



CONGRESSIONAL BUDGET OFFICE
U.S. Congress
Washington, DC 20515

December 6, 2006

Honorable William “Bill” M. Thomas
Chairman, Committee on Ways and Means
U.S. House of Representatives

Dear Mr. Chairman:

At your request, the Congressional Budget Office (CBO) has examined the use of tax-exempt bonds by nonprofit hospitals and the degree to which those hospitals use such bonds to earn what—under a broader definition than exists in current law—could be characterized as arbitrage profits on their investments. In accordance with CBO’s mandate to provide objective, nonpartisan analysis, the report makes no recommendations.

Dennis Zimmerman and Kurt Seibert conducted the analysis under the supervision of G. Thomas Woodward and Robertson Williams. It benefited from comments by reviewers outside CBO, including Gary Bornholdt of the Joint Committee on Taxation, William Gentry of Williams College, and Thomas Pollak of the Urban Institute. The assistance of external reviewers implies no responsibility for the analysis, which rests solely with CBO. Within CBO, Robert Dennis, Damien Moore, Robert Nguyen, and Chapin White provided comments.

I hope that you find the analysis useful. If you or your staff have any questions, please feel free to call me at (202) 226-2700 or G. Thomas Woodward at (202) 226-2680.

Sincerely,

A handwritten signature in cursive script that reads "Donald B. Marron".

Donald B. Marron
Acting Director

Attachment

Nonprofit Hospitals and Tax Arbitrage

December 2006

Note

Numbers in the text and tables may not add up to totals because of rounding.

Contents

Summary	1	
The Costs and Benefits of Nonprofit Hospitals' Tax Preferences	3	
Tax-Exempt Bonds and Tax Arbitrage	6	
Nonprofit Hospitals and Tax-Exempt Bonds	6	
Background on Arbitrage Bonds	7	
Estimating Issues	10	
Data Issues	10	
Measuring Nonprofit Hospitals' Use of Arbitrage Bonds	11	
Arbitrage Bond Estimates	15	
Estimates with Hospitals' Bond Stock Unadjusted	19	
Estimates with Bond Stock Adjusted	20	
Adjustment for Precautionary Savings	20	
Hospitals' Response to Implementation of a Broader Arbitrage Definition	20	
Appendix A: A Previous Estimate of Nonprofit Hospitals' Use of Arbitrage Bonds	23	
Appendix B: The Cost of Capital	25	
Tables		
1.	Summary of Data Used to Estimate Nonprofit Hospitals' Level of Arbitrage Bonds, 2002	13
2.	The Level of Arbitrage by Nonprofit Hospitals That Borrowed in 2002, Without Adjustments to Correct for Misreporting	16
3.	The Level of Arbitrage by Nonprofit Hospitals That Borrowed in 2002, as Adjusted to Correct for Misreporting	17
4.	The Level of Arbitrage by Nonprofit Hospitals That Borrowed in 2002, as Adjusted to Correct for Misreporting and to Allow for Precautionary Savings	18
A-1.	Comparison of CBO's Estimates and Earlier Estimates of Nonprofit Hospitals' Use of Arbitrage Bonds	24
B-1.	Scenarios Illustrating the Cost of Capital for For-Profit and Nonprofit Hospitals	26

Summary

The federal government exempts nonprofit hospitals from federal income taxation and allows them to issue tax-exempt debt. To qualify for those tax advantages, the hospitals must provide community benefits, which the Internal Revenue Service (IRS) defines as promoting the health of any broad class of people, perhaps including such activities as charity care, health screening, community education about health risks, emergency room services, and basic research. In effect, nonprofit hospitals are thus required to provide services that may differ somewhat from those provided by for-profit hospitals. Analysts and policymakers have questioned, however, the degree to which the activities of nonprofit and for-profit hospitals actually differ and whether any resulting community benefits are sufficient to justify the tax benefits that nonprofits receive.

This analysis by the Congressional Budget Office (CBO) documents the magnitude of the tax advantages provided to nonprofit hospitals as a result of their exemption from corporate income taxes and their ability to issue tax-exempt debt.¹ According to the Joint Committee on Taxation (JCT), the exemption from income taxes provided nonprofit hospitals with about \$2.5 billion in tax savings in 2002 (the most recent year for which such a calculation can be made), and the use of tax-exempt bonds provided them \$1.8 billion—\$4.3 billion that substantially reduced their cost of capital. Those advantages represented a transfer of resources from federal taxpayers to nonprofit hospitals.² Nonprofit hospitals may use such resources in several ways. Some of those resources, as intended, may finance community benefits, such as reducing the prices of hospital services, providing charity care, or educating the community about health risks. Some may turn out to be transfers to providers, perhaps allowing higher compensation for employees, for instance. Finally, some of the resources may be wasted by inducing nonprofit hospitals to make less productive use of capital. For example, their lower cost of capital may induce investment in projects with relatively low pretax returns, thereby reallocating resources from more productive private-sector investments.

The analysis then examines one way to reduce the tax advantages: broaden the definition of tax arbitrage and thereby reduce the amount of tax-exempt debt that nonprofit

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1. Nonprofit hospitals also benefit from the fact that donors' charitable contributions to them are tax-deductible and from several state and local tax preferences.
 2. The revenues that the federal government would gain from eliminating those tax advantages would be lower than \$4.3 billion because nonprofit hospitals would adjust their behavior to minimize their tax burden.

hospitals would issue. Many nonprofit institutions, including hospitals, use tax-exempt debt to finance buildings and equipment that they could have financed by selling their own investment assets. Their decisions to finance operating assets with tax-exempt debt are influenced by their ability to earn an untaxed return on their investment assets that is higher than the interest cost they must pay on the tax-exempt debt.

That earnings differential could be characterized as a type of tax arbitrage. As administered, the existing rules in the tax code and the Department of the Treasury's regulations limit tax arbitrage by restricting the yield on a bond issuer's investments. Specifically, the yield can be no higher than the interest cost on the tax-exempt bonds if the bond proceeds are used to finance investment assets or if other assets are used to replace the bond proceeds (replacement proceeds), such as assets that are pledged as security for the bond issue.³ The analysis examines the implications of broadening the definition of tax arbitrage to include earnings from assets not currently considered to be replacement proceeds but that nonetheless contribute indirectly to securing the bonds.

Of the 348 hospitals that borrowed in 2002 using tax-exempt debt, CBO estimated the amount of arbitrage bonds based on that broader definition for 310, the ones for which complete data were available. At the time they borrowed, about 80 percent of those hospitals were earning returns from that broader form of tax arbitrage on 60 percent of their outstanding stock of tax-exempt bonds. (See Appendix A for arbitrage estimates for all 1,276 hospitals that had tax-exempt debt on their balance sheets in 2002.) The estimates of tax arbitrage decline if the definition is narrowed to allow hospitals to set aside some investment assets as precautionary savings, which are not subject to yield restriction. If such savings amount to 100 days of operating expenses, for example (the median was 117 days in 2002), 35 percent of those 310 hospitals that borrowed in 2002 were earning returns from arbitrage on 33 percent of their outstanding stock of tax-exempt bonds.

If a broader definition of arbitrage was implemented and nonprofit hospitals continued accumulating assets and borrowing as they had in the past, their new bond issues would tend to exhaust the assets subject to yield restriction. Eventually, the hospitals would reach a steady state between accumulating assets and tax-exempt borrowing, and the prevalence of tax arbitrage for new issues of tax-exempt bonds would be lower than when the broader definition was first adopted. For example, without an allowance for precautionary savings, 37 percent of the 310 hospitals that borrowed using tax-exempt debt in 2002 would have the yield restricted on 28 percent of the dollar value of those new bond issues. If regulations allowed precautionary savings for 100 days of operating expenses, 15 percent of hospitals would have the yield restricted on

3. The terms "debt" and "bonds" are used interchangeably to refer to debt with maturities in excess of a year. The dollar figures for such debt cited in this analysis also include any leasing arrangements that are tax-exempt.

9 percent of their new bond issues. If the behavior of the 310 hospitals that borrowed in 2002 was typical, the estimates for hospitals that borrow in the future would probably be similar.

