NBER WORKING PAPERS SERIES

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Working Paper No. 3835

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
September 1991

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ABSTRACT

We argue that the tax-exempt status of municipal bonds provides little or no subsidy to capital investment by communities. Instead, the tax exemption simply provides arbitrage opportunities to high and low tax bracket individuals while leaving individuals in intermediate tax brackets essentially unaffected. We also argue that the revenue cost of the tax exemption is much less than traditionally thought due to the portfolio rebalancing that would occur if the tax exemption were eliminated. Finally, we note that the only way to prevent all municipal arbitrage possibilities would be to pass through municipal interest income and payments to residents for tax purposes.

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Do Tax–Exempt Bonds Really Subsidize Municipal Capital?

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1. Introduction

Many writers have claimed in the past that the tax–exempt status of interest on municipal bonds provides a subsidy to municipal expenditures, and more particularly to municipal investment. For example, Musgrave and Musgrave(1989, p. 562) claim that "[w]ith state and local borrowing used for capital expenditure, such support is equivalent to a matching grant for capital outlays." Similarly, Pechman(1987, pp. 125–6) claims that taxing municipal bond interest income "would discourage borrowing by some localities and thereby reduce capital expenditures for public purposes." The objective of this note is to argue that the theory underlying such claims is highly deficient. Municipal investment is subsidized by the tax–exempt status of municipal bonds only if increasing capital investment by an extra dollar enables a community to borrow more, and thereby gain more from its right to borrow at this low rate. If the community could borrow as much as it wants anyway, then no subsidy exists. But just as wealthy investors in municipal bonds buy tax–exempt bonds until risk–bearing costs make further investment in them unattractive, low–tax–bracket individuals can engage in the reverse arbitrage by borrowing through their municipalities at the tax–exempt rate until nontax costs make further borrowing unattractive.[1] If these nontax costs, rather than the amount of capital investment undertaken by the municipality, limit the amount of municipal borrowing then there is no subsidy to capital investment. We also argue, however, that the revenue costs of the tax–exempt status of municipal bonds have been substantially overestimated in the past.

Traditional View of the Role of Municipal Bonds

What then underlies the claims that the tax–exempt status of municipal bonds subsidizes municipal capital expenditures? The argument goes as follows: When municipal

We would like to thank the editors and a referee for comments on a previous draft.

bonds are tax-exempt, the interest rate on these bonds is reduced, allowing municipalities to borrow at this lower interest rate when they raise funds for capital projects. If municipal bonds were instead made taxable, municipalities would have to pay the higher taxable interest rate when they raise the same funds. If r denotes the taxable interest rate and r_m denotes the tax-exempt interest rate, then the subsidy to municipal capital expenditures due to the tax exempt status of municipal bonds is measured by $r - r_m$ times the amount of funds the community needs to raise to finance capital projects. This amount, $r - r_m$, would be received each year the bonds are outstanding.[2]

The same intuition underlies the Treasury's calculation of the revenue cost of the tax-exempt status of municipal bonds. As noted in Toder and Neubig(1985), the Treasury's calculations of the revenue cost assumes that if municipal bonds were made taxable, municipal borrowing would remain unchanged, and those who previously purchased the tax-exempt bonds would now purchase the taxable bonds. If all those who had purchased the tax-exempt bonds were in the tax bracket t^* such that $r(1 - t^*) = r_m$, then the calculated revenue cost of the tax-exempt status of municipal bonds is simply $rt^* = r - r_m$ times the amount of municipal bonds issued. This just equals the size of the subsidy to municipal capital expenditures, calculated under the above assumptions. If municipal bonds were in part purchased by investors facing tax rates higher than t^*, then the revenue cost would exceed the subsidy to municipal capital expenditures, making this approach to subsidizing municipal capital expenditures less "efficient." This logic is implicit in virtually all papers in the area, most recently Feenberg and Poterba(this issue).

