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PAPER

Tax-Credit Bonds and the Federal Cost of Financing Public Expenditures

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Preface

Tax-credit bonds—bonds on which the federal government pays "interest" in the form of credits against federal income tax liability—have been proposed as a mechanism for financing various expenditures at all levels of government. In instances in which the bonds would be used as an alternative to federal appropriations as a source of funding, the cost to the federal government would be greater than it would be with financing through conventional borrowing by the Department of the Treasury. But carefully designed tax-credit bonds could cost the federal government less per dollar of assistance provided to state and local governments than the federal tax exemption now accorded "municipal" bonds issued by those governments. This Congressional Budget Office (CBO) paper explains those conclusions; however, in accordance with CBO's mandate to provide impartial analysis, the report makes no recommendations.

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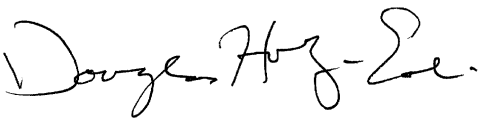

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A relatively new debt instrument, the tax-credit bond, has gained some favor as a way to finance public expenditures for transportation, schools, and other programs. The bonds, whose use must be specifically authorized in the tax code, allow their purchasers to receive a nonrefundable credit against their federal income tax liability instead of the cash interest that is typically paid on the borrowing that bonds represent. With tax-credit bonds, the federal government bears virtually all of the cost of borrowing—in the form of forgone revenues—even if the bonds are issued by a nonfederal entity such as a state or local government.

Advocates of tax-credit bonds are seeking authority to use the proceeds from the bonds' sale to provide multiyear funding for transportation or other public programs that might otherwise be financed through annual appropriations. Supporters of programs for which such bonds have been proposed find the idea attractive, in part because the approach would eliminate the need for yearly legislative action. But that proposed use could make the federal budget a less comprehensive measure of the government's costs. Unless the entity issuing the bonds was part of or controlled by the federal government, or was acting on the government's behalf, the program's spending (the actual outlays for a transportation project, for example) would not show up in the federal budget, nor would the borrowing be part of the federal debt. Thus, the spending and borrowing of state and local governments that issued such bonds would not appear in the federal budget. The cost of the tax-credit bonds for the federal government (the forgone revenues) would affect the federal deficit or surplus but would not appear as a line item in the budget.

Tax-credit bonds will always be a more expensive way of financing programs' spending than the government's conventional borrowing from the public will be. That borrowing is carried out by the Department of the Treasury, which issues bonds and other types of debt. Conventional Treasury securities are the "gold standard" of bonds because they are free of default risk and highly liquid. Any other means of raising funds can be expected to cost more.

Nevertheless, one use of tax-credit bonds that could prove advantageous for the federal government would be as a substitute for the exemption of interest income that federal tax law now accords traditional bonds—often referred to as municipal bonds—issued by state and local governments. (The federal assistance that the exemption effectively provides to those nonfederal entities allows them to borrow at a lower cost than they would otherwise have had to pay.) Such tax-credit bonds could be designed to provide the same amount of assistance that the exemption now offers but at a lower cost to the federal government. Thus, although tax-credit bonds issued in lieu of Treasury securities and those issued in lieu of traditional state and local bonds would have the tax-credit feature in common, they would differ in one important respect: the former would cost the federal government more than conventional financing, and the latter—if carefully structured—would cost the federal government less.

What Are Tax-Credit Bonds?

Bonds are a means of borrowing. In exchange for immediate cash from the purchaser of a bond, the bond's issuer pledges payments in the future. Conventional bonds entail a promise to repay the amount borrowed (the principal) at the end of a stated period (often 10 or 20 years) and a promise to pay interest in cash (usually semiannu-

ally) until the principal is repaid.[1] In general, that interest is subject to federal income tax. A notable exception is the interest on bonds issued by state and local governments, which is tax-free.

In the case of tax-credit bonds, bondholders receive a credit against their federal income tax liability instead of cash interest.[2] Bondholders must report the tax credit as income, but after calculating their tax liability as if they had received that compensation in cash, they can subtract the amount of the credit from the tax due. Although the federal government effectively pays the interest on the bonds by granting tax credits, the repayment of the principal at maturity is the responsibility of the entity that issues the bonds.

The value of the tax credits that bondholders receive in lieu of interest on a long-term security is substantial. For example, consider a 20-year tax-credit bond with an interest rate of 5 percent. The present value of the principal repayment would be only 38 percent of the face value (the principal) of the bond.[3] The remaining 62 percent would be the value of the tax credits from the federal government.

