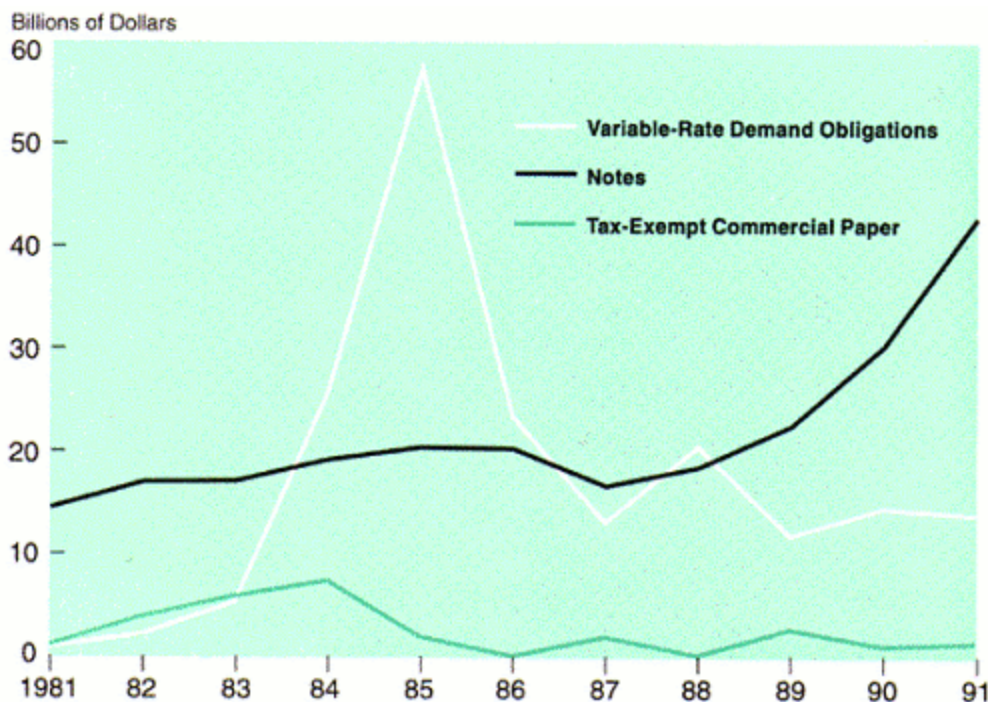
Tax-Exempt Commercial Paper and Variable-Rate Demand Obligations Tax-exempt commercial paper is short-term, unsecured debt of states and municipalities. Maturities of tax-exempt commercial paper generally range from 30 to 90 days, though maturities of up to 270 days are possible.

Since commercial paper issuers generally allow investors to choose from a span of maturities, some paper is maturing almost every day and therefore must be replaced with new paper on an almost daily basis. The frequent involvement of issuers and their agents in the market is costly. Because of this cost, states and municipalities do not find it attractive to issue commercial paper unless they are borrowing at least \$15 million to \$25 million.

States and municipalities can continue rolling over maturing commercial paper as long as they need to borrow funds, so it can be used to fund long-term projects. For example, one state used a commercial paper program throughout the 1980s to finance its capital projects. The amount outstanding in the program was authorized by the state government to be as much as \$90 million but the actual amount issued varied with funding demands. Denominations ranged between \$50,000 and \$5 million with the securities typically sold in \$1 million lots. Maturities were between 3 days and 210 days depending upon investors' desires. Most of the commercial paper was purchased by money market funds.

Variable-rate demand (or put) obligations come in almost as many variations as there are dealers in the tax-exempt money market, but they share two

FIGURE 1
Short-Term Municipal Securities
 New Issue Volume by Year



Note: Data for tax-exempt commercial paper for 1981-84 and data for notes and variable-rate demand obligations for 1981-1982 came from chart on page 1 of Standard & Poor's Credit Week—dated May 27, 1985. Other data came from Joe Kelley and Marc Katz at Securities Data Company.

characteristics.⁴ First, they all feature periodic interest rate adjustments. Second, they include a demand option which gives the investor the right to tender the instrument to the issuer or a designated party on a specified number of days' notice at a price equal to the face amount plus accrued interest. The length of the notice period normally corresponds with the length of the period between interest rate adjustments. For example, if the interest rate is adjusted on a weekly basis, the variable-rate security will generally have a seven-day notice period. If the investor judges the current rate to be too low or if he wants his money back for some other reason, he exercises his demand option. In this case the instrument is resold to another investor. Many variable-rate demand obligations also include a provision allowing the issuer, after properly notifying all holders and allowing

⁴ The terms "demand" and "put" are used interchangeably in the municipal security market. In this chapter, "demand" is used.

them the opportunity to tender their holdings, to convert the obligation into a fixed-rate security with no demand feature.