2. Problems with the Traditional View

Ignores availability of tax as well as debt financing

What is wrong with this line of reasoning? To begin with, would municipalities continue to borrow to finance capital expenditures if municipal bonds were made taxable? Rather than borrowing initially to finance the capital expenditures and then raising municipal taxes in each future period to pay the interest charges on the municipal debt, a community could instead raise taxes initially to finance the capital expenditures. Which alternative is more

attractive? Assume if taxes are used initially to finance a capital project that municipal residents would finance these one–time taxes by withdrawing funds from their savings. If these savings had been in taxable bonds/bank deposits, then these savings had been earning a net–of–tax rate of return of $r(1-t)$, where t is the marginal tax rate faced by the typical (median) resident.[3] If taxes were used to finance the project, residents would therefore find their income reduced in each future period by $r(1-t)$ times the cost of the capital project. But if the project had instead been financed entirely with debt, then future taxes would be r times the cost of the capital project. As long as $t > 0$, then residents would prefer to finance the project with taxes rather than with debt.[4] Therefore, the cost of funds for a municipal capital project is $r(1-t)$ rather than r. When municipal bonds are tax exempt, municipalities can finance capital projects either with taxes where the foregone rate of return on savings is $r(1-t)$ or with municipal bonds where the interest rate is r_m. They should prefer whichever alternative is cheaper. If this were the only problem, then we would measure the size of the subsidy to municipal investment from making municipal bonds tax exempt by the reduction in the cost of funds from $r(1-t)$ to $\min(r(1-t), r_m)$. This contrasts with the traditional view that the cost of funds would be reduced from r to r_m.

Given this revised story about municipal behavior, what is the revenue cost of making municipal bonds tax–exempt? Assume for simplicity that when municipal bonds are tax exempt, all municipal capital projects are financed with debt. When the tax–exempt status of municipal bonds is eliminated, the above reasoning suggests that all capital projects should instead be tax financed. If so, then municipal bonds would disappear. If municipal capital investment remains unchanged, then residents reduce their savings by the same amount. Financial markets would still balance if those who previously purchased the municipal bonds now buy the securities no longer purchased by municipal residents. Would the traditional revenue estimate still be right if these residents had saved entirely in taxable bonds? In this case, eliminating the tax exempt status of municipal bonds causes taxable bonds to shift from the portfolios of residents to the portfolios of those who previously purchased municipal bonds. Tax revenue increases only to the degree to which the typical purchaser of a municipal bond is in a higher tax bracket than the typical

resident of a community undertaking a capital investment project. Since those now holding municipal bonds are typically the very wealthy, revenue would still be forecast to rise, but by less than in the traditional view since the traditional view ignores the taxes previously paid on the taxable bonds by municipal residents.

Ignores portfolio rebalancing in revenue estimation

This revised view still overestimates the revenue gain from eliminating the tax-exempt status of municipal bonds for at least two reasons. First, the typical resident will finance the capital project in more diverse ways than just by reducing investments in taxable bonds. For example, residents may reduce their savings in less heavily taxed financial assets, in which case shifting the ownership of these assets to those who are in higher tax brackets raises less revenue.

Second, even if residents did finance capital spending entirely by reducing their purchases of taxable bonds, those who previously purchased the municipal bonds will not likely shift to investing in taxable bonds. Instead there should be a broader rebalancing of portfolios, so that the most lightly taxed assets continue to be owned primarily by those in the highest tax brackets, and conversely. For example, those who previously owned municipal bonds could invest instead in corporate equity, real property, or other lightly taxed assets. These assets would be purchased from those in somewhat lower tax brackets. At the end of this chain, the lowest tax bracket investors (e.g. pension funds) would purchase the taxable bonds no longer purchased by municipal residents. On net, this rearrangement of portfolios is driven by an attempt to minimize tax liabilities, and results in a smaller increase in tax revenue than was forecasted previously. Therefore, even though the tax-exempt status of municipal bonds provides less of a subsidy to municipal capital than is traditionally thought, the revenue cost of this tax-exempt status is also less than traditionally thought.

