Rethinking Tax-Exempt Financing for State and Local Governments

During the past three years, the cost of financing state and local debt has risen for all levels of government. State and local governments are paying significantly higher interest rates on their long-term borrowings than in the past. This means that they are incurring higher costs at a time when they have been experiencing sharp cutbacks in Federal aid, significant slowdowns in tax revenues, and large needs to rebuild public structures. At the same time, by not taxing the interest income on municipal bonds, the Federal Government is foregoing substantial revenues during a period when it is facing sizable deficits. About half of the increase in the cost of financing state and local debt reflects the general increase in all interest rate levels over the past few years. However, half of it has been caused by factors that have had an adverse impact on the municipal bond market itself.

Between 1979 and early 1982, yields on new issues of long-term state and local debt rose nearly twice as much on a percentage basis as yields on long-term corporate and Treasury debt. This deterioration in the long-term tax-exempt market, compared with the market for taxable securities, has focused attention on a problem that predates the high rates of recent years, *i.e.*, the implicit subsidy of Federal tax exemption for interest on long-term state and local debt is not so effective as it could be. In particular, the rise in relative yields indicates that a significant and growing part of the subsidy is going to purchasers of long-term state and local bonds rather than the issuers. By way of contrast, rates on short-term state and local debt have tended to move with rates on taxable issues and the subsidy appears to be quite effective.

The purpose of this analysis is to explore the dimensions of the problem in the long-term market as well as reasons why it exists. Historical data show that the Federal subsidy has consistently been significantly less effective than might be expected. This is primarily because of the limited demand by investors in high marginal tax brackets for tax-exempt issues relative to the existing and new supplies of municipal securities. A logical extension of the analysis is a set of policy alternatives that could result in significant improvements in the market from the standpoint of state and local issuers and the Federal Government. These include:

- Instituting a taxable bond option,
- Shifting some long-term borrowing into the short end of the market, and
- Restricting the volume of revenue bonds either on a voluntary basis by states and localities or through Federal legislation.

An analysis of the problem

Yields for municipal securities are expected to be lower than those for Treasury and corporate issues of comparable maturity. This is because the interest income is exempt from Federal income taxes. Investors are able to obtain the same or higher aftertax return on tax-exempt securities as on taxable issues even though the nominal tax-exempt yields are lower. For individual investors, the break-even point between municipal and taxable securities will depend on their tax brackets. The higher the marginal tax rate the lower the tax-exempt yield must be relative to

the taxable yield for an investor to receive an equivalent aftertax return. This basic fact is true for both individuals and institutions.

The relationship between tax-exempt and taxable yields is usually stated in terms of yield spreads or yield ratios. The yield spread has the advantage of showing the actual yield difference; however, it has the drawback of being sensitive to the level of interest rates. For illustrative purposes, suppose an investor faces a 50 percent marginal tax rate. A yield spread of 5 percentage points would result in an equivalent aftertax income to the investor from either a taxable or a tax-exempt security when taxable rates are 10 percent, but a spread of 6 percentage points is needed when taxable rates are 12 percent. In contrast, the yield ratio is insensitive to rate levels. It is usually a more useful measure of the relationship between tax-exempt and taxable yields, especially during a period of volatile rate changes. In the above example, the yield ratio consistent with the equality of the aftertax income from taxable and tax-exempt investments is 0.50, regardless of whether taxable rates are 10 percent or 12 percent.

It can be easily shown that, for an individual investor, equivalent aftertax income is obtained from taxable and tax-exempt securities of comparable duration and risk when the yield ratio equals 1.0 minus the marginal tax rate. This means that the higher the marginal tax bracket of an investor the lower the yield ratio that would result in equivalence between the aftertax returns from taxable and tax-exempt securities. For example, for an investor in a 46 percent marginal tax bracket, the break-even yield ratio would be 0.54.

Benchmark yield ratios

To determine what yield ratio to expect in the market (as opposed to the ratio for an individual investor), it is necessary to know who owns state and local bonds and their marginal tax brackets. At present, most tax-exempt securities are purchased by three groups of investors: commercial banks, property and casualty insurance companies, and individuals. Less than 10 percent is owned by a variety of other firms and organizations, including dealers and brokers, life insurance companies, and state and local pension funds (Table 1). Suppose that the individuals and firms in the tax-exempt market all were in the highest marginal tax brackets to which they can be subject under the Federal individual and corporate income tax laws. What would be the yield ratio that might be expected, given the maximum tax rates of current market participants?

At present, commercial banks and property and casualty insurance companies face a maximum tax rate of 46 percent. The maximum tax rate for individuals is 50 percent (70 percent prior to January 1, 1982). The remaining participants face slightly lower maximum tax rates. Overall, the weighted average of the maximum tax rates for current market participants is about 45 percent today and was about 50 percent prior to January 1, 1982. Keeping in mind that for individual investors the break-even yield ratio is 1.0 minus the marginal tax rate, the yield ratio consistent with the maximum tax rates for current market participants is about 0.55 and was approximately 0.50 prior to 1982.[1]

Yield ratios of about 0.55 currently and 0.50 in prior years would represent hypothetical benchmarks for measuring the effectiveness of the tax-exempt subsidy if the tax-exempt and taxable issues were of the same duration and risk. Given the mix of investors, the interest rates paid by state and local governments (and the revenue loss to the Federal Government) would, in theory, be minimized at these yield ratios.

Benchmark yield ratios and credit risk

The benchmark yield ratios represent a theoretical relationship between taxable and tax-exempt yields. What that relationship will be in practice depends on several factors. The most important of these are the perceived riskiness of tax-exempt bonds and the effectiveness of the tax-exempt subsidy.