The length of the notice period on a variable-rate demand obligation determines its effective maturity from the investor's point of view and therefore strongly affects the interest rate which must be paid on the instrument. The most common notice periods are 1 day, 7 days, and 30 days. As a result of a fairly consistently upward-sloping yield curve in the municipal market, it is generally true that the shorter the notice period the lower the rate paid.

States and municipalities began to make significant use of tax-exempt commercial paper and variable-rate demand obligations in the early to mid-1980s. The tax-exempt yield curve became strongly upward-sloping in the early 1980s, which provided issuers with the incentive to rely more on short-term debt to meet their demand for long-term funding. Tax-exempt commercial paper and variable-rate demand obligations were favored because they have two advantages over notes as instruments for long-term funding. First, tax-exempt commercial paper and variable-rate demand obligations allow state and local finance departments to raise long-term funds without repeatedly bearing the costs associated with issuing and reissuing notes. These costs include legal fees and the costs of preparing official statements and seeking competitive bids (Peterson 1991, p. 305). Second, state or local finance departments generally must seek approval from voters or at least from elected officials before reissuing notes to replace maturing notes. This step is avoided when using tax-exempt commercial paper because finance departments employing tax-exempt commercial paper are given blanket authorization to issue and reissue as many units of the paper as necessary to provide a specified amount of funding for a specified period. Finance departments using variable-rate demand obligations also avoid having to repeatedly seek approval because variable-rate demand obligations can remain outstanding for long periods.

At the same time that the shape of the tax-exempt yield curve was encouraging states and municipalities to issue tax-exempt commercial paper and variable-rate demand obligations, the demand for these new instruments was greatly expanded by the rapid growth of tax-exempt money market funds. Like other money market funds, these funds wanted to maintain a constant value of \$1 per share, so that investors would view their shares as close substitutes for deposits at commercial banks and other depository institutions. The desire to maintain a constant share value provided tax-exempt money market funds with the incentive to invest in securities with very short-term maturities because the market value of such securities does not fluctuate greatly with changes in market interest rates. This increased the demand by these funds for tax-exempt commercial paper and variable-rate demand obligations, which are generally offered with short maturities or short effective maturities. Their demand for these securities was reinforced by a 1983 Securities and Exchange Commission regulation requiring

that a fund wishing to use an accounting procedure that enables it to maintain a constant share value limit the average maturity of its portfolio to no more than 120 days. This was reduced to 90 days in 1991.

Variable-rate demand obligations have one important advantage over tax-exempt commercial paper for long-term borrowing. When commercial paper matures and is replaced with new commercial paper, the new security is legally defined as a new debt issue and is subject to the regulations in place at the time of its issue. Since Congress has been imposing limits on certain types of issues in recent years, issuers wishing to borrow for an extended period by using commercial paper face the danger of having a newly imposed or tightened limit eliminate their source of funds. Issuers of variable-rate demand obligations are not faced with this danger because when an investor exercises his demand option the securities are simply resold to another investor and new debt is not issued. This advantage may explain why states and municipalities issue much more variable-rate demand debt than tax-exempt commercial paper (Figure 1).

Money market funds are the major investor in both tax-exempt commercial paper and variable-rate demand obligations. Other investors include corporations, bank trust departments, and individuals. Since minimum denominations for both tax-exempt commercial paper and variable-rate demand obligations are fairly high, generally between \$50,000 and \$100,000 for tax-exempt commercial paper and between \$5,000 and \$100,000 for variable-rate demand obligations, individuals investing in these securities tend to be wealthy.

Swaps, Municipal Preferred Stock, and Floaters/Inverse Floaters Between the mid-1980s and 1990 investment bankers introduced three new products into the municipal market. Each of these, in effect, allows issuers to lock in fixed rates on long-term borrowings while giving investors variable rates.