Ignores risk costs of financial arbitrage

Problems with the traditional view do not end here. So far, the tax-exempt status of municipal bonds still reduces the cost of municipal expenditures from $r(1-t)$ to $\min(r(1-$

$t), r_m$). But this presumes that there are no other cost differences between tax and debt finance of municipal investment. But when communities borrow, they always face the risk that unexpected changes in their tax revenue or in interest rates may make it difficult for them to repay the debt. Default on existing debt can be very costly, as shown for example by Leeds(1983) who documented the reorganization costs faced by New York City during its fiscal crisis in 1975. In addition, when lenders recognize ex ante the possibility of default, they will monitor the activity of the municipality more closely, charging implicitly for the costs of this monitoring by raising the interest rate r_m at which they are willing to lend to the municipality. The municipality may be able to reassure lenders by purchasing insurance which guarantees repayment of the debt,[5] but the cost of this insurance rises the more borrowing the municipality does. Even if default never occurred, borrowing heavily puts municipal residents in a highly leveraged position which has its own risk–bearing costs. Just as we normally presume that wealthy investors in municipal bonds purchase enough of these bonds so that at the margin they are indifferent between purchasing yet more vs. investing instead in other assets (or borrowing yet more), it is equally natural to presume that municipalities issue municipal bonds until their residents are indifferent between issuing yet more bonds and financing capital expenditures instead through taxes. But what if the costs of municipal debt have risen to the point that the community is indifferent between further issues of debt and increased municipal taxes? Then the marginal cost of funds for municipal expenditures equals $r(1-t)$, which also equals r_m plus the extra costs at the margin of more municipal debt, whether these extra costs are due to extra risk–bearing costs, extra monitoring costs which are charged to the borrower, or a higher probability of paying the costs brought on by default. But if the marginal cost of funds for municipal investment equals $r(1-t)$ even when municipal bonds are tax-exempt, then there is *no* resulting subsidy to municipal investment, since as argued above the cost of funds is also $r(1-t)$ when municipal bonds are taxable.

3. A Formal Model of Municipal Borrowing

In order to make these arguments more formally, consider a simple two–period economy, in which residents consume C_i in period i, and benefit from municipal investment K

undertaken in the first period. Their utility function can be expressed by $U(C_1, C_2, K)$. Residents receive exogenous income of Y_i and pay lump-sum taxes to the municipality of T_i in each period i. In the first period, their income can be consumed, saved, or paid in taxes to the community. If savings are denoted by S, then budget balance in the first period implies that $Y_1 = C_1 + S + T_1$. If residents earn some net-of-tax rate of return ρ on their savings, then budget balance in the second period implies that $Y_2 + S(1+\rho) = C_2 + T_2$. If for simplicity the only two assets available to savers are municipal bonds and U.S. government bonds, and if the typical (median) tax bracket of residents is t, then $\rho = \max(r(1-t), r_m)$.

The community in the first period invests K, financing it through some combination of taxes and debt. If T_1 represents taxes in the first period and D measures the size of the debt issue, then the community's budget balance in the first period implies that $K = T_1 + D$. However, most states impose the constraint on communities that debt can be issued only to finance capital expenditures, so that $D \leq K$.[6] In the second period, the community raises taxes to repay the debt. The expected rate of return investors require on this debt, net of any costs they face, is equal to r_m. However, we also assume that the community ex ante pays additional expected costs $c(D/Y_2)$ per dollar of debt issued, where $c(0) = 0$, $c' > 0$, and $c'' > 0$. This function captures implicitly any costs of risk-bearing, expected costs of default, or monitoring costs (paid by the community through a higher coupon), all of which should increase as D rises relative to the income level of the community.[7] Given these costs, the community's budget balance in the second period implies that $T_2 = D(1 + r_m + c(D/Y_2))$.