Over time, a broadened definition of tax arbitrage would improve the federal government's net fiscal condition. Hospitals would have to reduce their new issues of tax-exempt bonds (either reducing investment in operating assets or switching to taxable debt) by 28 percent (or by 9 percent if the policy accommodated precautionary savings). For example, if tax-exempt bonds provide \$1.8 billion in annual tax benefits to nonprofit hospitals, as estimated for 2002, over time the broadened definition of tax arbitrage would save \$504 million per year (or \$162 million if allowance was made for precautionary savings). If hospitals chose instead to subject their investment assets to yield restriction, the federal government's forgone tax revenues would not change but the government would realize an equivalent amount in reduced borrowing costs or rebates of excess yields.

The Costs and Benefits of Nonprofit Hospitals' Tax Preferences

Nonprofit hospitals are more common than for-profit hospitals. In 2003, for example, 59 percent of community hospitals providing short-term care were nonprofit, and 18 percent were for-profit (the other 23 percent were government-owned). Nonprofits thus accounted for about 77 percent of private community hospitals. Nonprofits accounted for an even larger share of the fixed assets owned by private hospitals—86 percent—indicating that nonprofit hospitals are, on average, somewhat larger than for-profits.

The federal tax system treats nonprofit hospitals favorably in several ways. For-profit hospitals pay corporate income taxes on their net income, but nonprofit hospitals pay no taxes on their net income. In addition, the interest income earned by businesses and individuals that purchase the debt issued by for-profit hospitals is subject to federal corporate and individual income taxation, whereas the interest income earned on debt issued by state and local governments on behalf of nonprofit hospitals is generally exempt from those taxes. Nonprofit hospitals also benefit from the deductibility of charitable contributions and from their exemption from state and local corporate income taxes, local property taxes, and sales tax on their purchases.

The Internal Revenue Service's regulations require that, in exchange for such favorable tax treatment, nonprofit hospitals must promote the health of any broad class of people.⁴ Those services can take a variety of forms: conducting basic research, health screening, and educational outreach (which are not commonly provided in private

4. Internal Revenue Service, 1969. Revenue Ruling 69-545, 1969-2 C.B. 117, available at www.irs.gov/pub/irs-tege/rr69-545.pdf.

markets) and providing hospital services comparable to those at for-profits but at below-market prices or for free, such as charity care.

Those community benefits are difficult to identify and quantify. Various analyses have thus examined not only differences in for-profit and nonprofit hospitals' "outputs," such as uncompensated care and quality of care, but also differences in their operational measures such as cost, profitability, pricing, adoption of technology, and financial policies.

Although those analyses find some differences between for-profit and nonprofit hospitals, in some locations, for some services, they do not reveal consistent patterns.⁵ Consequently, analysts and policymakers have reached different conclusions about whether the level of community benefits provided by nonprofit hospitals justifies the tax preferences they receive.

This analysis does not attempt to resolve that issue. Rather, it focuses on only one aspect of the issue: the costs associated with providing the federal tax preferences. And it discusses how much the costs might be reduced if policymakers were to impose a particular type of restriction on hospitals' use of tax-exempt financing.

From the federal taxpayers' perspective, the costs of the tax preferences are the revenues lost from not taxing the income of nonprofit hospitals and the interest income associated with hospital debt. (See Box 1 for a discussion of additional potential costs.) The Joint Committee on Taxation estimates that nonprofit hospitals and their supporting organizations received \$2.5 billion in tax savings in 2002 from the income tax exemption and \$1.8 billion in tax savings from the preference allowing them to use tax-exempt debt.⁶ Taken together, the two tax preferences thus amounted to \$4.3 billion in tax savings. Because the estimates do not account for the likely effect of nonprofit hospitals' efforts to minimize their tax burden in response to elimination of

5. See Congressional Budget Office, *Nonprofit Hospitals and the Provision of Community Benefits* (December 2006). See also Frank A. Sloan, "Not-for-Profit Ownership and Hospital Behavior," in A.J. Culyer and J.P. Newhouse, eds., *Handbook of Health Economics*, eds., vol. 1 (Amsterdam: Elsevier Science B.V., 2000), pp. 1142-1174; and Frank Schlesinger and Bradford H. Gray, "How Nonprofits Matter in American Medicine, and What to Do About It," *Health Affairs*, vol. 25, no. 4 (2006), pp. 287-303.

6. Memorandum from Thomas A. Barthold, Joint Committee on Taxation, to James Baumgardner and G. Thomas Woodward, Congressional Budget Office, September 12, 2006.

Supporting organizations are entities formed specifically to provide financial support for a hospital classified under the Internal Revenue Code as a 501(c)(3)—nonprofit—organization. In addition, JCT estimates that, in 2002, nonprofit hospitals received these benefits from tax preferences: \$1.8 billion from the deductibility of charitable contributions on federal income taxes, \$0.5 billion from their exemption from state corporate income taxes, \$2.8 billion from their exemption from state sales taxes, and \$3.1 billion from their exemption from state and local property taxes—bringing the total tax benefits to \$12.6 billion.

Box 1.

Tax Preferences Reduce Nonprofit Hospitals' Cost of Capital

Because of their exemption from income taxation and their ability to use tax-exempt debt, nonprofit hospitals have a significantly lower cost of capital than do for-profit hospitals. In mid-2006, for example, for-profit hospitals had a cost of capital of about 12.9 cents per dollar of investment, while nonprofit hospitals had a cost of capital of only 10.8 cents per dollar of investment. (See Appendix B for a discussion of the cost of capital and the basis for those estimates.) In other words, for-profits would have to receive 12.9 cents each year for each dollar of investment—to cover the original investment and provide a return to investors—while nonprofits would have to receive only 10.8 cents.

The federal tax advantages received by nonprofit hospitals thus lower their cost of capital and national income by as much as 2.1 cents per dollar of investment. The relative contribution of the two tax preferences depends on how nonprofits would finance themselves in the absence of those preferences. One possibility, analyzed in Appendix A, is that nonprofits would use the same level of debt in their projects. Under that assumption, about one-third of the reduction in the cost of capital could be attributed to the ability to use tax-exempt debt; if nonprofit hospitals had to use taxable debt instead, their cost of capital would rise by about 0.65 cents. The remaining two-thirds of the advantage—1.45 cents—would come from the exemption of nonprofit hospitals' income from taxation.

For a discussion of nonprofit hospital financing, see Gerard J. Wedig, Mahmud Hassan, and Michael A. Morrissey, "Tax-Exempt Debt and the Capital Structure of Nonprofit Organizations: An Application to Hospitals," *The Journal of Finance*. vol. 51, no. 4 (1996), pp. 1247-1283.

the tax preferences, the revenue gain from removing those tax preferences would be smaller than \$4.3 billion.⁷

Tax-Exempt Bonds and Tax Arbitrage

State and local governments use tax-exempt bonds to finance their own investments; in addition, they also provide the means for some nongovernmental entities—which can be individuals, private businesses, or nonprofit organizations—to use tax-exempt debt as well. The tax code includes specific provisions designed to limit the tax preference primarily to the financing of investment in operating assets (buildings and equipment). Using low-cost tax-exempt bonds to finance the purchase of higher-yielding taxable securities—tax arbitrage—is prohibited under the tax code and the Department of the Treasury’s regulations. Except in limited situations, however, the code does not prevent entities that borrow with tax-exempt bonds from indirectly doing the same thing: earning yields on investment assets not financed with tax-exempt bonds that exceed the interest costs they incur from contemporaneous tax-exempt borrowing.

Nonprofit Hospitals and Tax-Exempt Bonds

New issues of tax-exempt bonds (excluding ones that refinanced previously issued bonds) grew from \$103 billion in 1991 to almost \$200 billion in 2002, the most recent year for which data are available by type of activity (see Figure 1). That volume includes both governmental bonds and private-activity bonds. Governmental bonds are issued by state and local government entities for public purposes such as the construction of highways, schools, and public hospitals; those bonds averaged 72 percent of new issues over the period. The debt service is usually paid with general tax revenues from state and local taxpayers.