If the authorizing legislation did not restrict the use of the proceeds, the bond-issuing entity might put aside some of the proceeds from the bond's sale and invest them to fulfill its obligation to repay the principal at maturity, a process known as defeasement.[4] Suppose that a state issued $100 million in tax-credit bonds for an infrastructure program. Using the defeasement mechanism, it would invest $38 million of the proceeds to repay the principal and would have $62 million—the value of the tax credits provided by the federal government—to spend on the program. One could view the transaction either as a joint federal/state financing of $100 million or as an entirely federal financing of $62 million for the benefit of the state.

The stream of tax credits that substitutes for interest over the term of a tax-credit bond is not contractual; in principle, the credits could be revoked before the bond matured, leaving the bondholders little legal recourse to recover their loss (the value of the credits that was substituting for interest). Practically speaking, however, a provision that authorizes tax credits offers much the same promise of future payments as that provided by federal borrowing.

Who Might Issue Tax-Credit Bonds?

The range of potential issuers of tax-credit bonds spans both governmental and nongovernmental entities. State and local governments could find them useful, as might a nongovernmental entity such as Amtrak. In principle, the federal government could issue tax-credit bonds to finance some of its activities, although the higher costs that the bonds entail make that unlikely.

State and local governments are candidates to use tax-credit bonds. Indeed, the only such bonds authorized to date—Qualified Zone Academy Bonds (QZABs)—are designated for their use. QZABs were authorized in the Taxpayer Relief Act of 1997 and its subsequent extensions; that legislation allowed state and local governments to issue up to $400 million of QZABs each year from 1998 through 2003 to finance school renovation and construction projects that met a set of qualifying criteria. In addition, the Clinton Administration twice proposed other tax-credit bonds to be issued by state or local governments—specifically, $9.7 billion in 1999 and 2000 for school modernization bonds and $9.5 billion in 1999 over a five-year period for Better America Bonds (a debt instrument for expenditures related to environmental protection, such as the acquisition of green spaces).

Other potential issuers cited in recently proposed legislation are tribal authorities and at least one nongovernmental entity. The Senate passed a bill in May of this year that would allow Indian tribes to issue up to $200 million of "qualified tribal school modernization" tax-credit bonds

1. Some bonds, such as short-term bills or long-term zero-coupon bonds, promise only a single payment at the bond's maturity (when the principal comes due). Those bonds sell at a discount and therefore pay the interest implicitly by appreciating in value over time.

2. The description here, in accordance with proposals to date, is of a 100 percent credit, exactly equal to the cash interest that otherwise would have been paid. As discussed later, the credit could be less than 100 percent, with some interest still paid in cash.

3. The present value is a single number that expresses a flow of current and future income (or payments) in terms of an equivalent lump sum received (or paid) today.

4. Federal tax law prohibits issuers of tax-exempt debt from using the proceeds for defeasement. That restriction is meant to prevent state and local governments from earning profits—at the federal government's expense—by borrowing at a tax-exempt interest rate and lending the proceeds at a higher, taxable rate.

in both 2005 and 2006.[5] And a bill introduced in 2001 proposed that the National Railroad Passenger Corporation (Amtrak) be authorized to issue $12 billion of tax-credit bonds over a 10-year period.[6] A common characteristic of the tax-credit bonds in all of the proposals noted here—including those for state and local governments—is that they would provide a federal subsidy to entities outside the purview of the federal budget.

Some recent proposals would create a new institution to issue tax-credit bonds earmarked for specific activities. Those proposals envision that the new entity would be nonfederal. But it would be very difficult for such an entity to qualify as nonfederal for budgetary purposes. For that, the entity would have to be largely independent of the federal government, and the federal government could not maintain operational control over the way the entity spent the proceeds of the bond issues. Faced with the difficulties entailed in having such an entity deemed nonfederal, some proponents have suggested that the federal government issue tax-credit bonds directly. Whether the bonds were issued directly by the Treasury or through an entity that was deemed federal, the federal budget would show the program's spending, and the tax credits would serve only to mask the interest costs.

Comparing Federal Financing Costs for Tax-Credit Bonds and Appropriations

Any spending financed with tax-credit bonds could be funded instead through the appropriation process, and any money raised by the sale of tax-credit bonds could also be raised through the Treasury's conventional borrowing methods. Tax-credit bonds would cost the federal government more per dollar than would appropriations financed with Treasury bonds.[7]

If tax-credit bonds were issued by a nonfederal entity, such as a state or local government, the federal government would essentially be borrowing money jointly with that entity for the latter's benefit. The present value of the tax credits would be the amount that the federal government "borrowed" and paid as a subsidy. But no other institution borrows at as low a rate as the federal government does when it borrows through its traditional instruments. Thus, if federal borrowing was coupled with borrowing by the nonfederal entity, the cost of financing (the return that investors would require to purchase the bonds) would tend to rise because of three factors: the bonds' relative illiquidity, uncertainty about whether the tax credits might be revoked, and the risk that the principal might not be repaid.