If the community chooses K and D so as to maximize the utility of the typical resident, where T_1 and T_2 follow from the budget constraints in each period, what should it do? If we let λ represent the Lagrangian on the constraint that $K \geq D$, and make use of the condition characterizing the individual's optimal savings, then the first-order condition characterizing the optimal policy can be expressed by:

$$\frac{\partial U}{\partial C_1} = \frac{\partial U}{\partial K} + \lambda, \quad \text{where} \tag{1}$$

$$\lambda = \max\left(\rho - r_m - c - \left(\frac{D}{Y_2}\right)c', 0\right)\frac{\partial U}{\partial C_2}. \tag{2}$$

As is seen in equation (1), municipal investment is subsidized only to the degree to which $\lambda > 0$. In interpreting λ, consider first the situation in which $c = 0$ always. Since $\rho = \max(r_m, r(1-t))$, we find that $\lambda = \max(r(1-t) - r_m, 0)$. Therefore, $\lambda > 0$ only in communities in which $r(1-t) > r_m$. Since, by definition, $r_m = r(1-t^*)$, we find that municipal investment is subsidized only in communities in which $t < t^*$, and the size of the subsidy is proportional to $r(1-t) - r_m$, rather than to $r - r_m$ as presumed in the traditional view. Here, K is subsidized because investing a dollar more allows the community to issue a dollar more municipal bonds, where the gain from issuing a dollar more bonds is proportional to $r(1-t) - r_m$.

When the function c can differ from zero, then the size of the subsidy is reduced or eliminated even in these communities. If communities stop borrowing because the value of c has risen to the point that $r(1-t) = r_m + c + (D/Y_2)c'$, rather than because $D = K$, then $\lambda = 0$ and there is no subsidy to municipal investment. Even if borrowing continues until the constraint $D \leq K$ is binding, the size of the subsidy to municipal investment is now proportional to $r(1-t) - r_m - c - (D/Y_2)c'$, rather than to $r - r_m$.

We therefore find that the tax–exempt status of municipal bonds provides a subsidy to municipal investment only to the degree to which the constraint $D \leq K$ is binding. But this constraint, when it exists, comes from state rather than from Federal legislation.[8] But why should states impose restrictions on the amount of debt municipalities can issue, thereby limiting their ability to take advantage of the tax–exempt status of municipal bonds? One possible reason is offered by Epple and Spatt(1986) who argue that states hope to create a reputation for debt enforcement in order to reduce the cost of borrowing for all communities in the state. However, that reputation is only credible if communities within the state rarely default. A default by one community produces a negative externality on other communities in the state by increasing the perceived likelihood of default by these other communities. One way a state can correct for such externalities is to impose a limitation on municipal borrowing, e.g. by requiring that borrowing be done only to finance capital expenditures. Since the state as a whole faces no Federal constraints on municipal debt issues, however, the optimal constraints would imply that the state is indifferent at the margin to new debt issues. From the state's perspective, therefore, municipal investment is not subsidized

by the tax-exempt status of municipal bonds even if each community individually would prefer to issue more debt than the state allows. As a result, if municipalities respond to a binding constraint that $D \leq K$ by investing more, the State would want to offset this distortion to municipal investment incentives by reducing any subsidy it provides to municipal investment. These subsidies are often provided to internalize benefit spillovers across communities, so reducing them is straight-forward.

The above story must be changed when residents are renters rather than owners. In aggregate, according to the *Statistical Abstract of the U.S., 1990*, 36% of occupied housing units (occupied primarily by poorer households) are rented. Renters are affected by how municipal investments are financed only to the degree to which their rents are affected. But do their rents depend on whether debt issues or taxes are used to finance municipal investments? Rents ultimately depend on the supply and demand for housing. In the short run, the supply of housing is relatively fixed, so that rents depend only on demand. Extra municipal investment can make the community more attractive, so increase demand and therefore equilibrium rents. But the method of financing this investment does not affect demand. Will it eventually affect supply? When comparing current property taxes with taxes in future periods to repay municipal debt, apartment owners will compare the two using their own net-of-tax discount rate. Since landowners are normally in high tax brackets, given the favorable tax treatment of apartment buildings, their discount rate will normally equal r_m. As a result, they will be indifferent to the form of finance. Therefore, even in the long run, rents will be unaffected by the form of municipal finance. If the tax-exempt status of municipal bonds were eliminated and communities shifted to using only tax finance, then equilibrium rents remain unchanged.[9] Therefore, renters gain nothing from the tax-exempt status of municipal bonds, not even arbitrage profits from the municipality's ability to borrow at the tax-exempt rate. In particular, municipal investment is not subsidized in communities in which the median voter is a renter, regardless of the tax rate t in these communities.