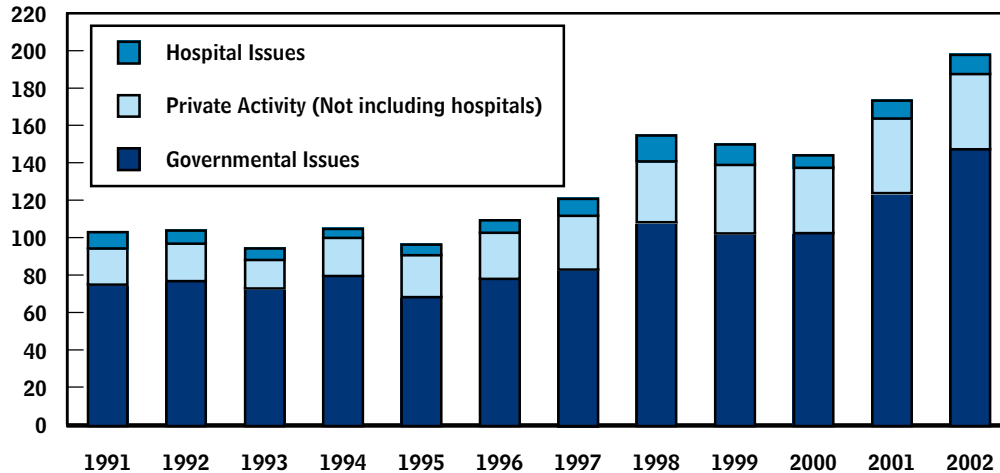
Bonds issued by state and local governments for investments made by private entities generally are classified as private-activity bonds and are taxable. State and local governments and their authorities can, however, issue tax-exempt bonds on behalf of private entities for certain eligible activities, such as the provision of manufacturing structures and equipment, student loans, mortgages for owner-occupied housing, and nonprofit hospital services. The debt service on those private-activity bonds is usually paid with revenues generated by the facilities built with the bond proceeds, not by state and local taxpayers. The amount of tax-exempt private-activity bonds is limited by annual caps on most categories of eligible private-activity bonds but not on tax-exempt bonds issued on behalf of nonprofit hospitals.

7. Absent the incentive to maximize profits that is provided by owners expecting a return on their investment, a nonprofit organization might reduce its net income (and its tax base) substantially by lowering its prices, shifting costs from related for-profit entities, or increasing compensation to employees. Those responses are discussed in Congressional Budget Office, *Taxing the Untaxed Business Sector* (July 2005).

Figure 1.

The Value of New Tax-Exempt Bonds Issued by Year, 1991 to 2002

(Billions of nominal dollars)



Source: Congressional Budget Office based on data from the Internal Revenue Service drawn from Form 8038 and Form 8038-B information returns.

Note: The figure excludes refunding bonds—those issued to refinance previous borrowing.

State and local governments issued \$50 billion in tax-exempt private-activity bonds in 2002. About \$10 billion of that amount went to nonprofit hospitals. Over the 1991-2002 period, the annual volume of bonds issued on behalf of nonprofit hospitals varied between \$4.6 billion (in 1994) and \$13.8 billion (in 1998). Those bonds averaged 23 percent of all eligible new issues of private-activity bonds over the period, the largest share for any type of institution using private-activity bonds.

Background on Arbitrage Bonds

Purchasers of tax-exempt bonds do not pay income tax on their interest income and therefore are willing to accept a lower interest rate than they can earn on taxable debt of equivalent risk and maturity. That yield differential presents an opportunity for some issuers of tax-exempt debt and a difficult administrative problem for the federal government. Nonprofit organizations (as well as state and local governments) do not pay taxes on their net income, whether that income comes from an operating surplus or their investment earnings. They thus have an incentive to borrow with tax-exempt debt and invest the proceeds in higher-yielding taxable securities. Any higher return on the taxable securities covers the lower interest cost of the tax-exempt debt and, in addition, provides untaxed earnings—or returns from tax arbitrage. That incentive would not exist if the entity using the tax-exempt debt was subject to federal income taxes because the returns from tax arbitrage would be paid to the federal government as income taxes. The tax arbitrage, in effect, provides a transfer from the federal government to the entity engaging in the practice.

To restrict such activity, the tax code specifies that arbitrage bonds are not tax-exempt. Section 148 of the Internal Revenue Code defines an arbitrage bond as:

Any bond whose proceeds are reasonably expected to be used directly or indirectly (1) to acquire higher-yielding investments or (2) to replace funds which were used directly or indirectly to acquire higher-yielding investments.

The aim is to ensure that bond proceeds are used to increase investment in operating assets (structures and equipment) and are not diverted to the purchase of higher-yielding assets to earn untaxed investment income. The tax code has provisions that prevent the direct diversion of bond proceeds away from investment in physical capital to the earning of investment income. In general, those provisions allow earnings from tax arbitrage only during specified (temporary) periods before the proceeds are needed for the purpose for which the borrowing occurred or on specified types of investments (such as reserve funds). With limited exceptions, any earnings from tax arbitrage must be rebated to the Treasury.⁸

However, the tax code does not prevent all opportunities to borrow at tax-exempt rates while earning higher taxable yields. If an entity's assets are not pledged to pay debt service on its tax-exempt bonds or if the assets have no other direct nexus (connection) to its tax-exempt bonds (within the meaning of the Department of the Treasury's regulations), the arbitrage restrictions do not apply.

For example, consider a nonprofit that has \$75 million of investment assets from gifts and accumulated surpluses, all of which is invested in taxable securities earning a return higher than the interest cost of tax-exempt debt. In an economic sense, that institution earns returns from tax arbitrage if it finances \$25 million in structures and equipment with tax-exempt bonds rather than internal funds. Although the bond proceeds are being used "directly" to finance the construction of capital facilities, the effect is indistinguishable from using investment assets and replacing those assets with proceeds from private-activity bonds. In effect, by using bonds rather than its own assets to pay for structures and equipment, the institution indirectly uses those bonds to finance higher-yielding investments. The institution gains by the amount by which its earnings on \$25 million of securities exceed its interest payments on the bonds.

Treasury regulations include a "replacement proceeds rule" (section 1.148-1(c)) that requires the yield to be restricted on any investment assets or other amounts that have a nexus to a tax-exempt-bond issue that is sufficiently direct for one to conclude that the assets or amounts would have been used to finance the operating assets in the absence of the proceeds from the tax-exempt borrowing. For example, if a hospital pledges securities as collateral for its obligation to repay the debt service on tax-

8. Generally, a rebate is not required if all of the proceeds are spent for the purpose of the borrowing within certain prescribed time periods. The rebate requirement also does not apply to small general purpose governmental units, usually defined as entities that issue no more than \$5 million of tax-exempt governmental bonds in a year.

Box 2.**How the Treasury Department Restricts the Yields on Investment Assets**

The Treasury restricts the yields on investment assets using two mechanisms. In the first, the borrowers' investment portfolio is left undisturbed, but the borrower is required to rebate to the federal government the excess yields earned on assets equal in amount to the bond proceeds. In the second, the borrower is required to sell an amount of assets equal to the value of the bonds and invest the sale proceeds in a specially created Treasury debt instrument (State and Local Government Series). Those Treasury bonds, called SLUGS, are designed to provide a yield that offsets the interest cost on the tax-exempt bonds.

exempt bonds, the securities are treated as replacement proceeds subject to yield restriction under the arbitrage rules. The rules preclude the institution from using its financial assets as collateral for the bonds and then earning a higher rate of return on its assets. The federal government has specific enforcement mechanisms to restrict bond issuers' yields on their investment assets so that the return on the investment assets is not materially higher than the interest cost on the tax-exempt bonds (see Box 2).

As discussed, the replacement proceeds rule applies when there is a sufficient connection between certain of the entity's assets and the tax-exempt bonds, as when an entity pledges assets in payment for the debt service. The rule is intended to address indirect arrangements that provide tax arbitrage, but administering the rule is difficult in practice. It is arguably ineffective because accounting reports typically do not reveal such relationships. Moreover, the need to establish a direct connection (such as a pledge) between investment assets and debt service is inconsistent with typical practices in bond markets, as bond-rating agencies base credit ratings on institutions' overall investment assets and cash on hand because those assets and their earnings can ultimately be used to pay for debt service or can be used to cover expenses to free up other funds to pay for debt service.