First, the benchmark yield ratios assume that the tax-exempt and taxable issues are completely equivalent except for the tax treatment. In practice, this is seldom the case. For example, prime municipal securities are generally perceived as carrying greater credit risk than Treasury securities of comparable duration. The added risk premium for municipal issues would cause the actual yield ratios to be greater than the benchmark levels (Also, the risk premium may vary over time, depending on the state and local fiscal outlook and the occurrence of well-publicized problems like the New York City and Cleveland fiscal crises.)

A method, which uses the information embedded in corporate yields to adjust upward the prime municipal-Treasury yield ratio, concludes that the benchmark yield ratios should be increased by 5 percent. That is, the current benchmark should be raised from 0.55 to 0.60 and the pre-1982 benchmark increased from 0.50 to 0.55. This adjustment represents 50 to 75 basis points when yields on state and local bonds are between 10 and 15 percent. This may appear like a rather small adjustment. However, it is important to recall

[1] Technically, in a perfect market, the market's yield ratio would equal 1.0 minus the marginal tax bracket of the marginal investor, *i.e.*, the one with the lowest marginal tax rate. This would imply that the yield ratio consistent with a market comprised of commercial banks, property and casualty insurance companies, and high-income individuals would be 0.54—a figure close to the numbers used in the text.

Table 1

Owner Distribution of Outstanding State and Local Government Obligations

Levels in billions of dollars, shares in percent

Year-end	Commercial banks		Property and casualty insurance companies		Households*		Other holders†		Total holders	
	Level	Share	Level	Share	Level	Share	Level	Share	Level	Share
1968	58 9	47.8	14.4	11.7	37.6	30 5	12 3	10 0	123 2	100
1970	70 2	48 6	17.0	11 8	46 0	31.9	11 2	7 8	144 4	100
1972	90 0	51 0	24 8	14 1	48 4	27 4	13 3	7 5	176 5	100
1974	101 1	48.7	30 7	14 8	61 9	29.8	14 0	6.7	207.7	100
1976	106 0	44.2	38 7	16 1	70 6	29 5	24.2	10.1	239 5	100
1978	126 2	43.3	62 9	21.6	75.4	25.9	26.8	9 2	291 3	100
1980	149 2	41 8	80 5	22.6	100.9	28 3	26 3	7.4	356 9	100
1981	154 2	39 6	84 5	21 7	124 3	31 9	26 8	6.9	389 8	100

* Including mutual funds Growth of holdings by mutual funds since 1975 was as follows.

Year-end	Billions of dollars
1975	nil
1976	0 5
1977	2 2
1978	2 7
1979	4 0
1980	6 4
1981	9 3

† Other holders, at end-1981

	Level	Share
Nonfinancial corporate businesses	3.5	0 9
Savings and loan associations	1 3	0.3
Mutual savings banks	2 3	0.6
Life insurance companies	7 2	1 8
State and local government general funds	7.3	1 9
State and local government retirement funds	4 1	1.1
Brokers and dealers	1.2	0 3
Total other	26 8	6 9

Source Board of Governors of the Federal Reserve System, *Flow of Funds.*

that the municipal bonds that are being compared with Treasury securities are the highest rated, with respect to credit risk, of the state and local issues. The premium required for lower quality issues would be much larger.[2]

A second reason why benchmark yield ratios may be lower than those actually found in the market is that the tax-exempt subsidy may be less effective than it could be. This reason will be discussed further after a review of some of the historical data on yield ratios.

Yield ratios actually observed and their effects

As shown in Chart 1 and Table 2, the yield ratio for long-term bonds was consistently much higher than the 0.55-0.60 benchmark level that would be expected using maximum marginal tax rates and adjusting for credit risk. In the mid-1970s, the yield ratio between thirty-year prime municipals and Treasury bonds generally fluctuated between 0.70 and 0 80. In 1978 and 1979, the market improved somewhat during the economic recovery

[2] An analyst is faced with the problem of what to compare tax-exempt yields against There is a range of securities to choose from, but commonly municipal yields are compared with Treasury or corporate utility yields The yield ratio will vary for each set of comparisons because of differences in credit risk, tax treatment, and other factors In this article, the relatively arbitrary judgment to use Treasury securities was chosen

It is often thought that municipal and corporate utility securities have similar credit risk This may be so for municipal power and corporate utility issues, which respond to similar energy, regulatory, and political developments, but this often does not hold for other revenue and general-obligation bonds Moreover, municipal and corporate bond yields are not strictly comparable, since corporate bonds are subject to state and local taxes whereas municipal bonds are generally exempt from the taxes of the state in which they are issued

(*Footnote 2 continued*)

An advantage of using municipal and Treasury yields is that they are both generally exempt from state and local taxes A more important advantage is that it is not necessary to adjust for short-term changes in market or risk factors affecting corporate utility yields However, since Treasury and municipal bonds differ in terms of perceived credit risk, it is necessary to compute a normal risk premium for municipal issues One way to compute this risk premium, while avoiding the problem of short-term variations in the risk premium on the utility issues, would be to use the average of corporate utility yields over a period of several years as a proxy for municipal bond yields The comparison suggests that a normal risk premium for municipal securities would be about 5 percent

and the ratio fell below 0.70. Since then, the tax-exempt market has deteriorated sharply relative to the taxable market and, in early 1982, the thirty-year yield ratio rose as high as 0.94 In January 1982, tax-exempt borrowers paid only 86 basis points less on thirty-year bonds than the U S. Treasury and only 155 basis points less on twenty-year issues

The recent rise in the long-term yield ratio occurred during a period when interest rates in general were near an all-time high. Consequently, municipal bond issuers were hit doubly hard, first by the general rise in rates and then by the relatively steeper increase in tax-exempt yields. Municipal bond yields increased 75 percent between 1979 and 1981, while Treasury bond yields rose 45 percent (Chart 2).

