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Tax-Exempt Bonds: A Description of State and Local Government Debt

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Summary

This report provides information about state and local government debt. State and local governments often issue debt instruments in exchange for the use of individuals' and businesses' savings. This debt obligates state and local governments to make interest payments for the use of these savings and to repay, at some time in the future, the amount borrowed. State and local governments finance capital facilities with debt rather than out of current tax revenue in order to match the time pattern of benefits from these capital facilities with the time pattern of tax payments.

The federal government subsidizes the cost of most state and local debt by excluding the interest income from federal income taxation. This tax exemption of interest income is granted because it is believed that state and local capital facilities will be under provided if state and local taxpayers have to pay the full cost.

State and local debt is issued as bonds, to be repaid over a period of time greater than one year and perhaps exceeding 20 years, and as notes, to be repaid within one year. General obligation bonds are secured by the promise to repay with general tax revenue, and revenue bonds are secured with the promise to use the stream of revenue generated by the facility built with the bond proceeds. Most debt is issued to finance new capital facilities, but some is issued to refund a prior bond issue (usually to take advantage of lower interest rates). Tax-exempt bonds issued for some activities are classified as governmental bonds and can be issued without federal constraint because most of the benefits from the capital facilities are enjoyed by the general public. Many tax-exempt revenue bonds are issued for activities Congress has classified as private because most of the benefits from the activities appear to be enjoyed by private individuals and businesses. The annual volume of a subset of these tax-exempt private-activity bonds is capped.

Arbitrage bonds devote a substantial share of the proceeds to the purchase of assets with higher interest rates than that being paid on the tax-exempt bonds. Such arbitrage bonds are not tax exempt because Congress does not want state and local governments to issue tax-exempt bonds and use the proceeds to earn arbitrage profits. The arbitrage profits could substitute for state and local taxes.

The major policy issue in this area is the effort to use tax-exempt bonds to increase federal financial support for a variety of public facilities. Another policy issue is whether constraints should be relaxed on the types of activities for which state and local governments can issue tax-exempt debt. The extent to which the current arbitrage bond rules prohibit what some consider legitimate state and local financial behavior is a related area of dispute. The list of activities that classify tax-exempt private-activity bonds — and whether they should be included in the volume cap — is another area of controversy. This report will be updated as new data become available.

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Tax-Exempt Bonds: A Description of State and Local Government Debt

What is Debt?

Individuals and businesses lend their accumulated savings to borrowers. In exchange, borrowers give lenders a debt instrument. These debt instruments, typically called bonds, represent a promise by borrowers to pay interest income to lenders on the principal (the amount of money borrowed) until the principal is repaid to the lenders. This principal, sometimes called the proceeds, generally is used to finance the construction of capital facilities.

Why Do State and Local Governments Issue Debt?

Since public capital facilities provide services over a long period of time, it makes financial and economic sense to pay for the facilities over a similarly long period of time. This is particularly true for state and local governments. Their taxpayers lay claim to the benefits from these facilities by dint of residency and relinquish their claim to benefits when they move. Given the demands a market-oriented society places on labor mobility, taxpayers are reluctant to pay today for state and local capital services to be received in the future. The rational response of the state or local official concerned with satisfying the preferences of constituents is to match the timing of the payments to the flow of services, precisely the function served by long-term bond financing. An attempt to pay for capital facilities "up front" is likely to result in a less than optimal rate of public capital formation.

State and local governments are also faced with the necessity of planning their budget for the year (or in some cases for two years). This requires a balancing of revenue forecasts against forecasts of the demand for services and spending. Not infrequently, the inevitable unforeseen circumstances that undermine any forecast cause a revenue shortfall, which must be financed with short-term borrowing, or "notes." In addition, even when the forecasts are met, the timing of expenditures may precede the arrival of revenues, creating the necessity to borrow within an otherwise balanced fiscal year. Finally, temporarily high interest rates that prevail at the time bonds are issued to finance a capital project may induce short-term borrowing in anticipation of a drop in rates.

Thus, state and local governments have valid reasons to borrow funds. In fact, these reasons are so universally accepted that both taxpayers and the courts have

ignored the nineteenth century legacy of unrealistically restrictive constitutional and statutory limitations on state and local borrowing.[1]

What Makes State and Local Debt Special?

The federal government has chosen to intervene in the public capital market by granting the debt instruments of state and local governments a unique privilege — the exemption of interest income earned on these bonds from federal income tax. The tax exemption lowers the cost of capital for state and local governments, which should then induce an increase in state and local capital formation. The lower cost of capital arises because investors would be indifferent between taxable bonds (e.g., corporate bonds) that yield a 10% rate of return before taxes and tax-exempt bonds of equivalent risk that yield a 6.5% return. The taxable bond interest earnings carry a tax liability (35% of the interest income in most cases) making the after tax return on the two bonds identical at 6.5%. Thus, state and local governments could raise capital from investors at an interest cost 3.5 percentage points (350 basis points) lower than a borrower issuing taxable debt.

Generally, the degree to which tax-exempt debt is favored is measured in two ways. The yield spread is the difference between interest rate on corporate bonds and the interest rate on municipal bonds of equivalent risk. **Table 1** lists the average yield on high-grade municipal bonds and AAA-rated corporate bonds from 1980 to 2007, and the corresponding yield spread. The spread grew to a high of 3.43% in 1980 and dropped to a low of 0.94% in 2003. The greater the yield spread, the greater is the nominal savings to state and local governments as measured by the interest rates they would have to pay if they financed with taxable debt. As the spread approaches zero, state and local borrowing costs approach the level of taxable bond interest rates.