That attribute of the tax code is not unique to nonprofit hospitals. It applies equally to other nonprofit institutions such as colleges and universities, which have sizable financial assets invested in financial securities. Nor does the feature necessarily constitute a "loophole." The current tax arbitrage rules do ensure that a bond issue is associated with the acquisition of new capital, and they do reduce its cost. Nonetheless, a change in the rules that would broaden the definition of tax arbitrage—identifying it on the basis of institutions' investment assets instead of relying on establishing a direct

connection between bond proceeds and higher-yielding investments—would serve to decrease the tax benefits going to nonprofit hospitals should policymakers decide to reduce them.⁹

Estimating Issues

Estimating nonprofit hospitals' prior and future use of tax-exempt bonds as tax arbitrage under a broad definition is a complicated procedure. This section discusses the economic concepts and data issues employed in making those estimates.

Nonprofit hospitals often borrow using tax-exempt bonds to finance capital investments even though they hold substantial assets that they could sell to pay for new facilities. CBO's analysis looked at every hospital that had tax-exempt debt on its balance sheet in 2002 and at every hospital for which tax-exempt debt was issued in 2002 and asked how much of the hospital's outstanding bond issues or new bond issue could have been replaced with existing investment assets. If the hospital's assets exceeded its outstanding bonds or its new bond issue, the analysis considered those bonds to be arbitrage bonds since the hospital presumably chose to use bonds because the investment assets would earn a greater return than the interest paid on the bonds. If the hospital's outstanding bond issues or new bond issue exceeded its investment assets, only that portion of the bonds that could have been replaced by assets would qualify as arbitrage.

Data Issues

To estimate nonprofit hospitals' use of arbitrage bonds, CBO used data from two different sources, and, for one of those sources, two different versions.

Every nonprofit hospital must annually file a Form 990 information return with the IRS detailing its revenues, expenses, assets, and liabilities. The IRS makes available a stratified sample of those returns, which CBO used to estimate the investment assets and outstanding stock of tax-exempt bonds for nonprofit hospitals that had borrowed in 2002 using tax-exempt debt.

Every state and local government and other authority that issues tax-exempt bonds must file a Form 8038 information return with the IRS that details a bond issue's dollar value and purpose, as well as other financial information. CBO used the Form 8038 returns to estimate the volume of nonprofit hospitals' tax-exempt borrowing in 2002. Returns were filed for 384 bond issues, of which 310 were new and 74 were refinancing previously issued bonds. According to the returns, the 310 new issues were on behalf of 434 entities.

9. Alternatively, a limit on a nonprofit hospital's outstanding stock of tax-exempt bonds could be imposed. The Tax Reform Act of 1986 imposed a \$150 million limit on nonprofit organizations, but hospitals were exempt. The limit was removed in 1997.

A few returns came from state or local authorities that issued bonds and divided the proceeds among multiple hospitals that were not identified on the Form 8038 returns. More frequently, returns listed multiple entities without specifying the share of bond proceeds each received. By contacting issuing authorities, parent organizations, and hospitals, CBO identified 348 hospitals that, in fact, received bond proceeds. Of those hospitals, CBO dropped 38 from the data set because of accounting complications between parent and subsidiary hospitals or because they could not be matched with a Form 990 information return. Those adjustments left 310 nonprofit hospitals available for the analysis; they received nearly 90 percent—\$8.4 billion of \$9.5 billion—of proceeds from new bond issues reported on the Form 8038 returns for 2002.

To determine how much of the outstanding stock of bonds could be considered to earn returns from tax arbitrage under a broader definition and to estimate the effect that broader definition might have on new bond issues, CBO combined information on investment assets and the outstanding stock of tax-exempt debt from the IRS Form 990 with the bond issuance data from the Form 8038.¹⁰ Because the IRS Form 990 data are based on a sample of hospitals and therefore often failed to match some of the Form 8038 returns, CBO supplemented the IRS information with data maintained by the National Center for Charitable Statistics at the Urban Institute, which includes virtually all Form 990 information returns filed by nonprofit organizations.¹¹

Measuring Nonprofit Hospitals' Use of Arbitrage Bonds

Several conceptual and measurement issues arise in determining how much of the outstanding stock of tax-exempt debt and the new tax-exempt borrowing would be classified as earning returns from tax arbitrage under the broader definition.

Measuring Arbitrage Bonds. CBO estimated the outstanding stock of bonds that were earning returns from tax arbitrage under the broader measure by comparing a hospital's investment assets net of accumulated depreciation with its outstanding stock of tax-exempt bonds.¹² If investment assets exceeded the outstanding stock of bonds, all of the bonds were deemed to be arbitrage bonds. If the stock of bonds exceeded investment assets, then the level of arbitrage bonds was considered to equal the investment assets. Under that measure, a nonprofit hospital's arbitrage bonds were thus the lesser of the outstanding stock of bonds or the investment assets.

10. Nonprofit hospitals can choose to file for a calendar year or a fiscal year, and their fiscal years vary widely. To ensure that the outstanding stock of tax-exempt debt (obtained from the Form 990 information return) did not include the new bonds issued in 2002, the match used the Form 990 information return whose reporting period immediately preceded the date of the bonds issued in 2002, either the 2001 or 2002 return.

11. GuideStar-NCCS National Nonprofit Research Database, version 2005b, available at <http://nccsdataweb.urban.org>.

12. Investment assets include both financial assets and physical assets held for investment purposes, such as a medical office building that produces rental income.

CBO refers to that measurement approach as the “historical measure” because it is based primarily on the outstanding stock of tax-exempt debt, which reflects the history of all bond issues that have not been completely retired (paid off). All of the data for that measure of arbitrage bonds come from the Form 990 information returns.

Implementing a broader definition of tax arbitrage, however, would of course be forward-looking. It would not look back to past issues and require a rebate of tax arbitrage returns earned on those bonds that could have been replaced with financing from investment assets. Instead, a nonprofit hospital’s new bonds would be compared to its investment assets. If investment assets exceeded the dollar value of the new bond issue, all the bonds would be considered to be earning returns from tax arbitrage. If the new bond issue exceeded investment assets, arbitrage bonds would equal the investment assets, and some of the bond issue would not be considered to be earning returns from tax arbitrage. Thus, arbitrage bonds would be the lesser of the bond issue or the investment assets. In the early years of implementation of such a policy, a relatively large share of new issues would probably be judged to be arbitrage bonds because a large amount of investment assets would be available in comparison with the size of any one year’s new issues.

CBO refers to that measurement approach as the “first-year measure” because it measures the immediate effect of broadening the definition of tax arbitrage. The first-year measure uses data on investment assets from the Form 990 information returns and data on annual bond issues from the Form 8038 information returns.

As the years progressed and a larger share of investment assets would have their yield restricted to cover prior years’ new issues, fewer new issues would be classified as arbitrage bonds. Under an assumption that hospitals would not alter their accumulation of assets or their tax-exempt borrowing in response to the change in definition, the existing balance between the stock of investment assets and the outstanding stock of tax-exempt bonds could be viewed as a possible equilibrium. Therefore, if a new bond issue was less than the difference between the investment assets and the outstanding stock of tax-exempt bonds (that difference being the relationship observed in the historical measure), the level of arbitrage bonds would be equal to the new issue. If a new bond issue was greater than that difference, the level of arbitrage bonds would be equal to the difference. Thus, the level of arbitrage bonds would be the lesser of the new issue of tax-exempt bonds or the difference between the investment assets and the outstanding stock of tax-exempt bonds. In essence, the measure assumes that the historical measure of arbitrage bonds has already been applied and that new bond issues are measured against any residual assets not applied to previously issued bonds.

Table 1.