As a result, states and localities paid substantially more in interest expense on their new borrowings in 1981 than they did several years earlier. In 1978, for example, they issued $46 billion in long-term securities at an estimated average rate of 5 5 percent. In 1981 they issued the same amount of bonds at 10 6 percent, nearly double the 1978 rate. In dollar terms, states and localities will pay approximately $2 3 billion more in annual interest costs on the debt they issued in 1981 than on the same amount of debt they issued three years earlier Over a twenty-year period, this will cumulate to additional interest costs of $46 billion.

Roughly half of the cost increase to states and localities was the result of a general rise in rates, while the other half was caused by a sharper increase in tax-exempt bond yields, *i e*, by a deterioration in the tax-exempt market relative to the taxable market If the ratio of tax-exempt to taxable yields had been 0 60 in 1981 (5 percentage points above the adjusted benchmark ratio), the savings in annual interest costs on bonds issued in that year would have been $1 1 billion per year, or $22 billion cumulative over the approximate twenty-year life of the bonds

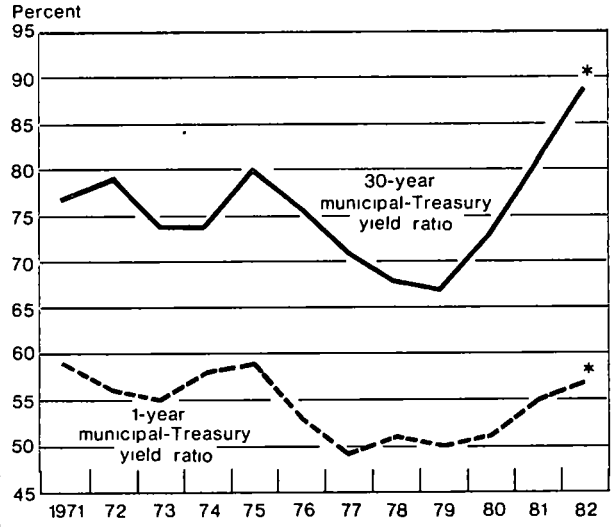
The indirect costs to the U S Treasury also rose substantially between 1978 and 1981. By not taxing the interest income on municipal securities, the U S. Treasury will lose approximately $1½ billion per year in tax revenue on those bonds issued in 1978 but $2½ billion per year on those issued in 1981. This amounts to a $50 billion cumulative revenue loss over the twenty-year life of the bonds issued in 1981 More than three quarters of the Treasury's foregone revenue on bonds issued in 1978 will accrue to the state and local borrowers in the form of lower interest costs. But, because of the increase in the yield ratio, only about one half of the implicit Federal subsidy on the 1981 issues will benefit the borrowers. The other half will accrue to investors who will receive substantially higher aftertax returns on municipal bonds purchased in 1981 than on comparable taxable issues acquired the same year

These costs continued to be exceptionally large during the first nine months of 1982, as tax-exempt rates remained high and municipal bond issuance strong Between January and September, long-term yields on municipal bonds averaged 11 6 percent while those on Treasury issues were 13.7 percent Despite these high yields, long-term borrowing by states and localities rose to $65 billion at an annual rate during the first nine months of 1982, this was 40 percent higher than the 1981 level Consequently, the implicit Federal subsidy on the 1982 issues grew to a $3½ billion annual rate, or a cumulative total of $70 billion over the estimated life of the bonds With the yield ratio rising further, the investors' share of the subsidy rose to over $2 billion annually while the states' and localities' share fell to $1 4 billion of the total

The situation is very different in the short-term market There, the yield ratio has typically fluctuated between 50 and 60 percent until a year ago, when the average level rose to the top of the range Yield ratios in the short-term market have consistently been very close to the benchmark levels, especially after adjustment for risk differentials Thus, the Federal sub-

Chart 1

Tax-exempt Yields as a Percentage of Taxable Yields for Short- and Long-term Maturities



* January-September 1982

Source Salomon Brothers, An Analytic Record of Yields and Yield Spreads

Table 2

Comparison of Yields on Treasury and Municipal Securities

By terms to maturity

	Terms to maturity (in years)																			
	Municipal yields					Treasury yields					Yield spreads (Treasury-municipal)					Yield ratios (Municipal-Treasury)				
Date	1	5	10	20	30	1	5	10	20	30	1	5	10	20	30	1	5	10	20	30
Average																				
1973	3 95	4 25	4.45	5 00	5 20	7 24	6 76	6 73	6 97	6.99	3 29	2.51	2 28	1 97	1 79	0 55	0.63	0 66	0.72	0 74
1974	4 75	4 90	5 15	5 70	5 90	8.23	7 73	7.31	7.93	7 98	3 48	2 83	2.16	2 23	2.08	0.58	0 63	0 70	0 72	0 74
1975	3.91	4 83	5 44	6 29	6 59	6 65	7.61	7 42	8 04	8 21	2.74	2.78	1 98	1 75	1.62	0 59	0 63	0 73	0 78	0.80
1976	3.12	4 15	4 82	5 69	6 02	5.92	7 20	7.53	7 86	7 94	2.80	3 05	2 71	2 19	1.92	0 53	0 58	0.64	0 72	0 76
1977	2 91	3.88	4 35	5 16	5 45	5 94	6.91	7 36	7.62	7 68	3 03	3 03	3 01	2 46	2 23	0 49	0 56	0.59	0 68	0 71
1978	4 15	4 65	4 93	5.50	5 75	8 20	8 23	8 33	8 42	8 42	4 05	3 58	3 40	2 92	2 67	0 51	0 57	0.59	0 65	0 68
1979	5 30	5 37	5 45	5 95	6.18	10 54	9 40	9 34	9 24	9.20	5 24	4.03	3 89	3.29	3 02	0 50	0 57	0 58	0 64	0 67
1980	6.14	6.40	6 84	7 82	8 15	12 07	11 43	11 38	11.29	11 23	5.93	5 03	4 54	3 47	3 08	0.51	0 56	0.60	0 69	0 73
1981	7.89	8 51	9 43	10 57	10 81	14.45	14.17	13 88	13 69	13 42	6 56	5 66	4 45	3.12	2.61	0 55	0 60	0.68	0 77	0.81
1982																				
Quarter 1	7.83	9.42	10 75	12.15	12.42	13.88	14.03	14.04	14 09	13.76	6 05	4 61	3 29	1.94	1 34	0 56	0 67	0 77	0 86	0 90
Quarter 2	7 67	9.33	10 50	11.62	11.67	13 64	13 94	13 89	13.68	13 46	5 97	4 61	3 39	2 06	1 79	0 56	0.67	0 76	0 84	0 87
Quarter 3	7.33	8.83	9 97	10.97	11.23	12.50	13 59	13.57	13 41	13.24	5 17	4 76	3 60	2 44	2 01	0.59	0.65	0 73	0 82	0 85