Another measure, the yield ratio (which is an average rate on tax-exempt bonds divided by an average rate on a corporate bond of like term and risk), adjusts the spread for the level of interest rates. The lower the ratio, the greater the savings to state and local governments relative to taxable debt. As the ratio approaches one, the cost of tax-exempt state and local borrowing approaches that of taxable borrowing. As shown in **Table 1**, the ratio was lowest in 1980 at 0.71 and reached a peak of 0.84 in 1982. For the last decade the ratio has been relatively stable.

These variations in the cost of state and local borrowing relative to the cost of taxable borrowing depend upon the demand for and supply of both tax-exempt and taxable bonds. Demand for tax-exempt bonds depends upon the number of investors, their wealth, statutory tax rates, and alternative investment opportunities. Supply depends upon the desire of the state and local sector for capital facilities and their ability to engage in conduit financing (issuing state or local government bonds and passing the proceeds through to businesses or individuals for their private use).

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[1] Dennis Zimmerman, "History of Municipal Bonds," in his *The Private Use of Tax-Exempt Bonds: Controlling the Public Subsidy of Private Activity* (Washington, The Urban Institute Press, 1991), pp. 17-27.

Almost all of the factors which influence demand and supply are affected by federal tax policy.

Table 1. Yield on Tax-Exempt and Corporate Bonds of Equivalent Risk, the Yield Spread, and the Yield Ratio: 1980 to 2007

Year	High Grade Tax-Exempt Yield (%)	AAA Corporate Yield (%)	Yield Spread (%)	Yield Ratio (tax-exempt/ corporate)
1980	8.51	11.94	3.43	0.71
1981	11.23	14.17	2.94	0.79
1982	11.57	13.79	2.22	0.84
1983	9.47	12.04	2.57	0.79
1984	10.15	12.71	2.56	0.80
1985	9.18	11.37	2.19	0.81
1986	7.38	9.02	1.64	0.82
1987	7.73	9.38	1.65	0.82
1988	7.76	9.71	1.95	0.80
1989	7.24	9.26	2.02	0.78
1990	7.25	9.32	2.07	0.78
1991	6.89	8.77	1.88	0.79
1992	6.41	8.14	1.73	0.79
1993	5.63	7.22	1.59	0.78
1994	6.19	7.96	1.77	0.78
1995	5.95	7.59	1.64	0.78
1996	5.75	7.37	1.62	0.78
1997	5.55	7.26	1.71	0.76
1998	5.12	6.53	1.41	0.78
1999	5.43	7.04	1.61	0.77
2000	5.77	7.62	1.85	0.76
2001	5.19	7.08	1.89	0.73
2002	5.05	6.49	1.44	0.78
2003	4.73	5.67	0.94	0.83
2004	4.63	5.63	1.00	0.82
2005	4.29	5.24	0.95	0.82
2006	4.42	5.59	1.17	0.79
2007	4.42	5.52	1.10	0.80

Source: Council of Economic Advisors, *Economic Report of the President*, February 2008, Table B-73.

What Does Tax Exemption Cost the Federal Government?

The direct cost to the federal government of this interest exclusion is the individual and corporate income tax revenue forgone. Consider a 35% marginal tax rate corporate investor who purchases a 6.5% tax-exempt bond with principal of $1,000 that is to be repaid after 20 years. Each year for 20 years this taxpayer receives $65 in tax-exempt interest income. Each year the federal government forgoes collecting $35 of revenue because the revenue loss is based upon the yield the taxpayer forgoes. For example, if the investor had purchased a taxable bond carrying a 10% interest rate, he would have received $100 in interest income and paid $35 in income taxes on that income.[2]

The annual federal revenue loss (or tax expenditure) on the outstanding stock of tax-exempt bonds is reported in the *Analytical Perspectives* section of the Budget every year. The estimates for the last 14 years are displayed in **Table 2**.[3] Because they are based upon the outstanding stock of public-purpose tax-exempt bonds, it takes time for some legislative changes to show up in these data. The amount of forgone tax revenue from the exclusion of interest income on public-purpose tax-exempt bonds is substantial, $23.5 billion in 2007.

Table 2. Tax Expenditure on the Outstanding Stock of Public Purpose Tax-Exempt Bonds: 1994 to 2007

(in billions)

Year	Tax Expenditure	Year	Tax Expenditure
1994	$19.6	2001	$27.4
1995	$20.4	2002	$29.9
1996	$24.9	2003	$31.1
1997	$19.9	2004	$26.2
1998	$24.6	2005	$26.4
1999	$27.5	2006	$23.0
2000	$26.8	2007	$23.5

Source: Office of Management and Budget. *Analytical Perspectives: Budget of the United States Government*, various years.

[2] The decision about preferred alternatives is critical to estimates of the revenue loss from tax-exempt bonds. An entire range of financial and real assets exists with different yields, risk, and degree of preferential taxation. It is not true that the municipal bond purchaser's preferred alternative is always a taxable bond.

[3] These estimates are derived by summing the revenue loss estimates for each activity listed in the tax expenditures budget. Technically, this is incorrect because each activity's revenue loss is calculated in isolation, and there are interactive effects. Nonetheless, without an estimate of the interactive effects' impact on revenue loss, the summing employed here provides the best available order of magnitude.

Why Does the Federal Government Subsidize State and Local Debt?

When first introduced in 1913, the federal income tax excluded the interest income earned by holders of the debt obligations of states and their political subdivisions from taxable income. It was asserted by many that any taxation of this interest income would be unconstitutional because the exemption was protected by the Tenth Amendment and the doctrine of intergovernmental tax immunity. The U.S. Supreme Court rejected this claim of constitutional protection in 1988 in *South Carolina v. Baker* (485 U.S. 505, [1988]).