Summary of Data Used to Estimate Nonprofit Hospitals' Level of Arbitrage Bonds, 2002

(Millions of dollars)

	All Hospitals		Hospitals That Borrowed in 2002	
	Total	Median	Total	Median
Number of Hospitals	2,912	n.a.	310	n.a.
Net Investment Assets	105,548	3.55	21,188	14.83
Outstanding Stock of				
Tax-Exempt Debt	93,655	0	17,902	10.53
Mortgage Debt	31,304	1.04	4,163	0.92
Adjusted Outstanding Stock of				
Tax-Exempt Debt ^a	123,844	10.00	21,851	23.36
New Bond Issues	n.a.	n.a.	8,384	15.05

Source: Congressional Budget Office based on data from the Internal Revenue Service drawn from Form 8038 and Form 990 information returns.

Note: n.a. = not applicable.

a. The adjusted outstanding stock of tax-exempt debt includes most mortgages reported on Form 990 added to the stock of tax-exempt bonds.

CBO refers to that measurement approach as the “steady-state measure” because it measures the effect of the change in definition when it is fully phased in. It uses data on investment assets and the outstanding stock of tax-exempt bonds from the Form 990 information returns and data on annual bond issues from the Form 8038 information returns.

Measuring Investment Assets. For all hospitals (on the basis of the sample of Form 990 information returns weighted to produce population estimates) and those that borrowed in 2002 (on the basis of the match of the data from the Forms 990 and 8038), net investment assets exceeded the outstanding stock of tax-exempt debt (see Table 1). Also, the hospitals borrowing in 2002 had, on average, larger outstanding stocks of bonds than did all hospitals, because the set of 2002 borrowers excluded all hospitals that never borrowed: the medians were \$10.5 million and zero, respectively. Both of those medians are underestimates that reflect misreporting of part of the tax-exempt-bond stock as mortgages on the Form 990 (an issue discussed below).

Hospitals accumulate investment assets for a variety of reasons, including to earn income, to protect against uncertainty (precautionary savings), to enhance their reputation, and to honor gift restrictions. Some of those reasons might imply that some investment assets should not to be counted when estimating arbitrage bonds.

The need to hold some level of precautionary savings is the most compelling reason that, even with a concern about tax arbitrage, it may be appropriate for nonprofits to hold some investment assets that are not subject to yield restriction. Those precau-

tionary savings may be valuable to the hospital and its ability to provide community benefits. The bond-rating agencies offer higher credit ratings as a hospital's days of cash on hand increases, and financial markets translate those higher ratings into lower interest rates.¹³ Nonprofit hospitals' precautionary savings are, in fact, substantial: the median number of days of cash on hand for the 310 nonprofit hospitals that issued tax-exempt debt in 2002 was 117 days and ranged from a high exceeding 38,000 days to a low of zero.

The broadened definition of arbitrage probably could be implemented without violating gift restrictions imposed on some investment assets. For example, a \$1 million gift to finance a cancer center would not be violated by restricting the yield on it in order to issue tax-exempt debt to purchase a magnetic resonance imaging machine (MRI). The gift would not be spent on the MRI; only the earnings of the gift would be affected. Furthermore, not including such gifts in the calculation of tax arbitrage would create an incentive for hospital managers to ask donors to impose restrictions on their gifts so the hospitals could earn tax arbitrage profits. That response might substantially reduce hospitals' ability to use such gifts to provide community benefits: restrictions on gifts increase the share of benefits appropriable to the donor while simultaneously decreasing the expected value of the community benefits the hospital can generate with the gifts.

Measuring Tax-Exempt Debt. One difficulty with the data is that tax-exempt borrowing may be misreported. When the National Council of Health Facilities Finance Authorities compared the Form 990 returns, including supporting statements, and the audited financial statements in two states for all hospitals that appeared in CBO's Form 8038 data set, that analysis revealed that substantial tax-exempt debt was reported on the Form 990 returns as mortgages.

As a result, CBO examined the Form 990 returns and supporting statements filed by a portion of the 310 hospitals that borrowed in 2002. In every instance in which the hospital reported zero tax-exempt liabilities and positive mortgage liabilities, those mortgage liabilities were almost entirely (99.6 percent) tax-exempt liabilities. In many cases, a parent corporation borrowed using tax-exempt debt and made a loan to the hospital, which the hospital did not report as a tax-exempt liability. In instances when hospitals reported both tax-exempt liabilities and mortgages, 84 percent of the mortgage liabilities were tax-exempt liabilities.

13. Moody's Investors Service measures days of cash on hand as 365 times the sum of cash, savings, and investment assets divided by the operating expenses net of depreciation. In effect, it measures how many days of operating expenses could be covered if they had to be financed from investment assets and working capital. In 2004, the median days of cash on hand for all rated nonprofit hospitals was 146.3; for all hospitals rated below Baa, 50.6; rated Baa, 108; rated A, 166; rated Aa, 235. See Moody's Investors Service, *Moody's Public Finance Healthcare Ratings* (August 2005), p. 23.

CBO used those percentages to reclassify mortgage liabilities reported on the Form 990 returns as tax-exempt liabilities (see Table 1). Before that reclassification, the median outstanding stock of tax-exempt debt was zero; at least half of all of the non-profit hospitals did not appear to take advantage of that tax preference. After mortgages were added to that stock of debt, the median rose to \$10 million. Making the adjustment increased the outstanding stock of tax-exempt bonds for all nonprofit hospitals (based on the IRS sample of Form 990 information returns) by 32 percent, from \$93.7 billion to \$123.8 billion. The outstanding stock of tax-exempt bonds for the 310 hospitals in the Form 8038 data set (using the Urban Institute's Form 990 data set for the stock of bonds) increased 22 percent, from \$17.9 billion to \$21.9 billion.

Arbitrage Bond Estimates

As explained, the data used to estimate the level of arbitrage bonds under a broader definition of tax arbitrage included information on 310 of the 348 nonprofit hospitals that borrowed using tax-exempt debt in 2002. If those 310 hospitals' investment assets and outstanding stock of tax-exempt debt were typical, the estimates for future groups of hospital borrowers would probably be similar. To evaluate that assumption would require examining additional years of Form 8038 data, but a comparison of all nonprofit hospitals in 1996 and 2002 shows that the historical measure of tax arbitrage was similar in the two years (see Appendix A).

Nonprofit hospitals borrow with tax-exempt debt at the same time that they earn a higher rate of return on investment assets. If the broader definition of tax arbitrage is applied to the stocks of accumulated assets and tax-exempt debt that those 310 hospitals reported in 2002 (that is, the historical measure), 57 percent of the hospitals were earning returns from tax arbitrage on almost \$11 billion of tax-exempt debt, or 61 percent of their outstanding stock of bonds (see the historical measure in Table 2).¹⁴

However, that stock of tax-exempt debt is underestimated because it does not include mortgages misreported as taxable liabilities. When the stock of tax-exempt bonds is corrected, 80 percent of that population of nonprofit hospitals were earning returns on tax arbitrage on almost \$13 billion of tax-exempt debt, or 60 percent of their outstanding stock of bonds (see the historical measure in Table 3).¹⁵

14. If the distribution of hospitals that borrow using tax-exempt debt varies by size across the years, the dollar figures from the 2002 estimates might be particular to those 310 hospitals and might be too low or too high.

15. Implementing a broader definition of tax arbitrage would not only reduce the tax preference for those nonprofit hospitals with substantial accumulated investment assets, but also it would also impose a differential cost of capital on those hospitals with and without accumulated investment assets.

Table 2.

The Level of Arbitrage by Nonprofit Hospitals That Borrowed in 2002, Without Adjustments to Correct for Misreporting

	Historical Measure ^a		First-Year Measure ^b		Steady-State Measure ^c	
	Number	Percentage	Number	Percentage	Number	Percentage
Number of Hospitals with Tax-Exempt Debt						
Hospitals Conducting Arbitrage Under a Broader Definition	178	57.4	264	85.2	163	52.6
Full	77	24.8	156	50.3	86	27.7
Partial	101	32.6	108	34.8	77	24.8
Hospitals Not Conducting Arbitrage	132	42.6	46	14.8	147	47.4
Value of Tax-Exempt Debt (Millions of dollars)						
Arbitrage Under a Broader Definition	10,896	60.9	5,385	64.2	2,899	34.6
Full	5,752	32.1	4,032	48.1	1,716	20.5
Partial	5,143	28.7	1,353	16.1	1,183	14.1
Debt Not Deemed Arbitrage	7,007	39.1	2,999	35.8	5,484	65.4
Total	17,902	100.0	8,384	100.0	8,384	100.0

Source: Congressional Budget Office based on data from the Internal Revenue Service drawn from Form 8038 and Form 990 information returns.