Source: Salomon Brothers, *An Analytic Record of Yields and Yield Spreads*

sidy on short-term maturities appears to be effective, with nearly all of it going to the states and localities rather than to the investors. In 1981, states and localities paid $1.3 billion less on their short-term borrowings than they would have if they had paid taxable yields. However, unlike long-term borrowing, the savings are relatively small. Short-term debt accounts for only 5 percent of total tax-exempt debt outstanding.

Reasons for the limited effectiveness of the subsidy in the long-term market

In the long-term market, the magnitude and volatility of the observed yield ratio are the result of a relatively small and narrow demand for tax-exempt securities in relation to the volume of state and local debt. In recent years, commercial banks, property and casualty insurance companies, and high-income individuals held 93 percent of all municipal securities outstanding. These groups of investors find tax-exempt bonds especially attractive because they can be subject to the highest income tax rates, 50 percent in the case of high-income households (70 percent prior to 1982) and 46 percent for commercial banks and property and casualty insurance companies.

In contrast, most other financial institutions, such as pension funds, life insurance companies, and thrift institutions, pay relatively low or no taxes Consequently, they find taxable securities more attractive than municipal bonds. The same is true for nonprofit organizations, foreign investors, and many retired people, who also pay relatively little or no U.S. taxes. Nonfinancial corporations may find the tax exemption attractive, but they have little surplus funds to invest as they are generally net borrowers rather than net lenders. Consequently, the tax exemption—which is the reason why municipal yields are expected to be below taxable yields—is of little or no value to large segments of the investment and business community.

If the only purchasers of long-term state and local bonds were individuals and institutions in the maximum marginal tax brackets, then the yield ratio of tax-exempt to taxable issues would be at or near the adjusted benchmark of 0 60 currently and 0 55 in prior years However, when states and localities find themselves having to issue large amounts of new debt, regardless of cost considerations, then they may have to offer the debt at sufficiently high yields to attract investors with lower marginal tax rates These higher yields are generally available to all investors—even those in top tax brackets who in theory might be willing to accept lower returns. Thus, part of the subsidy of Federal tax exemptions goes to these high-income investors.

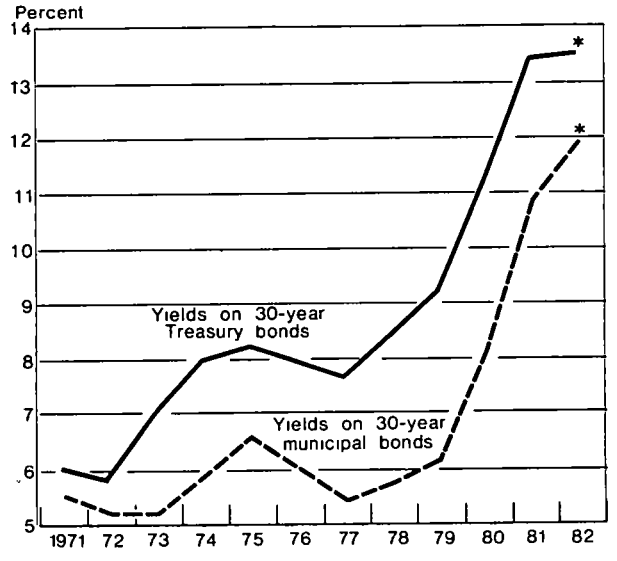
While demand for municipal bonds by individuals and institutions in the top tax brackets has lagged, the volume of tax-exempt issues has remained sizable and even increased, especially in 1982 (Chart 3) Long-term borrowing by states and localities roughly doubled from $24 billion annually in 1972-75 to $46 billion in 1978-81 Recently, it has risen sharply to a $65 billion annual rate in the first three quarters of 1982. Against that background, yield ratios for long-term debt have remained well above the benchmark range of 0 55-0.60.

The growth of the total volume of new issues masks an interesting and important change in the composition. General-obligation bonds which have traditionally been used to help fund capital improvements and, to a lesser extent, operations demonstrated little growth between 1972 and 1981. In contrast, issuance of tax-exempt revenue bonds quadrupled during the same period. These bonds fund quasi-private activities such as hospital construction, power generation, housing construction, and industrial development (Table 3). The volume of new issues of revenue bonds is less sensitive than those of general obligation to changes in interest rates, since private developers and other users of tax-exempt funds find that the umbrella of tax exemption will always make it possible to finance at rates that are attractive, compared with those in the taxable market. Also, unlike general-obligation securities, revenue bonds are normally not subject to voter approval. Thus, there is relatively little constraint on their expansion.