Even if the Treasury issued the tax-credit bonds, the first two factors would raise the cost of financing. The nonstandard nature of the bonds would make them less liquid and cause investors to demand a yield premium—a larger return than they would require with standard risk-free Treasury securities.[8] The fact that the tax-credit promise was not contractual would add uncertainty, which would mean a further premium to account for risk. Investors might regard such bonds as similar to the instruments that finance the Resolution Funding Corporation, or REFCORP (the organization created by the Congress in 1989 to bail out the savings and loan industry).

For the REFCORP bonds, the Treasury pays the interest and guarantees the principal by requiring that a sufficient amount of the proceeds for repayment be invested in its zero-coupon bonds. Interest rates on REFCORP bonds have averaged about 10 to 16 basis points higher (a basis point is one-hundredth of a percentage point) than the rates on comparable Treasury bonds, according to a recent analysis.[9] By way of illustration, if Treasury bonds yielded 5 percent, investors might demand that the yield on tax-credit bonds be 5.1 percent, making such financ-

5. The Jumpstart Our Business Strength (JOBS) Act, S. 1637, passed by the Senate on May 11, 2004.

6. For a discussion of the economic costs of the proposed spending, see Congressional Budget Office, *A Financial Analysis of H.R. 2329, The High-Speed Rail Investment Act of 2001* (September 2001).

7. The Treasury explained the ways in which tax-credit bonds would be more expensive than its conventional securities in a letter from John W. Snow, Secretary of the Treasury, to Senator Don Nickles, Chairman, Senate Committee on the Budget, July 24, 2003.

8. Liquidity is important because to derive the benefit of nonrefundable tax credits, bond owners must have a tax liability at least as large as the credits. Bond owners who unexpectedly had a tax liability that was smaller than the credits and were thus unable to use all of them would presumably want to sell their bonds.

9. Francis A. Longstaff, *The Flight-to-Liquidity Premium in U.S. Treasury Bond Prices* (Los Angeles: University of California, Los Angeles, Anderson Graduate School of Management, May 2001), available at http://repositories.cdlib.org/anderson/fin/5-01.

ing 2 percent more costly than regular Treasury financing. The Treasury's costs for bond issuance and administration would rise as well, as would the compliance and enforcement costs of the Internal Revenue Service.

If a nonfederal entity was authorized to issue tax-credit bonds, the cost of financing could be higher still because of the risk premium demanded by bond buyers. If the entity was required to defease the debt using Treasury bonds, investors might view the debt as equivalent to REFCORP bonds and demand only a small premium. But if bond buyers were uncertain about whether the principal would be repaid and whether the proceeds would be used in ways that qualified for the tax credits, they would demand a higher risk premium. If, for example, investors demanded a yield of 5.5 percent when the interest rate on comparable Treasury bonds was 5 percent, then financing through the tax-credit bonds would be 10 percent more costly than financing through regular Treasury bonds.

Comparing Federal Costs for Alternative Approaches to State and Local Government Borrowing

The federal government already bears part of the interest costs that state and local governments incur when they issue bonds whose interest income is exempt from federal income taxes. Because of the exemption, purchasers of such bonds are willing to accept a lower interest rate than they would require on taxable bonds of comparable risk and maturity—specifically, an interest rate on the tax-exempt debt that equals or exceeds the after-tax interest rate on taxable debt.[10] Consequently, the federal government effectively pays a share—about 25 percent to 30 percent—of the taxable interest that state and local governments would have to pay if their debt were taxable. That contrasts with the interest subsidy of 100 percent that characterizes tax-credit bonds both as currently used and as proposed. Thus, tax-credit bonds deliver a bigger subsidy and cost the federal government more than the exemption of interest on state and local government bonds.

10. As with tax-credit bonds, the exemption from federal income tax of the interest income on state and local debt could in principle be revoked before the bonds matured, leaving the bondholders with little legal recourse to recover the loss of the value of the interest for which the exemption was substituting.