Note: Calculations are based on information on 310 hospitals.

- The historical measure is based on the hospitals' outstanding stock of tax-exempt bonds and does not include bonds issued in 2002.
- The first-year measure, based on bonds issued in 2002, estimates what the initial effects of implementing a broader definition of tax arbitrage would be.
- The steady-state measure, based on the bonds issued in 2002, estimates what the effects would be after the hospitals have adjusted to the initial implementation of a broader definition of tax arbitrage.

Those estimates are sensitive to the amount of investment assets allowed to escape yield restriction for precautionary savings. If that allowance is set to 100 days of operating expenses, 35 percent of those nonprofit hospitals were earning returns on tax arbitrage on an outstanding stock of bonds equal to \$7.2 billion, or 33 percent of their outstanding stock (see the historical measure in Table 4).

Under an assumption that the current relationship between hospitals' accumulation of investment assets and tax-exempt borrowing is not affected by the broader definition of tax arbitrage, at some point in the future the share of new bond issues classified as arbitrage bonds would reach a steady state and be substantially less than the previous estimates. Absent an allowance for precautionary savings, about 37 percent of all hos-

Table 3.

The Level of Arbitrage by Nonprofit Hospitals That Borrowed in 2002, as Adjusted to Correct for Misreporting

	Historical Measure ^a		First-Year Measure ^b		Steady-State Measure ^c	
	Number	Percentage	Number	Percentage	Number	Percentage
Number of Hospitals with Tax-Exempt Debt						
Hospitals Conducting Arbitrage Under a Broader Definition	249	80.3	264	85.2	116	37.4
Full	101	32.6	156	50.3	57	18.4
Partial	148	47.7	108	34.8	59	19.0
Hospitals Not Conducting Arbitrage	61	19.7	46	14.8	194	62.6
Value of Tax-Exempt Debt (Millions of dollars)						
Arbitrage Under a Broader Definition	13,171	60.3	5,385	64.2	2,360	28.2
Full	6,665	30.5	4,032	48.1	1,217	14.5
Partial	6,506	29.8	1,353	16.1	1,143	13.6
Debt Not Deemed Arbitrage	8,680	39.7	2,999	35.8	6,024	71.8
Total	21,851	100.0	8,384	100.0	8,384	100.0

Source: Congressional Budget Office based on data from the Internal Revenue Service drawn from Form 8038 and Form 990 information returns.

Notes: The estimates in this table incorporate CBO's adjustments to the figures for hospitals' outstanding stock of tax-exempt bonds to correct for their misreporting of mortgages as taxable liabilities.

Calculations are based on information on 310 hospitals.

- a. The historical measure is based on the hospitals' outstanding stock of tax-exempt bonds and does not include bonds issued in 2002.
- b. The first-year measure, based on bonds issued in 2002, estimates what the initial effects of implementing a broader definition of tax arbitrage would be.
- c. The steady-state measure, based on the bonds issued in 2002, estimates what the effects would be after the hospitals have adjusted to the initial implementation of a broader definition of tax arbitrage.

pitals borrowing with tax-exempt debt in 2002 would be earning tax arbitrage on about \$2.4 billion, or 28 percent, of their bonds (see the steady-state measure in Table 3). If allowance is made for 100 days of precautionary savings, those numbers would decline to 15 percent of hospitals earning arbitrage returns on about \$761 million, or 9 percent of their bonds (see the steady-state measure in Table 4).

Over time, the federal government's net fiscal condition from a broadened definition of tax arbitrage would improve. Hospitals would have to reduce their new issues

Table 4.

The Level of Arbitrage by Nonprofit Hospitals That Borrowed in 2002, as Adjusted to Correct for Misreporting and to Allow for Precautionary Savings

	Historical Measure ^a		First-Year Measure ^b		Steady-State Measure ^c	
	Number	Percentage	Number	Percentage	Number	Percentage
Number of Hospitals with Tax-Exempt Debt						
Hospitals Conducting Arbitrage Under a Broader Definition	109	35.2	116	37.4	47	15.2
Full	40	12.9	68	21.9	22	7.1
Partial	69	22.3	48	15.5	25	8.1
Hospitals Not Conducting Arbitrage	201	64.8	194	62.6	263	84.8
Value of Tax-Exempt Debt (Millions of dollars)						
Arbitrage Under a Broader Definition	7,218	33.0	2,716	32.4	761	9.1
Full	3,068	14.0	1,629	19.4	363	4.3
Partial	4,150	19.0	1,087	13.0	398	4.7
Debt Not Deemed Arbitrage	14,633	67.0	5,668	67.6	7,623	90.9
Total	21,851	100.0	8,384	100.0	8,384	100.0

Source: Congressional Budget Office based on data from the Internal Revenue Service drawn from Form 8038 and Form 990 information returns.

Notes: The estimates in this table incorporate CBO's adjustments to the figures for hospitals' outstanding stock of tax-exempt bonds to correct for their misreporting of mortgages as taxable liabilities. The estimates also allow for hospitals to maintain 100 days of precautionary savings that is not subject to yield restriction.

Calculations are based on information on 310 hospitals.

- a. The historical measure is based on the hospitals' outstanding stock of tax-exempt bonds and does not include bonds issued in 2002.
- b. The first-year measure, based on bonds issued in 2002, estimates what the initial effects of implementing a broader definition of tax arbitrage would be.
- c. The steady-state measure, based on the bonds issued in 2002, estimates what the effects would be after the hospitals have adjusted to the initial implementation of a broader definition of tax arbitrage.

of tax-exempt bonds (either reducing investment in operating assets or switching to taxable debt) by 28 percent (or by 9 percent if the policy accommodated precautionary savings). For example, if tax-exempt bonds provide an annual benefit of \$1.8 billion to nonprofit hospitals, as estimated for 2002, then over time the broadened definition of tax arbitrage would save \$504 million per year (or \$162 million if allowance was made for precautionary savings). If hospitals chose instead to subject their investment assets to yield restriction, tax expenditures would not change but the gov-

ernment would realize an equivalent amount in reduced borrowing costs or increased earnings.¹⁶

Those estimates of tax arbitrage reflect a variety of judgments about how best to measure the stock of tax-exempt debt, how many investment assets to hold aside for precautionary savings, and which measurement best represents the effect of the changed definition of tax arbitrage. The remainder of this section describes how those judgments affect the number of hospitals using arbitrage bonds and the share of bonds classified as arbitrage bonds.

Estimates with Hospitals' Bond Stock Unadjusted

With no adjustments to the outstanding stock of tax-exempt debt or allowance for precautionary savings, the 310 hospitals borrowing in 2002 had \$17.9 billion in outstanding bonds (see the historical measure in Table 2). As described, the historical measure indicates that 57 percent of the hospitals used arbitrage bonds and that 61 percent (\$10.9 billion) of their outstanding stock of bonds was earning returns from tax arbitrage.¹⁷

In the first year following a broadening of the definition of tax arbitrage, 85 percent of the 310 hospitals borrowing with tax-exempt funds in 2002 would have arbitrage bonds, and 64 percent of their \$8.4 billion bond volume (\$5.4 billion) would be considered arbitrage bonds (see the first-year measure in Table 2).

The steady-state measure of arbitrage bonds is calculated once a balance has been established between asset accumulation and bond issuance. About 53 percent of hospitals would have arbitrage bonds and 35 percent of their \$8.4 billion in new issues (\$2.9 billion) would be arbitrage bonds (see the steady-state measure in Table 2).