The first of these new products, the swap, began to gain popularity in the municipal market in the mid-1980s. In general, a swap is an agreement between two parties to exchange interest payments for a fixed period of time. A municipal borrower wishing to lock in a fixed, long-term rate may be able to get a rate lower than the rate on conventional long-term municipal bonds by issuing a variable-rate demand obligation to an investor and entering into a swap agreement with a third party such as a commercial bank, investment bank, or insurance company. In the swap the municipal borrower pays the third party a fixed rate and receives a variable rate, which it in turn uses to pay the variable rate to the investor. Because the variable-rate payment made by the municipal issuer roughly cancels the variable-rate income it earns, the issuer ends up paying a fixed rate of interest for the term of the debt. As of the end of 1991, the notional value (the principal value of the securities yielding the interest payments that are swapped) of swaps outstanding in the municipal market was between \$25 billion and \$40 billion.

The second new product, municipal preferred stock, was introduced in 1988. Municipal preferred stock is an adjustable-rate obligation of a closed-end fund

that invests in fixed-rate, long-term municipal bonds.⁵ Such a fund gathers part of its funding by selling the adjustable-rate municipal preferred stock and the rest by selling common stock. The rate on the preferred stock is reset in an auction. Some funds have auctions every 7 days and others every 28 days. Those wishing to purchase the preferred stock submit bids to the agent conducting the auction while those wishing to sell shares submit sell orders. The new rate on the preferred stock for the next 7 or 28 days is the rate that clears the market. An increase in the rate paid on the preferred stock lowers the value of the common stock because it reduces the share of interest income from the fixed-rate bonds going to the common stockholders. Approximately \$6 billion of municipal preferred stock was outstanding as of January 1992.

The third new product, the floater/inverse floater, was first used in the municipal market in early 1990 and had grown to \$2 billion by the end of 1991. When municipalities use this technique they issue equal dollar amounts of two types of securities, floaters and inverse floaters. The floaters earn an adjustable rate that is reset every 7 to 35 days based on an index rate or on the results of an auction of the securities. The inverse floaters earn an interest rate equal to a fixed rate of interest, which is set when the securities are initially issued, plus the difference between this fixed rate and the rate set on the floating-rate portion of the debt. If the rate paid on the floaters exceeds the fixed rate then the inverse floaters earn a rate lower than the fixed rate. Conversely, if the floating rate is below the fixed rate then the inverse floaters earn a rate above the fixed rate. The issuer pays a rate for the life of the instrument approximately equal to the fixed rate (the rate paid by the issuer may differ from the fixed rate on account of fees charged by the investment bankers). The holders of the floating-rate portion of the debt, who are generally corporations or individuals, get a variable-rate investment tied to the current short-term market rate. The holders of the inverse floating-rate portion, generally bond funds, receive a variable rate that moves in the opposite direction of the short-term market rate. Money market funds are prohibited by SEC regulation from holding floaters and inverse floaters.

Features of the commonly used short-term municipal instruments are summarized in Table 2.

THE INVESTMENT DECISION

An investor's decision whether to purchase a taxable or tax-exempt security depends largely on his marginal federal tax rate and the rates being paid on

⁵ While mutual funds continuously buy and sell shares in their funds, the number of shares in closed-end funds is relatively fixed from the time the fund is initially offered. Stock in a closed-end fund is sold when the fund is formed and the fund generally does not sell additional shares or buy back its outstanding shares. The outstanding shares of a closed-end fund trade on an exchange or in an auction.

TABLE 2

Instruments Commonly Used in the Short-Term Municipal Market

Security Name	Types of Pledge	Features
NOTES		
Revenue Anticipation Note	G.O. or revenue	Fixed maturity of a few weeks to one year, fixed interest rates
Tax Anticipation Note	G.O. or revenue	Fixed maturity of a few weeks to one year, fixed interest rates
Grant Anticipation Note	G.O. or revenue	Fixed maturity of a few weeks to one year, fixed interest rates
Tax and Revenue Anticipation Note	G.O. or revenue	Fixed maturity of a few weeks to one year, fixed interest rates
Bond Anticipation Note	G.O. or revenue	Fixed maturity of a few weeks to one year, fixed interest rates
OTHER INSTRUMENTS		
Tax-Exempt Commercial Paper	G.O. or revenue; liquidity facility, credit facility	Maturities of a few days to 270 days depending on investor and issuer preference; interest rate fixed to maturity
Variable-Rate Demand Obligation	G.O. or revenue; liquidity facility, credit facility	May be tendered to issuer or designated party on a specified number of days' notice; floating or variable interest rate; many include features which allow conversion to a fixed rate
Swap	N/A	Financial agreement that trades a variable-rate interest payment stream for fixed-rate stream
Municipal Preferred Stock	N/A	Obligation of a closed-end, municipal bond fund; auction-determined, floating or variable interest rate
Floater/Inverse Floater	G.O. or revenue; credit facility	Floater pays market interest rate determined in weekly or monthly auctions; interest rate on inverse moves in opposite direction as floater, based on an equation