Yet they need not do so. The rate of the tax credit might be set at less than 100 percent to deliver an equivalent subsidy. Moreover, setting the tax-credit rate at a lower level could actually reduce the federal costs that are now incurred in paying a portion of state and local governments' borrowing costs. A given subsidy could be delivered at a lower cost to the federal government; alternatively, a larger subsidy could be delivered at the same cost.

Tax-Exempt Bonds

Under the current tax exemption, each dollar of federal aid to state and local governments in the form of lower borrowing expenses costs the federal government considerably more than a dollar. As noted earlier, the return on a taxable bond is equal to the interest paid on the bond minus the federal income tax that the investor pays on that interest income. (For simplicity's sake, that calculation ignores state income taxes.) A bond purchaser's income tax and after-tax return depend on his or her marginal tax rate (the rate of tax paid on the last dollar of income).

Investors with a marginal tax rate of 30 percent would be willing to purchase either a $1,000 tax-exempt municipal bond with an interest rate of 4.9 percent (on which no federal taxes would be paid) or a $1,000 taxable bond paying 7.0 percent before taxes and 4.9 percent after taxes (30 percent of the 7.0 percent return, or 2.1 percent, is paid in taxes). For both bonds, the annual interest expenses are 7 percent, or $70. For the taxable bond, that expense is paid entirely by the issuer. For the tax-exempt bond, however, the interest costs are effectively shared between the state or local government (which pays the interest rate of 4.9 percent, or $49 in interest) and the federal government (which pays the remaining 2.1 percent, or $21, in the form of the tax revenue that would have been collected if the bond had been taxable; see Table 1). In effect, the share of the interest costs paid by the federal government is determined by the bond purchasers with the lowest marginal tax rate. Those buyers "clear the market"—that is, buy the last units of the bond issue. In this example, that marginal tax rate and thus the federal share of interest costs are both 30 percent.

Because some bond purchasers' marginal tax rates are higher than other buyers', tax-exempt bonds usually end up costing the federal government more than the amount of benefits (that is, the reduced interest costs) received by the state and local governments that issue the bonds. To illustrate, suppose that most of the buyers of tax-exempt bonds were in a 35 percent tax bracket rather than the

Table 1.

Comparing Annual Federal Costs for Different Types of State and Local Bonds Under the Assumption of a 7 Percent Interest Rate

(Dollars)

	Tax-Exempt Bonds		Taxable Bond Option		Redesigned Tax-Credit Bonds	
	Marginal Tax Rate of 30 Percent	Marginal Tax Rate of 35 Percent	Marginal Tax Rate of 30 Percent	Marginal Tax Rate of 35 Percent	Marginal Tax Rate of 30 Percent	Marginal Tax Rate of 35 Percent
Federal Payment or Subsidy to State and Local Governments[a]	21	21	21	21	21	21
Cost to the Federal Government of Delivering the Subsidy to State and Local Governments						
Forgone revenue	21	24.50	n.a.	n.a.	n.a.	n.a.
Appropriations	n.a.	n.a.	21	21	n.a.	n.a.
Tax credit	n.a.	n.a.	n.a.	n.a.	21	21
Cost per Dollar of Subsidy	1	1.17	1	1	1	1

Source: Congressional Budget Office.

Note: Costs are figured on $1,000 worth of bonds, and the marginal tax rates are those of bond purchasers.

n.a. = not applicable.

a. As the text describes, the total return on the bonds under each of the alternatives in the table would be 7 percent, or a total of $70, with the state or local government paying $49 of the interest cost and the federal government $21. Those shares are the equivalent of the return on a taxable bond paying 7 percent before taxes and 4.9 percent after taxes.

30 percent bracket of the investors whose bond purchases clear the market. Each $1,000 bond sold to a buyer in the higher tax bracket would cost the federal government $24.50 in lost revenue each year ($70 of interest income not taxed at a 35 percent rate). Yet the reduction in the borrowing costs of state and local governments would be only $21—because the investors in the 30 percent tax bracket had bought the last bonds and set the tax-exempt interest rate at 4.9 percent. The federal government would thus incur a cost of $1.17 ($24.50/$21) for every dollar of assistance to the state or local government for bonds bought by people in the 35 percent tax bracket. Such a scenario is clearly an inefficient use of the federal government's resources.