While the analysis above must be altered when there are renters, it is not likely to be affected if taxes can be exported, whether they are exported to nonresidents or to the Federal government through deductibility. If the fraction of taxes exported remains

constant over time then there are no changes in the story at all. If a fraction p of taxes are exported then the cost to a resident of raising a dollar in taxes is $1-p$ whether it is raised today to finance capital project or raised tomorrow to repay a bond issued to finance the project. If the fraction of taxes exported is rising over time, then there are incentives to increase debt financing of capital projects. But this incentive exists regardless of the tax treatment of municipal bonds.

Our analysis has also made the simplifying assumption that communities are homogeneous so that tax rates do not vary across individuals within a community. At the community level, sorting works to increase homogeneity: low-tax-rate individuals will prefer communities with higher amounts of municipal borrowing while high-tax-rate individuals will prefer communities with lower amounts of municipal borrowing. With heterogeneity in tax rates within a community, our argument is not altered, though the measurement of the subsidy is made more complicated. Assuming a decisive voter framework, the appropriate tax rate used to determine the mix of tax and debt financing is that of the decisive voter. Given the mix of financing chosen, the correct tax rate for measuring the size of the subsidy is a weighted average marginal tax rate, with local tax shares as weights.

4. Discussion and Conclusions

Why are these results so different from the effects of the tax deductibility of corporate interest payments on corporate investment rates? Many papers argue that corporate investment incentives increase due to the favorable tax treatment of corporate interest, so how can we argue that municipal investment is unaffected by the favorable treatment of municipal bonds? The key difference is that when corporations invest more, this enables them to borrow more so allows them to increase their interest deductions. Not only does the extra capital generate more income to help repay new debt, but the extra capital can be used as security for the new debt. Therefore, lenders are willing to lend more if corporations invest more. In contrast, municipal investment rarely generates any cash flow and it cannot be used effectively as security for municipal debt. Lenders' "security" is simply the property-tax base of the community, which is unchanged by municipal investment. When a municipality invests more, it therefore does not change its ability to borrow.

If the tax exempt status of municipal bonds does not provide a subsidy to municipal investment, what role does it play in the economy? The effects on wealthy investors are easy to describe. Consider, for example, the diagram in Figure 1 describing the net-of-tax rate of return on taxable (line TT) and tax-exempt (line MM) bonds, as a function of the tax rate of the investor. As seen in the diagram, any investor in a tax bracket above t^* earns more after tax by investing in municipal bonds than in taxable bonds. In fact, such investors have an incentive to borrow at the taxable rate, deduct the interest, and use the proceeds to invest further in municipal bonds.[10] Standard portfolio theory forecasts that they will engage in this arbitrage until they face enough risk from unexpected changes in the value of r relative to that of r_m that at the margin the risk-bearing costs of further arbitrage just outweigh the tax benefits. But the same story can be told in reverse for those investors in tax brackets below t^*. These investors prefer to invest in taxable rather than municipal bonds, and would gain from borrowing at the tax-exempt rate to invest further at the taxable rate. While such investors cannot as individuals borrow at the tax-exempt rate, they can do so collectively through their municipal government. By the same logic as is used for wealthy investors, they should engage in this reverse arbitrage until the risk-bearing costs or other nontax costs of further arbitrage just offset the tax gain. These two arguments are entirely symmetric. The municipality serves as a financial intermediary for low-bracket investors, just as a stockbroker serves as a financial intermediary for high-bracket investors. In each case, intermediaries may charge some for their services,[11] but intermediaries are not subsidized by the asymmetric tax treatment of the two assets. On net, those in extreme tax brackets at both ends gain from the tax-exempt status of municipal bonds, while those in intermediate tax brackets are basically left unaffected.[12]