Although the legal basis for the subsidy is statutory rather than constitutional, the policy reason for the subsidy is economic. Economic theory suggests that certain types of goods and services will not be provided in the correct or "optimal" amounts by the private sector because some of the benefits are consumed collectively, a street light for example. The Nation's welfare can be increased by public provision of these goods and services, and some of these public goods and services are best provided by state or local governments. However, some of the goods and services provided by state or local governments benefit both residents, who pay taxes, and nonresidents, who pay minimal if any taxes. Since state and local taxpayers are likely to be unwilling to provide these services to nonresidents without compensation, it is probable that state and local services will be under provided. In theory, the cost reduction provided by the exemption of interest income compensates state and local taxpayers for benefits provided to nonresidents and encourages these governments to provide the optimal amount of public services.

Classifying State and Local Debt Instruments

State and local debt can be classified based on (1) the *maturity* (or term), which is the length of time before the principal is repaid; (2) the *type of security*, which is the financial backing for the debt; (3) the *use of the proceeds* for either new facilities or to refinance previously-issued bonds; and (4) whether the *type of activity* being financed has a public or a private purpose. Another important factor is the level risk. Just about every bond issued by a state or local government is rated based on the probability of default. The privately managed rating agencies incorporate all of the above factors as well as the financial health of the entity issuing the bonds when arriving upon a bond rating. The higher the default risk, the lower the rating.

Maturity: Short-Term vs. Long-Term

Tax and Revenue Anticipation Notes. State and local governments must borrow money for long periods of time and for short periods of time. Long-term debt instruments are usually referred to as bonds, and carry maturities in excess of one year. Short-term debt instruments are usually referred to as notes, and carry maturities of 12 months or less. If the notes are to be paid from specific taxes due in the near future, they usually are called tax anticipation notes (TANs); if from anticipated intergovernmental revenue, they are called revenue anticipation notes (RANs). If the notes are to be paid from long-term borrowing (e.g., bonds), they are

called bond anticipation notes (BANs). Tax anticipation notes and revenue anticipation notes are often grouped together and referred to as tax and revenue anticipation notes (TRANs). **Table 3** displays the volume of long-term and short-term borrowing since 1980. Long-term borrowing dominates state and local debt activity in most years, with the long-term share peaking in 1985 at over 90% of this market.

Table 3. Volume of State and Local Tax-Exempt Debt: 1980 to 2007

Year	Short-Term (in millions)	Long-Term (in millions)	Long-Term Share of Total
1980	$26,485	$47,133	64.0%
1981	$34,443	$46,134	57.3%
1982	$43,390	$77,179	64.0%
1983	$35,849	$83,348	69.9%
1984	$31,068	$101,882	76.6%
1985	$20,809	$206,991	90.9%
1986	$22,046	$150,638	87.2%
1987	$20,518	$105,027	83.7%
1988	$23,666	$117,316	83.2%
1989	$29,596	$125,005	80.9%
1990	$34,804	$127,828	78.6%
1991	$44,800	$172,443	79.4%
1992	$42,894	$234,667	84.5%
1993	$47,354	$292,249	86.1%
1994	$40,293	$165,034	80.4%
1995	$38,346	$159,983	80.7%
1996	$41,695	$185,014	81.6%
1997	$46,434	$220,672	82.6%
1998	$34,584	$286,817	89.2%
1999	$36,511	$227,741	86.2%
2000	$41,249	$200,880	83.0%
2001	$56,610	$288,083	83.6%
2002	$72,386	$358,569	83.2%
2003	$69,771	$383,498	84.6%
2004	$56,951	$359,695	86.3%
2005	$50,544	$408,193	89.0%
2006	$44,126	$388,656	89.8%
2007	$57,999	$429,727	88.1%

Source: *The Bond Buyer Yearbook*, 2007 and earlier editions.

Auction Rate Securities. Auction Rate Securities (ARSs) are long-term debt obligations with the unique feature of adjustable or variable interest rates. In contrast to long-term, fixed rate securities, issuers go to auction periodically (anywhere from every 7 to 35 days) to reset the interest rate on the debt outstanding. The auction mechanism and interest rate parameters vary by issuer (and issue) though most use what is termed a "Dutch auction" where each bidder submits a bid for the amount they are willing to purchase at a given interest rate. All bids are ordered from lowest interest rate to highest interest rate and the rate where the market clears, e.g.,

where all bonds would be purchased, establishes the new ARS rate. All bidders receive that rate.

Unique Features of ARSs. ARSs typically have a "call option" where the issuer can buy the ARS back at par (face value) at any scheduled auction and then retire the debt. Most ARSs are insured by the issuer because they *do not* carry a "put" option that would allow bondholders to sell the bonds at a specified price to the issuer or a designated third party. The bond insurance reduces risk and thus interest rate making the bonds less costly to issuers. For this reason, ARSs are

> very sensitive to changes in credit ratings and normally require the highest ratings (e.g. AAA/Aaa) to make them marketable. This is usually achieved with bond insurance.[4]

A Failed Auction. The existing holders of ARSs offer bids as well as new bidders. If all bids of both existing bond holders and new participants fail to clear the market, the auction is termed a "failed auction." In this scenario, the original agreement with bondholder stipulates a "reservation" interest rate the issuer must pay in the event of a failed auction at least until the next successful auction. The reservation rate is typically significantly higher than current market interest rates. Because the rate is higher than market interest rates, issuers of ARSs wish to avoid paying the reservation rate.

Growth of ARSs. The issuance of ARSs has grown considerably in the last 20 years. In 1988, the Bond Buyer identified one ARS issue valued at $25 million; none were issued in 1987.[5] In 2004, the peak year, 438 ARS bonds valued at $42.5 billion were issued. The number of ARSs issues has since dropped to 322 and $38.7 billion in 2007.