Note: G.O. denotes general obligation.

tax-exempts and taxables. Yields on tax-exempt securities are frequently stated in taxable equivalent terms, or in terms of what taxable interest rate would be necessary to provide the same after-tax interest rate. The basic taxable equivalent formula is

$$r_{TE} = r_{TF} / (1 - t), \quad (1)$$

where r_{TF} is the rate paid on the tax-free instrument and r_{TE} is the taxable equivalent yield for investors with a marginal federal tax rate of t . For example, if an investor subject to a 28 percent marginal federal tax rate purchases a tax-exempt security paying 5.4 percent, then a taxable security paying 7.5 percent would yield this investor the same after-tax rate as the tax-exempt security. If the investor's taxable equivalent yield on municipal securities is greater than the before-tax yields he can earn on taxable securities of comparable risk then he will profit by investing in tax-exempt securities.

The value of the tax exemption to the investor increases when the income earned also is exempt from state income tax. This is true for investors purchasing securities issued by their home state or by municipalities located in their home state. When the security is exempt from federal and state income taxes it is "double tax-exempt" for the investor and the relevant taxable equivalent formula is

$$r_{TE} = r_{TF} / \{ 1 - [t_F + t_S(1 - t_F)] \}, \quad (2)$$

where t_F is the marginal federal tax rate of the investor and t_S is the marginal state tax rate of the investor. This formula takes into account the deductibility of state income taxes on the federal return. Suppose an investor subject to a 28 percent federal tax rate has a 10 percent state income tax rate. The total tax rate faced by the individual is $.28 + .10(1 - .28) = .35$. If the municipal security being considered is exempt from state income taxes and is paying a 5.4 percent rate of return, then the taxable equivalent yield for this investor is 8.3 percent.⁶

Wealthy individuals and corporations are the largest investors in short-term tax-exempt municipal securities because they face the highest marginal rates and therefore earn the highest tax-equivalent yields on municipal securities. Some individuals invest in short-term municipal securities directly, either through a securities dealer or through a bank with a dealer department. But most individuals invest through tax-exempt money market funds. Corporations use short-term municipal investments mostly as a repository for their short-term or seasonal cash surpluses. Corporations invest directly in short-term municipal securities and indirectly through money market funds.

From equation (1) it can be seen that declines in federal tax rates would lower tax-equivalent yields on tax-exempt securities. Following a cut in tax rates, therefore, tax-exempt rates would have to increase relative to taxable rates in order to attract investors. Consequently, one would expect a cut in tax rates to lead to an increase in the ratio of tax-exempt to taxable yields.

⁶ The Tax Reform Act of 1986 makes the calculation of the taxable equivalent rate for municipal securities more complicated for some investors because it includes in its calculation of alternative minimum taxes interest income on private-activity debt issued after August 7, 1986.

TAX LEGISLATION AFFECTING THE YIELDS ON MUNICIPAL SECURITIES

Tax legislation in the 1980s reduced the relative attractiveness of municipal debt to many investors and as a result raised municipal rates relative to the rates on taxable instruments. Most importantly, federal income tax rates were lowered by a considerable margin in the 1980s. The Economic Recovery Tax Act of 1981 (ERTA) lowered the top individual tax rate from 70 percent to 50 percent and phased in a reduction of individual tax rates at lower income levels by 25 percent over three years. The Tax Reform Act of 1986 further reduced the top individual tax rate to 33 percent, lowered other individual tax rates, and also reduced the top corporate tax rate to 39 percent.

Legislation of the 1980s also greatly reduced the attractiveness to banks of investing in municipal securities. Prior to the 1980s, banks and other depository institutions were able to deduct from taxable income all their interest expenses incurred to fund holdings of municipal securities. The tax-deductible portion of banks' expense of carrying municipal securities was lowered to 85 percent by the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) and then to 80 percent by the Deficit Reduction Act of 1984. Subsequently, the Tax Reform Act of 1986 totally eliminated the deductible portion of banks' expense of carrying municipal securities, with two exceptions.⁷ Banks could continue to deduct 80 percent of the interest expense incurred in carrying debt purchased on or before August 7, 1986, and in carrying public-purpose debt of issuers that borrow no more than \$10 million a year.