While the supply of tax-exempt securities has expanded rapidly, several factors on the demand side have also contributed to a high yield ratio. To begin with, the maximum corporate tax rate was trimmed from 48 to 46 percent in 1978 and the maximum

Chart 2

Long-term Tax-exempt and Taxable Yields

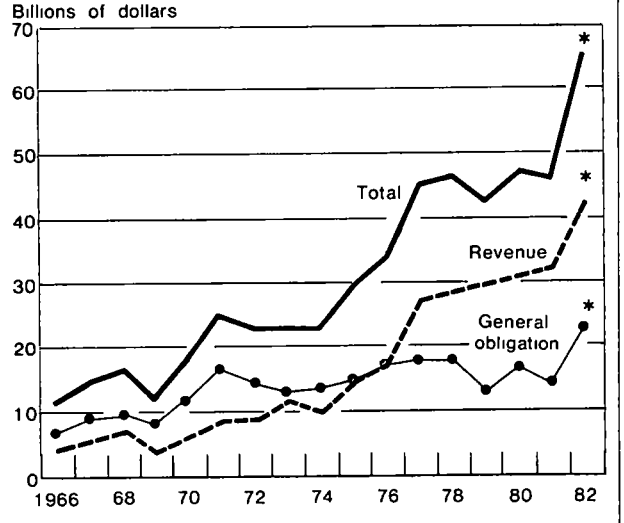


*January-September 1982

Source Salomon Brothers, An Analytic Record of Yields and Yield Spreads

Chart 3

New Long-term Municipal Borrowing by Type of Security



* January-September 1982, at an annual rate

Source The Bond Buyer

Table 3

Municipal Bond Sales by Use of Proceeds, 1981

Level in billions of dollars, share in percent

Activity	Level	Share
Social welfare	**12.06**	**25.9**
Public housing	(5 93)	(12 7)
Hospital and other	(6 13)	(13.2)
Utilities	**10.03**	**21.6**
Electric and gas	(6.25)	(13 4)
Water and sewer	(2 85)	(6 1)
Other	(0 93)	(2 0)
Industrial aid	**7.65**	**16.4**
Pollution control	(4 32)	(9 3)
Other	(3 33)	(7 2)
Education	**4.54**	**9.8**
Elementary and secondary	(2 18)	(4 7)
Higher education and other	(2 36)	(5.1)
Transportation	**3.45**	**7.4**
Ports and airports	(1 68)	(3 6)
Roads, bridges, and other	(1 77)	(3 8)
Recreation, public services, and miscellaneous	**1.57**	**3.4**
Unclassified	**7.22**	**15.5**
Total	46 52	100 00

Source Public Securities Association.

individual tax rate was cut from 70 to 50 percent in 1981. As discussed earlier, these changes raised the yield ratio at which tax-exempt and taxable securities yield equivalent aftertax returns. Other provisions of the Economic Recovery Act of 1981 lowered the effective tax rates for individual and institutional investors. For example, easier leasing requirements, larger depreciation allowances, faster development cost write-offs, and larger investment tax credits helped lower effective tax rates for many institutions. (Even before the expanded leasing provisions of the 1981 tax act, commercial banks had begun to look more toward leasing arrangements as a means of sheltering income from taxes.) The expansion of individual retirement accounts and the offering of all savers certificates expanded the scope of alternative tax shelters for households with high tax rates.

Another factor cited in the recent rise in the yield ratio is that property and casualty insurance companies have had to reduce their purchases of tax-exempt securities in response to a sharp increase in their underwriting losses. Finally, some individual and institutional investors in high tax brackets have withdrawn altogether from long-term markets (taxable and tax exempt) because of the volatility of long-term yields

The effect on recent yield ratios of the imbalance between the relatively large supply of municipals and relatively weak demand by high-income investors may have been exacerbated by changes in perceived credit risk. Cutbacks in Federal Government grants to state and local governments and the effect of the recession on state and local revenues and transfer payments have caused a reduction of the accumulated surpluses of state governments and a deterioration in the fiscal status of local governments. Tax-reduction movements, such as those in California and Wisconsin, may also have been an important factor in the changed state and local fiscal outlook. Against this background, it is clearly possible that the risk premium on even high-grade municipals may have increased. On the other hand, the apparent success of New York City in working its way out of its well-publicized fiscal crisis may have been a factor working in the opposite direction.

Even with an allowance for some increase in risk premiums, it still appears that, during the past few years, the demand for long-term tax-exempt securities by individuals and institutions in the maximum tax brackets has not kept pace with the increase in the supply of new state and local issues. This has meant that, to finance their debt, states and localities increasingly have been offering yields that would attract investors who are in lower marginal tax brackets.

The short-term market

The situation in the short-term tax-exempt market is very different. There, tax-exempt yields are appropriately low compared with taxable yields. Of the $390 billion in outstanding tax-exempt securities at the end of 1981, only $20 billion consisted of short-term securities, with an average maturity of about six months. There is an additional $15 billion, approximately, of long-term securities that have a remaining maturity of one year or less; however, most of these are retained by investors and not traded in the market. In contrast, the maturity structure of taxable securities is heavily weighted toward the short term (Chart 4). For example, Treasury bills held by the public at the end of 1981 totaled $245 billion, while Treasury bonds totaled $100 billion.