Making interest on municipal bonds taxable would eliminate the above arbitrage possibilities for both low-tax-bracket and high-tax-bracket investors. However, it would not eliminate all the arbitrage possibilities municipalities have available. If municipalities invest surplus funds in taxable bonds, the resulting interest income is received free of tax. Therefore, investors can receive a rate of return described by line TA in Figure 1 if they invest in taxable bonds through their municipality. The higher the tax bracket of the

individual, the greater the gain from this possibility.[13] Section 148 of the I.R.S. code currently restricts the degree to which communities can borrow at r_m to invest at the taxable rate r. It does not limit, however, the degree to which a community can raise taxes now, invest the funds in taxable bonds, then use the resulting interest income to reduce taxes in the future.[14] If communities were to stop issuing municipal bonds if these bonds become taxable, however, then section 148 would no longer limit their ability to invest in taxable bonds. If anything, therefore, municipal investment in taxable bonds should increase as a result of making interest on municipal debt taxable.[15]

The only way to eliminate the arbitrage possibilities available to municipalities would be to pass through any interest income received by the municipality, and interest payments made by the municipality, to individual residents for tax purposes. The logic is the same as that underlying schemes to integrate the corporate and the personal income tax.[16] In each case, under current law, income owned by an individual is taxed at one rate if the individual receives it directly, but at a different rate if it is received to begin with by a corporation or a municipality "owned" by the individual. The distortions created by these differences in tax rates would be eliminated if all income owned by the individual, regardless of whether it is received directly or indirectly, is taxed at the same rate. The easiest way to do this would be to include in each individual's taxable income his share of the taxable income received by a corporation he owns shares in, and his share of the taxable income or tax deductions of a municipality he lives in. Then, even if the municipality earns a rate of return r on investments in taxable bonds, residents would receive a net rate of return $r(1-t)$. Similarly, even if the municipality has to pay a rate of return r on any debt it issues, the net-of-tax cost of this debt to residents would become $r(1-t)$.

In sum, the tax-exempt status of municipal bonds should have little or no effects on capital investment by municipalities. Its main effect is to open up arbitrage opportunities for investors in extreme tax brackets. When municipal bonds are tax exempt, those in the highest tax brackets can earn a more attractive rate of return, while those in the lowest tax brackets can borrow through their municipalities at a lower interest rate. Renters, however, cannot gain from their municipality's ability to borrow at this low rate. Since many low-tax-bracket individuals are also renters, the gains from the tax-exempt status of municipal bonds go primarily to those in the highest tax brackets.

FOOTNOTES

1. These nontax costs can include not only risk-bearing costs, but also increased risk of municipal default, with all the costs that involves.

2. If bonds are retired at the same rate that the capital financed by them depreciates, then the figure $r - r_m$ measures the reduction in the required rate of return on municipal investment arising from the tax-exempt status of these bonds. Normally, however, new debt issues are retired more quickly than the capital depreciates, leading to a smaller reduction in the required rate of return on new investment than $r - r_m$.

3. Of course, the residents may not finance the initial taxes by withdrawing the funds from their savings (i.e. private consumption might fall), and the savings may not have been entirely in taxable bonds. But as long as each resident were doing some savings, then the alternative sources of funds would have the same cost as foregone savings at the margin. Similarly, as long as each resident had some savings in taxable bonds (or had borrowed some at this interest rate), then the alternative investments would earn a rate of return equivalent in utility terms to $r(1-t)$.