Security: General Obligation, Revenue, and Lease Rental Bonds

Another important characteristic of tax-exempt bonds is the security provided to the bondholder. General obligation (GO) bonds pledge the full faith and credit of the issuing government. The issuing government makes an unconditional pledge to use its powers of taxation to honor its liability for interest and principal repayment. Revenue bonds, or non-guaranteed debt, pledge only the earnings from revenue-producing activities, most often the earnings from the facilities being financed with the revenue bonds. Should these earnings prove to be inadequate to honor these commitments, the issuing government is under no obligation to use its taxing powers to finance the shortfall. Some revenue bonds are issued with credit enhancements provided by insurance or bank letters of credit that guarantee payment upon such a revenue shortfall.

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[4] Douglas Skarr, California Debt and Investment Advisory Commission, "Auction Rate Securities," *Issue Brief*, Aug. 2004, pp. 2-3.

[5] *The Bond Buyer 2007 Yearbook*, SourceMedia Inc., New York, NY.

The first two columns of **Table 4** display the breakdown between long-term GO and revenue bonds since 1980. The long-term market has been and continues to be dominated by revenue bonds, which are nonguaranteed debt instruments. During the 1960s (not shown in this table), revenue bonds constituted less than 40% of long-term bond volume; during the 1970s (also not shown) the revenue bond share crept into the 50% to 65% range; and beginning in 1979 this share settled into the high 60s and low 70s, achieving a high of 73.1% in 1988. The revenue bond share has remained at or just below 70% from 1989 through 2007.

Table 4. Volume of Long-Term Tax-Exempt Debt: General Obligation (GO), Revenue, and Refunding Bonds, 1980 to 2007

(in millions)

Year	Long-Term Bond Volume			Refunding Bonds	
	General Obligation	Revenue	Revenue Share	Amount	Refunding Share
1980	$16,347	$30,786	65.3%	$1,649	3.5%
1981	$13,988	$32,146	69.7%	$1,192	2.6%
1982	$23,276	$53,903	69.8%	$4,044	5.2%
1983	$22,584	$60,764	72.9%	$13,048	15.7%
1984	$27,508	$74,374	73.0%	$11,390	11.2%
1985	$55,287	$148,994	72.9%	$57,867	28.3%
1986	$45,555	$105,417	69.8%	$56,063	37.1%
1987	$30,867	$74,656	70.7%	$38,490	36.5%
1988	$31,502	$85,509	73.1%	$36,591	31.3%
1989	$38,501	$86,504	69.2%	$28,842	23.1%
1990	$40,303	$87,526	68.5%	$19,881	15.6%
1991	$57,110	$115,334	66.9%	$41,444	24.0%
1992	$80,479	$154,188	65.7%	$92,446	39.4%
1993	$91,555	$200,694	68.7%	$150,152	51.4%
1994	$55,767	$109,267	66.2%	$38,601	23.4%
1995	$60,367	$99,615	62.3%	$33,850	21.2%
1996	$64,344	$120,670	65.2%	$45,941	24.8%
1997	$72,297	$148,201	67.2%	$60,161	27.3%
1998	$93,644	$193,031	67.3%	$81,957	28.6%
1999	$71,046	$156,695	68.8%	$38,330	16.8%
2000	$66,573	$134,308	66.9%	$19,587	9.8%
2001	$101,652	$186,431	64.7%	$64,699	22.5%
2002	$125,675	$232,894	65.0%	$92,350	25.8%
2003	$142,767	$240,731	62.8%	$95,240	24.8%
2004	$129,527	$230,168	64.0%	$88,276	24.5%
2005	$144,170	$264,023	64.7%	$130,877	32.1%
2006	$114,858	$273,798	70.4%	$79,163	20.4%
2007	$131,676	$298,051	69.4%	$75,654	17.6%

Source: *The Bond Buyer Yearbook*, 2007 and earlier editions.

All tax-exempt interest income attributable to state and local governments does not appear in the form of bonds. Governments may engage in installment purchase contracts and finance leases for which the portion of the installment or lease payment to a vendor is tax exempt. For example, computer equipment or road building equipment could be leased from a vendor using a rental agreement or an installment

sales contract. Under this type of agreement, the monthly payments to the vendor are large enough to cover the vendor's interest expense on the funds borrowed to purchase the equipment which was leased to the government. This portion that is attributable to interest income is not included in the vendors taxable income. Such transactions are often referred to as municipal leasing.

Lease rental revenue bonds and certificates are variations on revenue bonds. An authority or nonprofit corporation issues bonds, builds a facility with the proceeds, and leases the facility to a municipality. Security for the bonds or certificates is based on the lease payments. When the bonds are retired, the facility belongs to the lessee (the municipality). An advantage to this type of arrangement is that many states' constitutional and statutory definitions do not consider this type of financing to be debt because the lease payments are annual operating expenses based upon appropriated monies.

The leasing technique has also been used to provide tax-exempt funds to nonprofit organizations. A municipality issues the bonds for the construction of a facility that is leased to a nonprofit hospital or university. Again, security for the bonds is based on the lease payments.

Use of the Proceeds: New-issue vs. Refunding Bonds

Long-term tax-exempt bond issues also can be characterized by their status as new issues or refunding issues. New issues represent bonds issued to finance new capital facilities. Refundings usually are made to replace outstanding bonds with bonds that carry lower interest rates or other favorable terms. As such, the refunding bonds usually do not add to the stock of outstanding bonds or the capital stock. The proceeds of the refunding bonds are used to pay off the remaining principal of the original bond issue, which is retired. Advance refunding bonds, however, do add to the outstanding stock of bonds without adding to the stock of capital. Advance refunding bonds are issued prior to the date on which the original bonds are refunded, so that for a period of time there are two bond issues outstanding to finance the same capital facilities.