While the availability is limited, the demand for short-term issues is strong among commercial banks and tax-exempt money market funds. Commercial banks exhibit a strong preference for shorter term maturities, as indicated by the maturity structure of

their taxable holdings. Of the $110 billion of government securities held by commercial banks at the end of 1981, an estimated 92 percent had a remaining maturity of five years or less and 52 percent had a remaining maturity of one year or less. In addition, over the last several years, the tax-exempt money market funds have bid actively for an increasing share of the short-term issues. Currently, their assets total $11 billion, equivalent to over one half of total short-term tax-exempt securities outstanding.

Possible solutions

The preceding discussion suggests that the Federal tax exemption of state and local debt is not working as well as it could, at least from the point of view of the governments involved. Although tax-exempt yields have declined somewhat in the past few months, as have yields in other credit markets, the yield ratio remains well above the adjusted benchmark level of 0.60. A considerable part of the Federal tax-exemption subsidy continues to elude the grasp of state and local issuers and falls to investors in high marginal tax brackets. This section outlines some alternatives that would make the Federal subsidy on state and local debt more effective while, at the same time, lowering the revenue loss to the Federal Government.

One possibility would be to attempt to broaden the market for state and local debt. Since the potential demand for long-term tax-exempt bonds by investors in the highest tax brackets is limited, states and localities could be encouraged to issue taxable securities in exchange for a direct subsidy from the U.S. Treasury. Another alternative could be to reduce the supply of long-term tax-exempt securities by shifting some borrowings from the long to the short end of the market, where currently the supply is small relative to potential demand. Finally, supply could be limited by some restrictions (either voluntary or Federally mandated) on the volume of new issues of tax-exempt debt for low-priority projects.

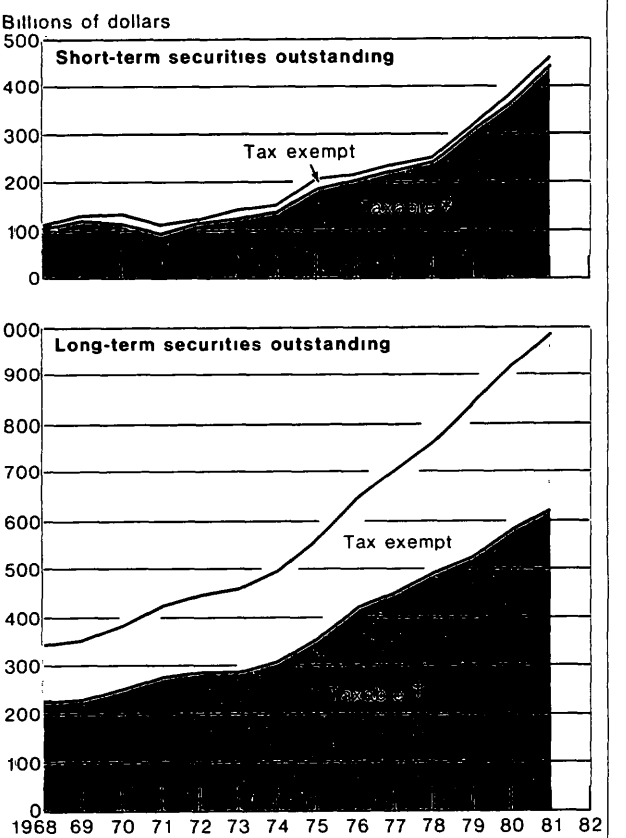
Taxable bond option

Since state and local borrowers receive the benefit of only a portion of the tax revenue foregone by the U.S. Treasury, an alternative method of subsidizing their borrowings might be appropriate. One option would be for the borrower to issue only taxable bonds and for the U.S. Treasury to return to the states and localities part or all of the additional Federal taxes collected on the interest income. This way, the net cost to the Federal, state, and local governments would be less than under the current system, since investors would no longer be receiving part of the foregone revenue. Complete elimination of Federal tax exemption by new Federal legislation might raise constitutional questions about the separation of powers between Federal and state levels, and it might cause opposition from state and local officials jealous of their independence. To circumvent these obstacles, a taxable bond option has been widely proposed as a means of achieving the same objective but on a voluntary basis.

With a taxable bond option, the state or locality would have the choice of issuing a tax-exempt security, as at present, or a taxable one. If it issued a taxable bond, the U.S. Treasury would reimburse the state and

Chart 4

Supply of Tax-exempt and Taxable Securities



*Short-term Treasury securities and open market paper held by domestic private sector

†Long-term Treasury securities and corporate bonds held by domestic private sector

Source Board of Governors of the Federal Reserve System

locality for the higher interest cost with a direct subsidy equivalent to some fixed proportion, say 40 percent, of the taxable yield. Therefore, if the ratio of tax-exempt yields to taxable yields rose above 60 percent, it would pay the borrowing state or locality to issue taxable securities; if it dropped below 60 percent, it would be more advantageous for the borrower to issue tax-exempt bonds.

The maximum interest reimbursement rate that would leave the U.S. Treasury no worse and no better off than before would be 40 percent, according to our estimates. This is the midpoint of the weighted averages of maximum marginal tax rates for holders of tax-exempt and taxable securities.[3] If the rate were set higher than 40 percent, the U.S. Treasury would pay more in interest subsidies to states and localities than it would collect in additional revenues from investors. If it were set less than 40 percent, the Treasury would recoup some of its current revenue losses.

Similarly, under current market conditions, the minimum reimbursement rate that would leave state and local borrowers no better and no worse off than before would be roughly 20 percent. This is based on recent yield ratios averaging 80 percent or somewhat higher on twenty-year bonds. If the rate were set lower than 20 percent, state and local borrowers would prefer to issue tax-exempt bonds instead. If it were set higher than 20 percent, the subsidy payment would more than offset any increase in borrowing costs resulting from issuing taxable instead of tax-exempt securities. Since the yield ratio declines as the maturity shortens, a 20 percent reimbursement rate would not be adequate to induce borrowers to replace short- and medium-term tax-exempt securities with taxable ones. However, except for money market notes and serial bonds, most tax-exempt securities are long-term bonds with maturities of twenty to thirty years.