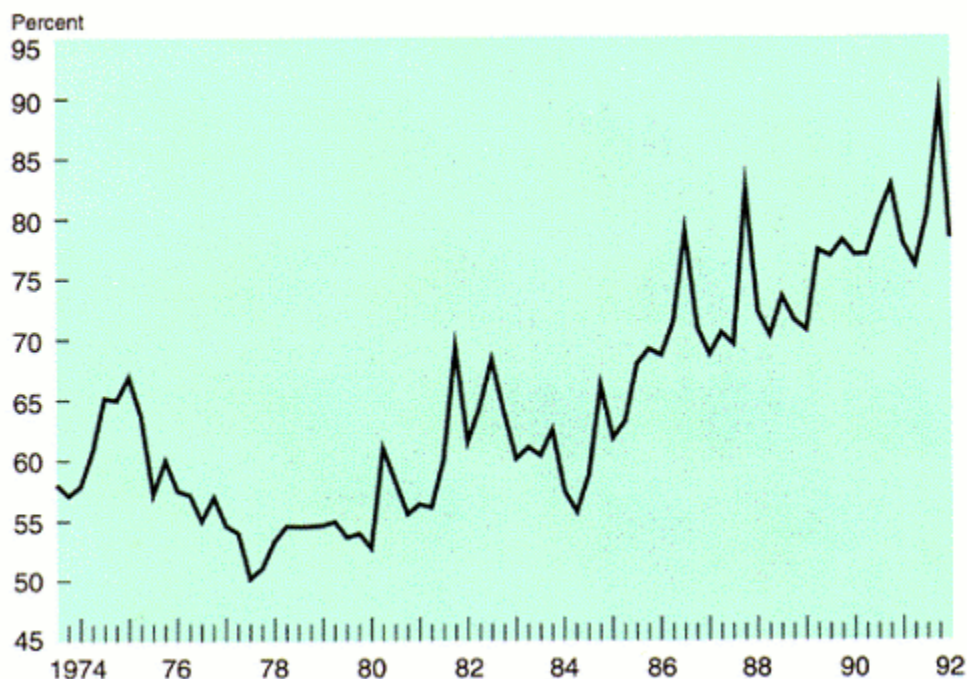
The steady erosion in the 1980s of the ability of banks to deduct from earnings the interest expenses incurred in carrying municipal debt led banks to reduce their investments in municipal securities and significantly diminished the importance of banks as purchasers of municipal securities. From 1980 to 1990 banks' holdings of municipal debt declined from 9.6 percent of their total assets to only 3.5 percent, and their share of total outstanding municipal debt fell from 42 percent to 11 percent.⁸

The decline in tax rates in the 1980s and the decreased demand by banks for municipal securities raised municipal rates relative to the rates on taxable instruments (Fortune 1991, p. 33; Peek and Wilcox 1986, pp. 35 and 38). This is illustrated in Figure 2, which graphs the ratio of the rate paid on one-year municipal notes to the rate on one-year Treasury bills.

⁷ The TEFRA, the Deficit Reduction Act of 1984, and the Tax Reform Act of 1986 all defined the interest expense of carrying tax-exempt obligations as the total interest expense of the financial institution times the proportion of all assets that are tax-exempt obligations.

⁸ Data on municipal debt as a percentage of total bank assets are from Consolidated Reports of Condition and Income, December 31, 1980, and December 31, 1990. Figures on banks' share of municipal debt are from Board of Governors of the Federal Reserve System (1992).

FIGURE 2
 Ratio of Rate on One-Year Municipal Note to
 Rate on One-Year Treasury Bill



DEALERS

Most large banks and securities firms, along with some smaller firms specializing in municipal securities trading, act as dealers in the short-term municipal market. Municipal securities dealers underwrite and market new security issues and provide a secondary market for outstanding securities. Banks are limited by the Glass-Steagall Act of 1933 to underwriting only general obligation securities.