The last two columns of **Table 4** show the dollar value of refunding issues and their share of total long-term bond volume. The share varies widely, depending to a great extent on changes in the relative magnitudes of taxable and tax-exempt interest rates. Note that the 1993 increase in the top marginal individual income tax rates may have increased the demand for tax-exempt bonds. Higher tax rates make tax-exempt bonds more attractive relative to taxable bonds, all other things being equal. The increased demand and accompanying lower interest rates may have prompted state and local governments to replace outstanding issues with refunding bonds that carried lower interest rates. In contrast, refundings dropped considerably in 1999 and 2000. The decline could have been in response to higher interest rates or to strong economic conditions in most states which minimized the need for debt finance generally. The story is reversed from 2001 to 2003 as the economy slowed and state budgets were strained by lower tax revenue collections. New issues in 2003 were more than double the amount of new issues in 2000. In 2005, GO bonds and refunding bond volume peaked, likely reflecting the historically low interest rates on tax-exempt debt (see **Table 1**).

Public Purpose vs. Private Purpose

An important characteristic of tax-exempt bonds is the purpose or activity for which the bonds are issued. Most of the tax legislation pertaining to tax-exempt bonds over the last 30 years reflects an effort to restrict tax exemption to bonds issued for activities that satisfy some broadly defined "public" purpose, that is, for which federal taxpayers are likely to receive substantial benefits. Bonds are considered to be for a public purpose if they satisfy either of two criteria: less than 10% of the proceeds are used directly or indirectly by a non-governmental entity; or less than 10% of the bond proceeds are secured directly or indirectly by property used in a trade or business. Bonds that satisfy either of these tests are termed "governmental" bonds and can be issued without federal limit. Bonds that fail both of these tests are termed "private-activity" bonds (PABs) because they provide significant benefits to private individuals or businesses. These projects are ineligible for tax-exempt financing.

Activities which fail the two tests but are considered to provide both public and private benefits have been termed eligible or *qualified* PABs. These selected activities can be financed with tax-exempt bonds. **Table 5** provides the dollar value of new issues of tax-exempt private-activity bonds and their share of total private-activity volume capacity for 2005 and 2006. **Table 6** provides historical data on the portion of PAB volume to total bond volume.

Table 5. Private-Activity Bond Volume by Type of Activity in 2005 and 2006

Private Activity	Issued in (in millions)		Portion of Available Capacity	
	2005	2006	2005	2006
Total Volume Capacity Available	$49,142	$48,675	100.0%	100.0%
New Volume Capacity	$26,079	$26,438	53.1%	54.3%
Carryforward from Previous Years	$23,063	$23,277	46.9%	47.8%
Carryforward to Next Year	$26,337	$22,638	53.6%	46.5%
Single-family Mortgage Revenue	$6,507	$10,093	13.2%	20.7%
Multi-family Housing	$5,562	$6,252	11.3%	12.8%
Student Loans	$5,124	$4,018	10.4%	8.3%
Exempt Facilities	$1,915	$2,605	3.9%	5.4%
Abandon Capacity	$910	$1,417	1.9%	2.9%
Industrial Development	$1,000	$1,195	2.0%	2.5%
Housing not Classified	$822	$562	1.7%	1.2%
Mortgage Credit Certificates	$493	$510	1.0%	1.0%
Other Activities	$485	$284	1.0%	0.6%

Source: "State Allocations of Private-Activity Bonds in 2005," *The Bond Buyer*, May 1, 2006; and "State Allocations and Use of Private-Activity Bonds in 2006," *The Bond Buyer*, June 25, 2007.

Private Activities Eligible for Tax Exemption

All tax-exempt private-activity bonds are subject to restrictions that do not apply to governmental bonds, chief among them being no advance refundings and the

inclusion of the interest income in the alternative minimum income tax base. In addition, the annual dollar value of all bonds issued for most of these activities by all governmental units within a state is limited to the greater of $85 per resident or $262.095 million in 2008. The cap has been adjusted for inflation since 2004. The annual volume cap applies to the total of bonds issued primarily for but not limited to multi- and single-family housing, industrial development, exempt facilities,[6] student loans, and bond-financed takeovers of investor owned utilities (usually electric utilities).

Table 6. New-Money, Long-Term Private-Activity Bond Volume as Percent of Total Bond Volume, 1988 to 2005

Year	Total Bond Volume (in millions)	Private Activity Bond (in millions)	Percent of Total Volume
1988	$119,367.8	$29,365.1	24.6%
1989	$125,530.5	$27,650.2	22.0%
1990	$128,045.8	$31,426.0	24.5%
1991	$173,071.5	$27,809.6	16.1%
1992	$235,413.1	$26,868.0	11.4%
1993	$293,052.2	$21,230.6	7.2%
1994	$165,101.3	$25,054.9	15.2%
1995	$161,817.1	$27,942.7	17.3%
1996	$185,207.4	$31,262.0	16.9%
1997	$220,671.7	$37,550.0	17.0%
1998	$286,816.9	$46,288.0	16.1%
1999	$227,740.5	$47,408.0	20.8%
2000	$200,880.0	$41,392.0	20.6%
2001	$288,082.9	$49,356.0	17.1%
2002	$358,568.6	$50,248.0	14.0%
2003	$383,559.3	$45,633.0	11.9%
2004	$359,717.2	$47,877.0	13.3%
2005	$408,260.0	$54,691.0	13.4%

Sources: The 1988 to 1995 data are from Nutter, Sarah, "Tax-Exempt Private Activity Bonds, 1988-1995," *SOI Bulletin*, Summer 1999; Belmonte, Cynthia, "Tax-Exempt Bonds, 2003-2004,: *SOI Bulletin*, Fall 2006 ; and Belmonte, Cynthia, "Tax-Exempt Bonds, 2005, *SOI Bulletin*, Fall 2007. Total long-term bond volume data are from the *Bond Buyer Yearbook 2007*.