Therefore, there is a band of possible interest reimbursement rates ranging from 20 to 40 percent under present conditions. Within this range, the U.S. Treasury and the bond issuer would share any net benefit. At 30 percent, for example, the U.S. Treasury and the state or local borrower would split the benefit equally

Under current market conditions, a taxable bond option could result in substantially lower costs for all levels of government. According to our estimates, the Federal, state, and local governments combined would gain $2.2 billion per year in net benefits or a cumulative amount of $44 billion over the life of the securities This is based on data from the first nine months of 1982. During that time, twenty-year taxable yields averaged 13.7 percent and tax-exempt bond issuance averaged $65 billion, at annual rates.

The taxable bond option was proposed in 1977 and 1978 by the Carter administration. But the proposal was shelved, primarily because of opposition by state and local governments. It is not clear that these governments would still be opposed. First, in 1977 and 1978 the long-term yield ratio was declining (Table 2) to the 0.60-0.65 range. It has now been above 0.80 for over a year. Thus, the option would clearly benefit state and local governments currently.

A second objection to the earlier proposals was that they included provisions that would have made certain types of revenue bonds taxable Although a Federal subsidy would have been provided in the place of tax exemption, there would have been no option on these bonds. This was opposed by state and local governments at the time. But since then the Congress has passed some restrictions on new issues of certain types of revenue bonds. Therefore, today taxable bonds with a subsidy may be an attractive alternative to issuers of revenue bonds, compared with a further tightening of restrictions that would include no subsidy.

Finally, previous proposals were thought to contain a risk that at some point the Congress would cut off the direct subsidy after a state or local government had issued a taxable bond. These governments were not anxious to give up the indirect subsidy of tax exemption, which they had automatically, for a direct subsidy of comparable size that was subject to the ups and downs of the Federal budget process. Although it was not discussed at the time, the Congress could insulate the Federal Government's direct subsidy payments from the annual appropriations process. For example, at the time the taxable state and local bond

[3] Although it is not possible to determine with certainty what the break-even point for the U S Treasury would actually be, some boundary estimates can be made In the simple case, if all municipal securities that became taxable were purchased by current holders of tax-exempt securities, the break-even point would be 45 percent On the other hand, if they were distributed proportionately among current holders of Treasury and corporate issues, the break-even point would be 35 percent However, the latter assumes that all current owners of tax-exempt securities would shift to other tax shelters, such as real estate and leasing arrangements This is unlikely to be the case A more realistic assumption would be that some current holders of tax-exempt securities would shift to other tax shelters but that the remainder would invest in taxable securities Thus, it seems most likely that the break-even point would fall between 35 and 45 percent

The shift to other tax shelters might cause an increase in taxable and a decline in tax-exempt yields As taxable yields rose, the Treasury's borrowing costs would rise, but its revenues would also increase as taxable interest income rose on private as well as Government securities Moreover, as yields on tax shelters fell, foregone revenue by the Treasury would decline It is possible that all of the municipal securities that became taxable would be purchased by tax-exempt organizations, such as pension funds or nonprofit organizations However, so long as their share of investable funds did not increase, it would have little effect on net Treasury revenues, since they would merely be shifting from one type of taxable security to another

is issued, the Treasury could issue some form of security to the state or local government that would carry a coupon equal to the subsidy.

Shift to short-term borrowing

The significantly lower yield ratio for short-term securities suggests that state and local governments could save substantial interest expense by shifting their borrowings toward the short end of the maturity spectrum This would have the additional advantage of reducing supply and lowering yields in the long end of the market. Although there are some risks inherent in such a strategy, they could be limited through maintenance of contingency reserves and use of the futures market

An approximation of the interest savings that such a shift would produce can be obtained by examining recent borrowing and interest rate figures. In 1981, state and local governments issued $46 billion of long-term securities at an estimated average rate of 10.6 percent and a maturity of twenty years. Consequently, these borrowers will pay nearly $5 billion per year in interest expense over the twenty-year life of the bonds. If they had been able to issue these same securities at the one-year rate of 7.9 percent, they would have saved $1¼ billion in interest expense during the first year. It would be neither feasible nor desirable to shift all long-term borrowing to the short-term; however, if a reasonable amount were shifted, a significant reduction of relative long-term yields might be achieved as well.

A shift to short-term borrowing would pose some risks for states and localities. One risk would be that the borrower might have difficulty rolling over the short-term debt, especially if it came due during a period of extreme tightness in the financial market or uneasiness over the borrower's political or economic situation. The rollover risk could be avoided by issuing bonds with a long-term maturity but with a variable coupon rate. The coupon rate could be tied to a short-term money market rate and adjusted periodically, similar to what is done with adjustable-rate mortgages. In this case, state and local issuers could probably expect to obtain part of the yield advantage on short-term municipal securities.

The use of variable-rate securities would still leave the borrower exposed to the risk of large changes in future interest costs. This could be handled, at least partially, in several ways. The simplest would be for the borrower to establish an interest-reserve fund for such contingencies. Alternatively, the borrower could use the futures market to hedge against near-term changes in interest rates, although the futures market would not allow a hedge further out than several years.

Restrictions on use of tax exemption

A third alternative would be to restrict tax-exempt financing to specific purposes or amounts. This would produce the favorable effects of limiting the supply of outstanding issues and lowering the long-term ratio of tax-exempt to taxable yields. It would also reduce borrowing costs on qualifying projects and restrain the growth of Federal revenue losses.