16. Assume a \$1,000 taxable bond yields 8 percent and a tax-exempt bond yields 6 percent. A hospital that chose not to use that \$1,000 tax-exempt bond would decrease the government's tax expenditure by \$20 (calculated as the \$1,000 bond times the 8 percent taxable bond rate times the 0.25 income tax rate of the bondholder). A hospital that chose to subject its returns to yield restriction could rebate the returns from tax arbitrage or invest in State and Local Government Series bonds (SLUGS). If it chose to rebate its earnings from tax arbitrage and it was investing in taxable debt, it would rebate \$20 (calculated as the taxable bond principal of \$1,000 times the difference between the 8 percent taxable bond rate and the 6 percent tax-exempt bond rate). If it chose to buy SLUGS, the federal government's borrowing costs would decline by \$20 (calculated as the difference between financing \$1,000 of borrowing at 6 percent rather than 8 percent). Of course, hospitals might earn more or less than the taxable bond rate on their investment portfolios, but that only means that the government shares the risk premium on equity investments when a hospital chooses the rebate option.

17. The estimates are restricted to hospitals that issued tax-exempt debt in 2002. The historical measure could overstate the severity of tax arbitrage for all hospitals if many hospitals issue little or no debt. The historical measure of tax arbitrage for the entire population of hospitals in 2002 (presented in Appendix A) is only slightly smaller (57.8 percent).

Estimates with Bond Stock Adjusted

Adjusting the outstanding stock of tax-exempt debt to include the tax-exempt bonds classified as mortgage liabilities on the Form 990 information returns increases the outstanding stock of bonds and the share of those bonds classified as arbitrage bonds under the broader measure (see Table 3). For the historical measure, the share of hospitals that earned returns from tax arbitrage rises to 80 percent. Although the increased stock of tax-exempt debt increases the dollar value of arbitrage bonds, the share of bonds classified as arbitrage bonds is reduced slightly, to 60 percent (from a share of 61 percent using unadjusted bond data).

The percentage of hospitals earning returns from tax arbitrage and the dollar volume of new issues classified as arbitrage bonds in the first year following the implementation of the broader definition of tax arbitrage do not change from the estimates relying on unadjusted bond data because the first-year measure does not use the stock of tax-exempt debt in calculating the level of arbitrage bonds. In the steady state, though, the share of hospitals with arbitrage bonds is reduced to 37 percent, and the share of new bond issues classified as arbitrage bonds declines to 28 percent (\$2.4 billion).

Adjustment for Precautionary Savings

If investment assets are reduced by precautionary savings adequate to finance 100 days of operating expenses, the percentage of hospitals earning tax arbitrage returns and the share of bonds classified as arbitrage bonds are reduced for all three measures. In the steady state, only 15 percent of hospitals use arbitrage bonds, and only 9 percent of the bond volume, \$761 million, is classified as arbitrage bonds (see Table 4).¹⁸

To summarize (as done in Figure 2), first, the share of the stock of tax-exempt bonds classified as arbitrage bonds (the historical measure) exceeds the share of new issues classified as arbitrage bonds once an equilibrium between asset accumulation and tax-exempt borrowing (the steady-state measure) is established. Second, the adjustment of the tax-exempt-bond stock to include bonds misreported as mortgages decreases slightly the share of arbitrage bonds. Third, setting aside larger amounts of investment assets as precautionary savings decreases the share of arbitrage bonds.

Hospitals' Response to Implementation of a Broader Arbitrage Definition

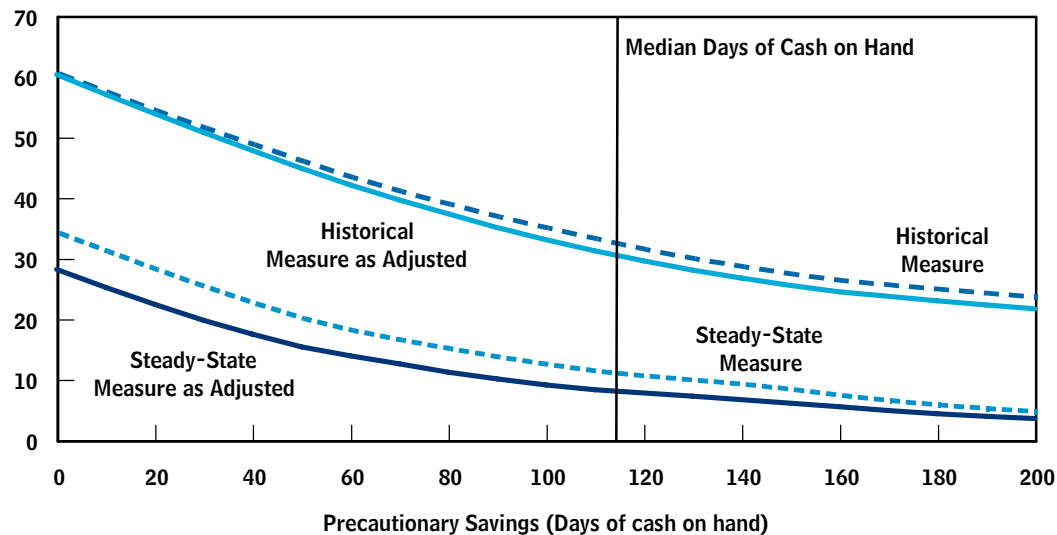
Nonprofit hospitals would probably change their behavior in response to a broadened definition of tax arbitrage. Those institutions with large enough portfolios would see an effective increase in the cost of capital. The decrease in tax benefits and the increase

18. No absolute standard exists for what a reasonable allowance of precautionary savings might be. One comparison would be the 135 days' average cash on hand maintained by for-profit hospitals in 2003. That estimate derives from information on 120 such hospitals in California, obtained from combining cost data reported to Medicare and audited financial data from the California Office of Statewide Health Planning and Development.

Figure 2.

Nonprofit Hospitals' Arbitrage Bonds and Precautionary Savings, 2002

(Percentage of bonds classified as arbitrage)



Source: Congressional Budget Office based on data from the Internal Revenue Service (IRS).

Notes: For both the historical and steady-state measures, the unadjusted estimates are based on hospitals' outstanding stock of tax-exempt debt as reported on IRS Form 990, and the adjusted estimates are based on that stock as corrected to include mortgages financed with tax-exempt debt.

The median number of days of cash on hand for the 310 nonprofit hospitals in 2002 was 117. The average number of days of cash on hand for for-profit hospitals in 2003 was 135.

in their cost of capital would lead them to reduce their investment in structures and equipment. That change in behavior would have several implications.

First, the hospitals would borrow less so the actual quantity of tax arbitrage bonds under the expanded definition would be smaller than implied by the steady-state figures calculated here. As with any tax increase, the volume of the activity being taxed tends to decrease in consequence.

Second, broadening the rule would result in two different costs of capital for nonprofit hospitals. Nonprofits with larger portfolios of investment assets would be more likely to be subject to the rule and thus effectively face higher interest costs associated with financing using taxable debt. Hospitals with smaller amounts of such assets would be more likely to continue to receive the benefit of tax-exempt financing. Both would still face lower costs of capital than for-profit hospitals. But the different borrowing costs of the two groups of nonprofit hospitals could engender inefficiencies by creating a new differential in capital costs.

The ultimate outcome for efficient allocation of resources would be uncertain, depending on which dominated, the potentially efficiency-enhancing effect of nar-

rowing the cost-of-capital differential between nonprofit and for-profit hospitals, or the potentially efficiency-damaging effect of creating a capital-cost differential among nonprofit hospitals, depending on their portfolios of investment assets.

Appendix A: A Previous Estimate of Nonprofit Hospitals' Use of Arbitrage Bonds

A previous effort, by William Gentry, to estimate nonprofit hospitals' use of arbitrage bonds employed Form 990 information returns from 1996 to compare investment assets to the outstanding stock of tax-exempt bonds, the Congressional Budget Office's (CBO's) historical measure.¹ In comparison, in the information from 2002 that CBO used, the total number of hospitals was higher by about 20 percent and the outstanding stock of tax-exempt bonds by almost 80 percent (see Table A-1). But in both analyses, the percentage of hospitals with arbitrage bonds (about 90 percent) and the percentage of tax-exempt-bond volume satisfying the broader definition of tax arbitrage (about 58 percent) were very similar. Nonprofit hospitals' behavior does not seem to have changed much over the 1996-2002 period. The relationship between hospitals' accumulation of investment assets and use of tax-exempt debt appears to have been stable.