[6] Exempt facilities subject to the volume cap are the following: mass commuting facilities, water furnishing, sewage treatment, solid waste disposal, residential rental projects, electric energy or gas furnishing, local district heating or cooling provision, and hazardous waste disposal and 25% of high-speed rail facility bonds. 26 I.R.C. Section 141(e), Section 142(a), and 146(g).

Bonds issued for several activities classified as private are not subject to the volume cap if the facilities are governmentally owned.[7] These activities are airports, docks, and wharves; nonprofit organization facilities; high-speed inter-urban rail facilities; and solid waste disposal facilities that produce electric energy. **Table 7** below reports the estimated tax expenditure for selected private activities that qualify for financing with tax-exempt debt.

Table 7. Federal Tax Expenditure for Selected Private Activities Financed with Tax-Exempt Bonds

Private Activity	2007 Tax Expenditure (in millions)	Percentage of Total
Total of Selected Activities	*$8,310*	*100.00%*
Energy Facilities	$30	0.36%
Water, Sewerage, and Hazardous Waste Disposal	$370	4.45%
Small-Issues	$350	4.21%
Owner-Occupied Mortgage Subsidy	$900	10.83%
Rental Housing	$830	9.99%
Airports, Docks, and Similar Facilities	$850	10.23%
Student Loans	$440	5.29%
Private Nonprofit Educational Facilities	$1,750	21.06%
Hospital Construction	$2,760	33.21%
Veterans' Housing	$30	0.36%

Source: Office of Management and Budget. *Analytical Perspectives: Budget of the United States Government*, Fiscal Year 2009, Table 19-1, pp. 287-291.

Recently, Congress has further expanded the types of private activities eligible for tax-exempt financing and has increased the capacity for selected activities and issuers. A brief description of legislation that Congress has enacted since 2001 follows below.

Economic Growth and Tax Relief Reconciliation Act of 2001. As part of the Economic Growth and Tax Relief Reconciliation Act of 2001 (P.L. 107-16), a new type of tax-exempt private-activity bond was created beginning on January 1, 2002.[8] The act expanded the definition of "an exempt facility bond" to include bonds

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[7] This does not mean governmental ownership in the conventional sense. It simply means that lease arrangements for private management and operation of bond-financed facilities must be structured to deny accelerated depreciation benefits to the private operator, lease length must conform to the facility's expected service life, and any sale of the facility to the private operator must be made at fair market value. 26 I.R.C. Section 146(g).

[8] For a more extensive explanation of the tax exempt bond provisions in EGTRRA, see CRS
(continued...)

issued for qualified public educational facilities. Bonds issued for qualified educational facilities are not counted against a state's private-activity volume cap. However, the qualified public educational facility bonds have their own volume capacity limit equal to the greater of $10 multiplied by the State population or $5 million. Since nearly all states would be better off with the $10 per capita limit, the potential new debt would have been approximately $2.8 billion in 2001 if the bonds were available in 2001.

Job Creation and Worker Assistance Act of 2002. The JCWA 2002 (P.L. 107-147) created the New York Liberty Zone (NYLZ) in the wake of the September 11, 2001, terrorist attacks. The legislation included several tax benefits for the NYLZ intended to foster economic revitalization within the NYLZ. Specifically, the so-called "Liberty Bond" program allows New York State (in conjunction and coordination with New York City) to issue up to $8 billion of tax-exempt private-activity bonds for qualified facilities in the NYLZ. Qualified facilities follow the exempt facility rules within section 142 of the IRC. The original deadline to issue the bonds was January 1, 2005, but was extended to January 1, 2010, by P.L. 108-311.

American Jobs Creation Act. In 2004, the American Jobs Creation Act (P.L. 108-357) created bonds for "qualified green building and sustainable design projects." The bonds are exempt from the state volume cap and are instead limited to an aggregate of $2 billion for bonds issued between January 1, 2005 and October 1, 2009.

The Safe, Accountable, Flexible, Efficient, Transportation Equity Act of 2005. This legislation created a new type of tax-exempt private activity bond for the construction of rail to highway (or highway to rail) transfer facilities. The national limit is $15 billion and the bonds are not subject to state volume caps for private activity bonds. The Secretary of Transportation allocates the bond authority on a project-by-project basis.

Gulf Opportunity Zone Act of 2005. The hurricanes that struck the Gulf region in late summer 2005, prompted Congress to create a tax-advantaged economic development zone intended to encourage investment and rebuilding in the Gulf region. The Gulf Opportunity Zone, (GOZ), is comprised of the counties where the Federal Emergency Management Agency (FEMA) declared the inhabitants to be eligible for individual and public assistance. Based on proportion of state personal income, the Katrina-affected portion of the GOZ represents approximately 73%of Louisiana's economy, 69% of Mississippi's, and 18% of Alabama's.[9]

Specifically, the "Gulf Opportunity Zone Act of 2005" (GOZA 2005, P.L. 109-135) contains two provisions that would expand the amount of private-activity bonds

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[8] (...continued)
Report RS20932 *Tax-Exempt Bond Provisions in the "Economic Growth and Tax Relief Reconciliation Act of 2001"*, by Steven Maguire.

[9] See CRS Report RL33154, *The Impact of Hurricane Katrina on the State Budgets of Alabama, Louisiana, and Mississippi*, by Steven Maguire.

outstanding and language to relax the eligibility rules for mortgage revenue bonds. The most significant is the provision to increase the volume cap (see **Table 3**) for private-activity bonds issued for Hurricane Katrina recovery in Alabama, Louisiana, and Mississippi (identified as the Gulf Opportunity Zone, or "GO Zone"). GOZA 2005 would add $2,500 per person in the federally declared Katrina disaster areas in which the residents qualify for individual and public assistance.