The Taxable Bond Option

In the past, analysts who wanted to eliminate the inefficiencies inherent in tax-exempt bonds have argued that the government should subsidize interest payments on municipal bonds not through the tax system but through the appropriation process. Under such a "taxable bond option" (TBO), state and local governments would issue taxable debt that carried an interest rate comparable with that on other taxable debt of equal risk and maturity (7 percent in the above example). The federal government would compensate state and local governments by paying a share of the higher interest costs. That share, or subsidy rate, would be set to equal the market-clearing marginal tax rate that would have been expected if tax-exempt bonds had been issued (30 percent in the example). A subsidy of that size would allow state and local governments to pay the same interest rate (after receiving the federal payment) that they would have paid on tax-exempt bonds, and their interest savings would be the same as the savings provided by those bonds—$21 on each $1,000 bond (see Table 1). The cost to the federal government would be limited to the appropriations made to state and local governments to finance a portion of their interest payments ($21 on each $1,000 bond). There would be no loss of tax revenue because the interest income on the bonds would be taxable rather than tax-exempt. The federal government's cost per $1 of interest savings for state and local governments would be $1, re-

gardless of the marginal tax rate of the investor who cleared the market.[11]

The Congress has considered a taxable bond option several times. The House Ways and Means Committee twice reported out legislation containing one, in 1969 and 1976, and the Carter Administration included such a provision in its 1978 tax proposals. In none of those instances did a TBO become law. One of the issues that a TBO raises is related to bond volume. A TBO would change the subsidy from an open-ended program whose utilization was entirely determined by the issuers of bonds to one whose utilization was subject to an annual appropriation limit. As a result, state and local governments might lose control of the volume of bonds to be issued. (By contrast, tax-credit bonds, which are discussed below, would maintain the subsidy's open-ended claim to federal revenues and leave decisions about bond volume in the hands of state and local issuers.)

Redesigned Tax-Credit Bonds

Tax-credit bonds could be designed to replace tax-exempt bonds so that the federal government continued to pay the same share of state and local governments' interest costs with the same level of efficiency as a TBO would offer. The kind of restructured tax-credit bond envisioned under that approach would divide its return into two components: a taxable interest payment from the state or local government issuing the debt and a taxable tax credit from the federal government. The federal government would set the rate of the tax credit to meet two conditions. First, the value to bond buyers of the sum of the interest paid by the state or local government and the tax credit would have to equal the interest income on a comparable taxable bond. Second, the total interest costs borne by the state or local government would have to be the same as they would have been if the bonds had been issued as tax-exempt debt. Those conditions yield a tax-credit rate that can be expressed as a percentage of those interest costs. For example, if the marginal tax rate that would have cleared the tax-exempt bond market was 30 percent, the tax-credit rate would be 0.429.[12]

In that example, all purchasers of $1,000 bonds would receive a taxable interest payment of $49 (4.9 percent) from the bond's issuer—the same interest that the issuer would have paid on a tax-exempt bond—and a tax credit of $21 (which equals the credit rate of 0.429 times 4.9 percent, or $21). The $21 tax credit would substitute for the $21 of interest costs that state and local governments would have had to pay on a taxable bond and equal the savings that they would have received on a tax-exempt bond. The federal government's cost would equal the tax credit—that is, the interest savings—regardless of whether the marginal tax rate of the bond purchaser was 30 percent or 35 percent. The federal government would not suffer any loss of revenues in addition to the credit because both the state and local interest payment of $49 and the tax credit of $21 would be taxed at each bondholder's marginal tax rate—as the $70 of interest income on an equivalent taxable bond would be. Thus, the tax-credit bond in this form would be efficient because it would cost the federal government $1 for each $1 of interest savings provided to state and local governments.

Conclusion

Tax-credit bonds have been suggested as an alternative way of financing public expenditures, and advocates of their use claim a variety of advantages for that funding approach. However, using tax-credit bonds to fund programs that could be funded through federal appropriations would cost the federal government more per dollar than it would have to pay if it used its conventional financing method of issuing taxable bonds through the Treasury.

Tax-credit bonds could be designed to deliver the same federal subsidy to state and local governments that current tax-exempt bonds provide but at a lower cost. A tax credit would subsidize the interest on state and local government debt more efficiently than an exemption of interest income could because of the federal income tax's progressive marginal tax rate structure. However, both tax-credit and tax-exempt bonds convey such assistance by forgoing income tax revenues, an approach whose costs are not readily visible in the federal budget.

11. If a TBO was enacted, the government would have to forecast bond demand and supply to estimate the market-clearing tax rate as well as the subsidy rate that would have prevailed with tax-exempt bonds. If no forecasting bias skewed the results, the share of the interest costs paid by the federal government would vary around the share that would have been provided by tax-exempt bonds—and the federal government would save money.

12. The rate is equal to $t/(1 - t)$, where t is the marginal tax rate of the taxpayer whose purchase would have cleared the tax-exempt bond market.