1. See William M. Gentry, "Debt Investment and Endowment Accumulation: The Case of Not-for-Profit Hospitals," *Journal of Health Economics*, vol. 21, no. 5 (2002), pp. 845-872.

Table A-1.

Comparison of CBO's Estimates and Earlier Estimates of Nonprofit Hospitals' Use of Arbitrage Bonds

	CBO's Estimates (2002) ^a		Gentry's Estimates (1996)	
	Number	Percentage	Number	Percentage
Number of Hospitals with Tax-Exempt Debt				
Hospitals Conducting Arbitrage				
Under a Broader Definition	1,149	90.1	918	88.0
Full	395	31.0	374	35.9
Partial	754	59.1	544	52.2
Hospitals Not				
Conducting Arbitrage	127	9.9	125	12.0
Total	1,276	100.0	1,043	100.0
Value of Tax-Exempt Debt (Millions of dollars)				
Any Arbitrage	54,136	57.8	32,600	58.3
Full arbitrage	30,857	32.9	19,500	34.9
Partial arbitrage (Includes only arbitrage portion)	23,279	24.9	13,100	23.4
No Arbitrage (Includes nonarbitrage portion of partial arbitrage bonds)	39,518	42.2	23,300	41.7
Total	93,655	100.0	55,900	100.0

Source: Congressional Budget Office (CBO) based on data from the Internal Revenue Service drawn from information returns Form 990; William M. Gentry, "Debt Investment and Endowment Accumulation: The Case of Not-for-Profit Hospitals," *Journal of Health Economics*, vol. 21, no. 5 (2002), pp. 845-872.

- a. The estimates by CBO presented here convey its "historical measure," which is based on the hospitals' outstanding stock of tax-exempt bonds and does not include bonds issued in 2002.
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Appendix B: The Cost of Capital

Potential Economic Costs from Nonprofit Hospitals' Tax Preferences

The tax preferences provided to nonprofit hospitals might distort investment choices and reduce national income if they cause investment capital to move from higher-return projects that are subject to taxation to lower-return projects that are exempt. The first step in estimating the potential magnitude of such costs is to estimate the difference in the cost of capital between for-profit and nonprofit hospitals.

The Congressional Budget Office estimates that the cost of capital for a for-profit hospital was about 12.9 cents per dollar of investment in June 2006 (see Table B-1). In other words, investors would have been willing to invest in a for-profit hospital only if they expected to earn at least 12.9 cents each year for each dollar of investment. In contrast, a nonprofit hospital that could use tax-exempt debt had a cost of capital of about 10.8 cents per dollar, about 2.1 cents per dollar less than a for-profit hospital.¹ Roughly one-third of that reduction in the cost of capital comes from the use of tax-exempt bonds if taxable debt is substituted for tax-exempt debt. The balance results from the nonprofit hospitals' exemption from corporate income taxes.

The reduction in a nonprofit hospital's cost of capital provides an equivalent reduction in the pretax real return that it requires. In mid-2006, for-profit hospitals needed to obtain a return of at least 7.7 percent (their cost of capital minus economic depreciation) to make capital investments economically worthwhile. Because tax savings reduce nonprofits' cost of capital, they can earn a lower return on investment than their for-profit counterparts: 5.6 percent. That lower required pretax return gives nonprofit hospitals an incentive to pursue additional projects that make sense only because of the tax exemption. A project that returns 6 percent, for example, could be pursued by a nonprofit hospital but not by a for-profit hospital. But the only way to finance that project is to take capital away from an unsubsidized investment that would earn at least 7.7 percent.

If nonprofit hospitals invest in lower-value activities because of that lower pretax return, those investments contribute less to national income—between almost zero and 2 cents per dollar of investment—than unsubsidized investments returning 7.7 cents per dollar do.

1. Including state tax preferences would further reduce the nonprofit hospital's cost of capital.

Table B-1.

Scenarios Illustrating the Cost of Capital for For-Profit and Nonprofit Hospitals

	For-Profit Hospital	Nonprofit Hospital	
		Scenario 1	Scenario 2
Assumed Mix of Financing (Percent)			
Debt, and its tax status	38, taxable	38, tax-exempt	38, taxable
Equity ^a	62	62	62
Cost of Capital (Cents per dollar)	12.89	10.79	11.44
Decrease in Nonprofit Hospital's Cost Relative to For-Profit Hospital's Cost			
Cents per dollar	n.a.	2.10	1.45
Percent	n.a.	16.3	11.2
Tax Preferences' Contributions to Decrease in Cost of Capital (Percent)			
Income tax exemption	n.a.	69	100
Tax-exempt bonds	n.a.	31	0

Source: Congressional Budget Office.

Note: n.a. = not applicable.

a. Equity financing is based on a hospital's endowment funds.

The Derivation of the Cost of Capital and the Pretax Real Return

A firm's cost of capital depends on many factors: the interest rate on debt financing, the return paid to those who provide equity financing, the rate at which the productive life of assets declines (economic depreciation), the tax treatment of each of those factors, and the corporate income tax rate. The exemption from income taxes eliminates a nonprofit hospital's expenses from that source, and the exclusion of interest income on its debt from federal taxation lowers the interest rate on its debt financing.

The cost of capital per dollar of investment, c , is equal to

$$c = (R+d)(1-uz) / (1-u)$$

where

R is the organization's real after-tax discount rate, a weighted average of the pretax real returns for the three potential financing sources (taxable debt, tax-exempt debt, and equity), with taxable debt adjusted for its deductibility;

d is the rate at which the economic value of the asset depreciates;

u is the corporate tax rate; and

z is the present value of tax depreciation per dollar of investment

R depends on the type of financing used by the hospital. For example, a for-profit hospital financing an investment with taxable debt would have to pay lenders, on the basis of the Baa bond rates that prevailed in June 2006, about 6.9 percent in nominal terms. But the corporation can deduct that interest expense, so the after-tax interest rate would be 4.5 percent. With expected economywide inflation of 1.8 percent deducted, the hospital would pay a real after-tax interest rate of 2.7 percent.² The hospital would pay a 7.0 percent real return to finance the investment with equity, a cost that is not deductible.³ Since most hospitals finance an investment with a mixture of debt and equity, the real after-tax discount rate would be a weighted average of 2.7 percent for debt and 7.0 percent for equity.

To that discount rate must be added economic depreciation. That sum is adjusted for the value of tax-depreciation allowances (to account for the excess of tax-depreciation allowances compared to economic depreciation), and the result is then increased to reflect the income taxes paid on net income. The result is the firm's cost of capital.

A nonprofit hospital can borrow at a lower interest rate, about 5.15 percent rather than 6.9 percent, because its debt is tax-exempt. The difference in interest rates is determined by the marginal tax rate (25 percent in this example) of the bond purchaser to whom the bond issuer must sell the last bond. However, the nonprofit hospital cannot deduct that interest expense (because it pays no income taxes). After an adjustment for 1.8 percent inflation, the real interest rate is 3.35 percent. The hospital would pay a 7.0 percent real return on any portion of the investment financed with equity (the opportunity cost of not investing its assets). If the hospital finances with a mixture of tax-exempt debt and equity, the real discount rate would be a weighted average of 3.35 percent for debt and 7 percent for equity. That rate is adjusted upward for economic depreciation, but adjustments for tax depreciation and income tax payments are not necessary because the nonprofit pays no federal income taxes.

The pretax real return, r , that must be earned to make the investment economically worthwhile for the hospital is:

$$r = c - d$$

that is, the cost of capital minus economic depreciation.

2. Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2007 to 2016* (January 2006).

3. The historical real return on equity is estimated by Jeremy Siegel, *Stocks for the Long Run* (New York: McGraw-Hill, 1998).