The increased volume capacity would add approximately $2.2 billion for Alabama, $7.8 billion for Louisiana, and $4.8 billion for Mississippi in aggregate over the next five years. The legislation defines "qualified project costs" that can be financed with the bond proceeds as (1) the cost of any qualified residential rental project (26 sec. 142(d)); and (2) the cost of acquisition, construction, reconstruction, and renovation of — (i) nonresidential real property (including fixed improvements associated with such property) and (ii) public utility property (26 sec. 168(i)(10)), in the GOZ. The additional capacity would have to be issued before January 1, 2011. The provision is estimated to cost $1.556 billion over the 2006-2015 budget window.[10]

The second provision allows for advance refunding of certain tax-exempt bonds. Under GOZA 2005, governmental bonds issued by Alabama, Louisiana, and Mississippi may be advance refunded an additional time and exempt facility private-activity bonds for airports, docks, and wharves once. Private-activity bonds are otherwise not eligible for advance refunding (see earlier discussion of advance refunding).

What Are Arbitrage Bonds?

Many individuals and businesses make money by engaging in arbitrage, borrowing money at one interest rate and lending that borrowed money to others at a higher interest rate. The difference between the rate at which one borrows and the rate at which one lends produces arbitrage earnings. At its most basic level, it is the primary activity of commercial banks — pay depositors an interest rate of "x" and use the deposits to make commercial, automobile, and home loans at "x + y" interest rate. In this context, arbitrage is a time-honored and appropriate financial market activity.

That is not the case in the tax-exempt bond market. State and local governments do not pay federal income tax, and absent federal constraint, have unlimited capacity to issue debt at low interest rates and reinvest the bond proceeds in higher-yielding taxable debt instruments, thereby earning arbitrage profits. Unchecked, state and local governments could substitute arbitrage earnings for a substantial portion of their own citizens' tax effort.

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[10] The 10-year revenue loss estimates for GOZA 2005 are from the Joint Committee on Taxation, *Estimated Revenue Effects of H.R. 4440, the'Gulf Opportunity Tax Relief Act of 2005,'* as passed by the House of Representatives and the Senate on Dec. 16, 2005, JCX-89-05, Dec. 20, 2005.

Congress has decided that such arbitrage should be limited, and that tax-exempt bond proceeds must be used as quickly as possible to pay contractors for the construction of the capital facilities for which the bonds were issued. Since it is impossible for bonds to be issued precisely when contractors must be paid for their expenses incurred in building public capital facilities, the tax law provides a three-year period to spend an increasing share of the bond proceeds. Bond issues that have unspent proceeds in excess of the allowed amounts during this three-year spend-down schedule must rebate any arbitrage earnings to the Department of the Treasury. Bond issues are considered to be taxable arbitrage bonds if a governmental unit, in violation of the arbitrage restriction in the tax code, invested a substantial portion of the proceeds "to acquire higher yielding investments, or to replace funds which were used directly or indirectly to acquire higher yielding investments."[11]

What Are Tax Credit Bonds?

The 1997 Taxpayer Relief Act created a new category of tax preferred state and local bonds, the qualified zone academy bond (QZAB) for renovating public school facilities. Congress authorized QZAB debt of $400 million a year for 1998 through 2005 or $3.2 billion over the eight years. The annual limit is allocated among the states in proportion to their share of all individuals below the poverty line.[12]

In 2005, Congress created two new types of tax credit bonds called Clean Renewable Energy Bonds (CREBs) and Gulf Tax Credit Bonds (GTCBs). CREBs were created with the enactment of the Energy Policy Act of 2005, P.L. 109-58.[13] The bonds are intended to encourage the development of renewable energy sources. As with QZABs, purchasers of CREBs receive federal tax credits in lieu of interest payments, and the borrower only repays the principal. The total CREB bond volume is limited to $800 million nationally, and the bonds must be issued before January 1, 2008. Only $500 million may be allocated to qualified projects of qualified borrowers "...which are governmental bodies."[14] In addition, a third party must spend at least 10% of the proceeds of the issue for the bond to qualify. The third party would likely be a private business or individual that would benefit from the CREB expenditures.

After Hurricane Katrina, Congress created yet another tax credit bond called Gulf Tax Credit Bonds (GTCBs). These tax credit bonds are different from the others in that the maturity is capped at two years, and only three states can issue a limited amount: Alabama ($50 million), Louisiana ($200 million), and Mississippi ($100 million). The tax credit rate will approximate the interest rate on equivalent two-year taxable securities. In addition, GTCBs require an equal match from the issuing state. The proceeds from the bonds can be used to pay principal, interest, or

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[11] 26 I.R.C. Section 148(a).

[12] For a more detailed explanation of tax credit bonds or QZABs, see CRS Report RS20606, *Tax Credit Bonds: A Brief Explanation*, by Steven Maguire.

[13] 119 Stat. 594.

[14] 119 Stat. 994.

premiums on state governmental bonds or make loans to any political subdivision of the state to then be used to pay principal, interest, or premiums on the political subdivision's governmental bonds. The bonds can only be issued in 2006.

The subsidy for tax credit bonds is not provided in the form of the exemption of interest income from federal income tax, as is true for tax-exempt bonds, including bonds issued for public elementary and secondary education facilities. Rather, the subsidy for them is a credit taken by eligible financial institutions against the federal taxes they owe. The credit rate is calculated by the Treasury Department such that the bonds can be issued without discount and without any interest cost to the issuer. Unlike QZABs, where issuers are chosen by the state, issuers of CREBs are selected by the Secretary of Treasury. For GTCBs, the governor of the issuing state designates the use of the bond proceeds.