4. If individuals itemize, so that they can deduct any municipal taxes they pay, then the costs of financing with either alternative would be reduced by the same proportion. If, however, individuals itemize in some periods and not others, then they would want to structure the financing so that all of the taxes are paid in those periods in which they itemize.

5. See Quigley and Rubinfeld(this issue) for a discussion of municipal use of insurance.

6. While it would have been equivalent here to assume that $T_1 > 0$, this equivalence would no longer hold if we allowed for noncapital expenditures by the municipality.

7. While the coupon on the debt can rise as the community borrows more to compensate lenders for any losses they may incur in the event of default, if it does so simply to offset underpayments in the event of default, leaving the expected receipts of lenders the same, then it also leaves the expected payments by the community the same. This effect of extra borrowing therefore does not appear in the function $c(.)$.

8. If no such state–imposed constraint exists, then the above model implies that municipal capital investment cannot be subsidized by the tax–exempt status of municipal bonds. According to Hill(1978), four states do not have any limits on municipal debt levels.

9. The argument that only tax finance will be used is a bit weaker here. While landlords would prefer tax finance, tenants would be indifferent unless they recognized the unfavorable effects of debt finance on rents in the long–run.

10. This form of arbitrage is in principle prevented by section 265 of the I.R.S. code, though enforcement of this section is extremely difficult.

11. Competitive pressure, due to mobility in the municipal context, should cause these charges to equal the resource cost of engaging in this financial activity. Stories about a "fly–paper effect" presume that these competitive pressures on a municipality are weak, however.

12. To the extent that those in low tax brackets are renters, however, they do not gain from their community's ability to borrow at the tax–exempt interest rate. Given how commonly those in low tax brackets rent, the gains from the tax–exempt status of municipal bonds should go primarily to those in high tax brackets.

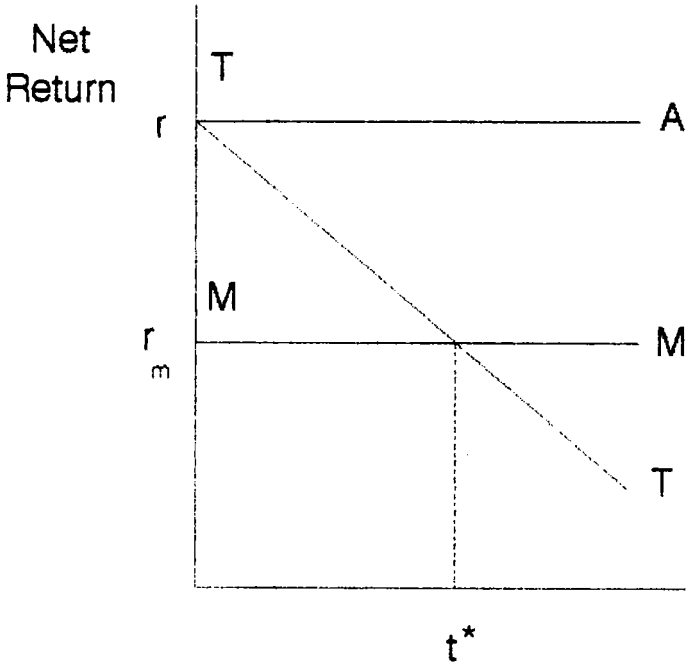
13. See Gordon and Slemrod(1986) for further discussion.

14. Some states, for example, have enacted tuition prepayment programs, in order to take advantage of this tax–exempt form of savings. In this particular case, however, the I.R.S. has moved to tax the income accruing within these plans to the participating individuals. (See *The New York Times*, Aug. 29, 1988).

15. Since municipal borrowing would become very expensive if interest on municipal debt were taxable, communities would want to avoid any debt issues. One way to avoid sharp fluctuations in municipal tax rates over time is to raise taxes in anticipation of future capital investments, putting the funds in the interim in taxable bonds. For this reason as well, municipal investments in taxable bonds should increase.

16. Such schemes are described, for example, in McLure(1979).

Figure 1



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