Security issues may be underwritten by one dealer if the issue is small or by a group of dealers, called a syndicate, if the issue is larger than one dealer would like to handle. In a syndicate one dealer acts as the lead dealer, taking the largest portion of securities and managing the sale of the issue. Syndicates are used to enlarge the number of possible investors and to spread the underwriting risk among dealers. The major risk is that interest rates may unexpectedly rise before the underwriter has sold the issue to the public, with the result that the security issue will not sell at a price that will earn a profit.

States and municipalities may issue securities either through a private placement in which they sell the securities to a limited number of investors or through a public offering. If they choose a public offering they must decide whether to sell their securities by competitive bidding or by a negotiated sale. In competitive bidding the municipality advertises the issue and then sells it to the underwriting dealer or syndicate of dealers that offers the highest price. In a negotiated sale the municipality chooses one dealer or syndicate without soliciting bids from other firms. Municipal notes are most often sold by competitive bidding. Variable-rate municipal securities and floater/inverse floater issues are generally sold through negotiated deals, while tax-exempt commercial paper is always sold in this manner.

In a note issue the dealer's responsibility, or dealers' responsibility when a syndicate is involved, to the issuer is limited to the initial sale of the securities. For variable-rate, commercial paper, and floater/inverse floater issues dealers frequently take on additional responsibilities. When variable-rate obligations are used, the dealer or the lead dealer generally becomes the remarketing agent and has the responsibility of resetting the interest rate on adjustment dates and reselling any securities that are tendered by investors. When commercial paper is issued, the dealer or lead dealer sets the rates and sells new paper to replace maturing paper. In floater/inverse floater issues the dealer or lead dealer conducts the auctions where rates are set and the securities are bought and sold.

Due to the heterogeneous nature of municipal issues, there is not an active secondary market. Dealers generally will make a secondary market in the short-term securities they have sold. Several electronic services and daily publications keep dealers and other participants in the market informed about what securities are being offered and what rates are being paid.

Dealers wishing to sell particular issues are often matched by brokers with those wishing to buy the same issues. Brokers deal only with large volumes and charge a small fee for their services.

The Municipal Securities Rulemaking Board (MSRB) develops and updates regulations by which dealers, dealer banks, and brokers in the municipal market are to operate (Peterson 1976, pp. 44-45). These regulations are enforced by the SEC, the federal bank regulators, and the National Association of Securities Dealers.

PROVIDERS OF CREDIT AND LIQUIDITY ENHANCEMENTS

In order to improve the credit ratings and marketability of their securities, municipal issuers frequently enter credit or liquidity substitution agreements. A credit substitution agreement is a contract in which a third party agrees to pay the holder of a security if the issuer does not pay. Under this contract the security

holder has a claim against the promising party if the issuer defaults. A liquidity substitution agreement is a conditional promise made by a third party either to purchase maturing or tendered securities itself or to provide the municipal issuer or its agent with a loan that will enable it to redeem the securities. A liquidity substitution agreement is activated when the remarketing agent cannot reissue the maturing securities or resell the tendered securities at an interest rate below some maximum set by the issuer or when it cannot resell them at all. Liquidity substitution agreements are conditioned on the financial health of the issuer. They generally have a clause that voids the agreement if the financial condition of the issuer deteriorates significantly.

Banks are the most common providers of credit substitution agreements in the short-term municipal market. Banks provide the agreements, for fees, by means of letters of credit or standby note or bond purchase agreements. Insurance companies provide the same type of promise through municipal bond insurance.

Issuers of municipal debt purchase credit substitution agreements to raise their credit ratings. One reason for doing so is that tax-exempt money market mutual funds limit their investments to municipal debt with top credit ratings. To sell their securities to money market funds, issuers with less than top ratings improve their ratings by obtaining a credit substitution promise.

Most liquidity substitution agreements are provided by large U.S. and foreign banks through lines of credit. Variable-rate demand obligations and commercial paper issues almost always require such agreements. Variable-rate demand obligations require liquidity substitution backing because of the danger that the holders of the securities will exercise their demand options at a time and in sufficient numbers that the remarketing agent will not be able to resell the securities and the issuer will not have sufficient funds in reserve to redeem them. Institutional investors, the biggest purchasers of such securities, require that this risk be covered. Similarly, there is some danger that when existing commercial paper matures the issuer's marketing agent will be unable to sell new paper and the issuer will not have sufficient funds to redeem it. Issuers of commercial paper must back their issues with liquidity facilities to assure investors that funds will be immediately available at maturity. Notes, municipal preferred stock, floater/inverse floater issues, and swaps typically do not require liquidity promises.

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