One way to think of this alternative subsidy is that financial institutions can be induced to purchase these bonds if they receive the same after-tax return from the tax credit bonds that they would from the tax exemption. The value of the credit must be included in taxable income, but is then used to reduce regular or alternative minimum tax liability. Assuming the taxpayer is subject to the regular corporate income tax, the credit rate should equal the ratio of the purchaser's forgone market interest rate on tax-exempt bonds divided by one minus the corporate tax rate. For example, if the tax-exempt interest rate is 6% and the corporate tax rate is 35%, the credit rate would be equal to 0.06/(1-0.35), or about 9.2%. Thus, a financial institution purchasing a $1,000 tax credit bond would receive a $92 tax credit for each year it holds the bond.

The implicit subsidy is much greater for tax credit bonds than for tax-exempt bonds. All of the interest costs for tax credit bonds are paid by the federal taxpayer. For tax-exempt bonds, the federal taxpayer absorbs only the difference between the taxable and tax-exempt interest rates. For example, if the taxable rate is 9.2% and the tax-exempt rate is 6%, the non-tax credit bond receives a subsidy equal to 3.2 percentage points, the difference between 9.2% and 6%. The tax credit bond receives a subsidy equal to all 9.2 percentage points.

The relationship between three types of bonds, all with the same after-tax yield of 6%, is presented in **Table 8**. The most important column is the last, titled "Implicit Subsidy to Borrower," which is synonymous with the federal revenue *loss* presented in **Table 2** for all outstanding tax-exempt debt. The implicit subsidy is the amount the borrower saves because of favorable federal tax treatment. In the case of tax credit bonds, the subsidy is considerably greater than with traditional tax-exempt bonds.

Table 8. Comparison of Three Types of Bonds with a 6% After-Tax Yield

(numbers are in percentage of bond proceeds assuming a corporate taxpayer is in the 35% marginal tax bracket)

Type of Bond	Borrower Pays	Lender Receives	Taxes Paid by Lender	Federal Tax Revenue from Bond	Implicit Subsidy to Borrower
Taxable	9.2	9.2	3.2	+3.2	0.0
Tax-exempt	6.0	6.0	0.0	0.0	3.2
Tax Credit	0.0	9.2[a]	3.2[b]	-6.0[b]	9.2

a. The lender is allowed to reduce its tax liability by the amount of the credit.

b. The federal government receives some additional tax revenue because the credit is included in taxable income. However, the loss in revenue from the credit exceeds the revenue gain producing the negative revenue effect.

Legislative Issues

Current legislative interest focuses on altering the tax treatment of state and local debt to provide even greater financial support for a variety of public projects such as education infrastructure, healthcare facilities, and rapid transit. There are several ways the federal government can increase the federal subsidy to state and local governments that issue tax-exempt bonds for these targeted purposes. One, arbitrage rules could be loosened to allow the state or local government to earn more investment income on unused bond proceeds. Less stringent arbitrage rules may also reduce the compliance burden of some smaller government entities freeing more funds for the project. Two, the federal government can change the rules for private activities that qualify for tax-exempt financing. If more activities qualified to use tax-exempt debt finance by virtue of any proposed rules changes, previous congressional efforts to limit the use of tax-exempt debt for non-governmental projects would be mitigated. Third, Congress could introduce a new type of tax favored instrument, such as tax credit bonds, for a broader range of activities.

In addition to the three options highlighted above, many other methods can be employed to enhance the federal subsidy for state and local government capital formation. The desire to subsidize state and local capital formation, which in many cases may be justified, must be weighed against the federal revenue loss and the potential for misallocation of federal tax revenue.

Suggested Readings

Ballard, Frederic L., Jr. *ABCs of Arbitrage: Tax Rules for Investment of Bond Proceeds by Municipalities* (Chicago: Urban, State, and Local Government Law Section, American Bar Association, 1992).

Describes and explains arbitrage and the arbitrage tax rules that control state and local investment practices.

Congressional Budget Office. *The Tax-Exempt Financing of Student Loans* (Washington: GPO, August 1986).

Provides a legislative history of student loan bonds, describes the operation of student loan authorities, estimates the costs of student loan bonds, and discusses policy alternatives.

Congressional Budget Office. *Small Issue Industrial Development Bonds* (Washington: GPO, September 1981).

Describes the growth, uses, and effects of small-issue IDBs, and discusses policy alternatives.

U.S. Government Accountability Office. *Home Ownership: Mortgage Bonds Are Costly and Provide Little Assistance to Those in Need*. GAO Report RCED-88-111, March 1988.

Discusses the structure and operation of mortgage revenue bonds and analyzes whether the bonds are successful in increasing home ownership for the target population of lower-income households.

Hilhouse, Albert M. *Municipal Bonds: A Century of Experience* (New York: Prentice-Hall, 1936).

The classic history of the use and development of municipal bonds from their introduction in the 19th century.

Petersen, John E., and Ronald Forbes. *Innovative Capital Financing* (Chicago: American Planning Association, 1985).

Provides discussion of the numerous variations on tax-exempt bonds that have been developed to raise capital for the state and local sector, such as sale-leasebacks, installment purchase contracts, etc.

Public Securities Association. *Fundamentals of Municipal Bonds* (New York: Public Securities Association, 1987).

Describes the structure and functioning of the state and local debt markets.

U.S. Senate. Committee on the Budget. *Tax Expenditures: Compendium of Background Material on Individual Provisions*. S.Prt. 106-65. 106th Congress, 2nd session, December 2000.

Provides description, revenue loss estimate, and economic analysis of the effects of governmental bonds and each major category of private-activity bond.

Zimmerman, Dennis. *The Private Use of Tax-Exempt Bonds: Controlling Public Subsidy of Private Activity* (Washington: The Urban Institute Press, 1991).

Provides institutional background: history, legal framework, and industry characteristics. Provides discussion of tax-exempt bonds as an economic policy tool affecting: intergovernmental fiscal relations, the federal budget deficit, efficient resource allocation, and tax equity. Provides a history and economic analysis of tax-exempt bond legislation from 1968 to 1989.