Currently, most revenue bonds involve little or no liability on the part of the general public, in terms of either general revenue being pledged or public property being mortgaged to guarantee debt-service payments. At the same time, the tax-exempt benefit is usually passed on to the user of the fund rather than retained by the issuer of the bond. Since states and localities normally incur little if any risk with revenue bonds, there is a tendency for local officials and the general public to view tax-exempt revenue bonds with indifference. It is often thought that revenue bonds allow the user of the funds to benefit at the expense of the U.S. Treasury.

Past tendencies to use tax-exempt financing to meet social needs have contributed to the present poor market conditions. Fifty years ago, tax-exempt bonds were used mainly to finance the traditional functions of state and local governments, such as schools, streets, and sewers. Beginning in the 1930s, the Congress allowed states to set up "authorities" and issue tax-exempt bonds to finance power systems and housing complexes. These are activities that were largely in the private sector previously but received public priority during the great depression. This concept was expanded in the 1950s and 1960s to include a wide range of economic activities, such as industrial development, hospital construction, pollution control, mortgage financing, and higher education. As a consequence, state and local debt multiplied more than tenfold from roughly $30 billion in the early 1950s to $390 billion at the end of 1981. Moreover, the share of revenue bonds rose from one fifth to two thirds of tax-exempt debt during the same period.

The rapidly rising cost of financing state and local debt has brought into question the appropriateness of continuing these policies. Many of these activities no longer have the same high public priority that they once did. Moreover, many of the benefits accrue to private individuals or select groups. Since this large volume of debt increases borrowing costs on general-purpose and high-priority debt, it may be in the mutual interest of the states and localities to restrict future supplies of lower priority revenue bonds. It might also be less costly for the Federal Government to subsidize high-priority projects with targeted assistance rather than with general tax exemption.

One possibility would be to reduce or to eliminate tax exemption for projects that have low social priority or that benefit mainly the private sector. This approach was followed when the Congress restricted the use of tax exemption for large industrial revenue bonds in 1968 and single-family mortgage bonds in 1980. Use of tax exemption for small industrial development bonds has also been widely criticized in recent years, since the benefits accrue largely to the private sector.

Another possibility would be to put dollar limits on the amount of tax-exempt bonds that any state or locality could issue. These caps could be based on population, economic need, or some other criteria. As an example, 1981 per-capita figures could be used as a starting point. Long-term borrowing by state and local governments in the country as a whole was $46 billion or approximately $195 per capita in 1981, while the total of long-term bonds outstanding at the end of the year was $370 billion or about $1,575 per person. If a national cap were established and then allocated on a state-by-state basis, each state could allocate the amount of tax-exempt bonds allowable according to self-established priorities. For example, New York might choose to use a relatively large part of its share for mass transportation and public housing, while Arizona might prefer to allocate a larger portion for water and power development.

Finally, it might be desirable to eliminate tax exemption for revenue bonds altogether but to retain it for general-obligation bonds. Currently, general-obligation bonds account for only one third of new municipal bond issues. However, this probably understates the amount of general-purpose borrowing. In recent years, there has been a tendency to replace general-obligation with revenue bonds. Often this is done to bypass the referendum process, which is usually required before general-obligation securities can be issued; it has also been done to maintain a state's or a locality's credit rating by limiting the amount of its general-obligation debt. In some cases, revenue bonds are even used to finance facilities that are clearly general purpose in nature, such as public school or municipal buildings. For example, after construction, the facilities may be owned by a separate authority and leased back to the school board of a city agency, with the lease payments pledged for making debt-service payments on the bonds.

At least some of the activities currently financed by revenue bonds would revert to general-obligation financing if tax exemption were eliminated for revenue bonds. Therefore, limiting tax exemption to general-obligation debt would still provide states and localities with adequate latitude to finance general-purpose activities. Moreover, the Federal Government could continue to subsidize high-priority, revenue-generating projects with direct aid rather than tax exemption.

Conclusion

The Federal subsidy to state and local government debt financing is much less effective than it could be. State and local debt-servicing costs and Federal revenue losses under the current structure of Federal tax exemption are large and increasing. More and more of the Federal tax-exemption subsidy is being gathered in by the purchasers of long-term municipal securities rather than the issuers.

The analysis in this article has attempted to highlight some of the important reasons for the limited effectiveness of the current subsidy. The supply of long-term tax-exempt securities is too large relative to the demand by those institutions and individuals that are in the maximum tax brackets. To market their debt, states and localities have to offer higher rates that then make it possible to attract funds from individuals and institutions in lower marginal tax brackets. Bonds issued in 1981 alone will cost state and local governments $1.1 billion more per year (about $22 billion cumulatively) than they would have cost if the ratio of tax-exempt to taxable yields had not been inflated by a combination of heavy supply and weak demand by high-tax-bracket investors. A considerable part of this $1.1 billion represents an unnecessary revenue loss to the Federal Government. In 1982, the situation has deteriorated even further. States and localities have issued much more long-term debt than ever before and changes in the tax laws have reduced marginal tax rates for practically all investors. Thus, the ratio of tax-exempt to taxable yields has risen to new heights.

If a significant part of the problem in the long-term tax-exempt market is an overload of new issues relative to the demand by investors in maximum tax brackets, then alternatives that would allow the market to shed some of that load would appear to be worth considering. Some of the load could be put onto the long-term taxable market through a taxable bond-direct subsidy option. Some could be put onto the short-term tax-exempt market, where yield ratios are now low. Finally, voluntary or Federally mandated restrictions on tax-exempt revenue bonds for low-priority projects could contribute to a better balance in the overall tax-exempt market as well.

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