Taking Charge: Should New England Increase Its Reliance on User Charges?

Robert Tannenwald

Economist, Federal Reserve Bank of Boston. *The author wishes to thank Ben Bernanke, Lynn Browne, Richard Kopcke, Helen Ladd, and Eric Rosengren for comments and suggestions. Mitchell Fournier, Natalie Inman, and Betsy Morgan supplied valuable research assistance.*

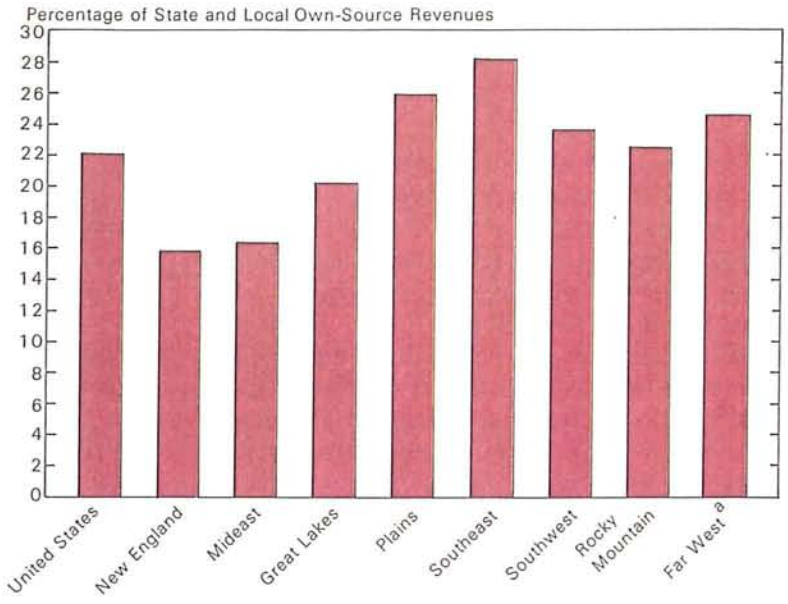
Last year was difficult for New England's state and local governments. Each state government was forced to borrow, raise taxes, cut spending, or tap reserves in order to balance its budget for fiscal year 1990. All of the region's states except Maine and New Hampshire have slowed the rate of growth in their fiscal assistance to cities and towns.[1] This slow growth in state aid comes at a time when the inflation-adjusted value of federal aid to local governments is declining; public school enrollment is rising; and municipalities are grappling with such problems as hazardous waste disposal, underfunded pension liabilities, homelessness, and deteriorating public infrastructure.

In order to relieve their fiscal stress, the region's state and local governments have been casting their nets for sources of additional revenue. One potential source receiving considerable attention is higher user charges. A user charge is a payment for a specific publicly provided service, such as electricity, garbage collection, or higher education. The size of the payment varies directly with the amount of service rendered to the payor. By contrast, most taxes are payments for government services in general and do not necessarily reflect the quantity of services received by the taxpayer. (As discussed in the accompanying box, some revenue sources are difficult to classify as either user charges or taxes.)

New England relies less on user charges for its state and local revenues than any other region of the country (chart 1). As a result, some policymakers maintain that increases in user charges would correct an "imbalance" in the region's revenue mix. However, the national mix of state and local revenues is not necessarily the best mix for the states of New England. The degree to which a state should rely on user charges depends on the priorities of its policymakers among competing principles of taxation, the conditions under which each principle favors user charges over taxes, and the extent to which these conditions exist within the state. Since each state has its own distinctive

Chart 1

The Role of User Charges in State and Local Own-Source Revenues, Fiscal Year 1986



[a]Far West excludes Alaska and Hawaii. U.S. total includes Alaska and Hawaii.
Note: See footnote 3 for definition of state and local own-source revenue. User charges include current charges, utility revenue, and liquor store revenue.
Source: U.S. Bureau of the Census, *Government Finances 1985-86.*

values and traits, the role of user charges in financing state and local government should vary across states.

This article explores the conditions under which user charges compare favorably to taxes according to the principles of efficiency, equity, and exportability.

The national mix of state and local revenues is not necessarily the best mix for the states of New England.

Section I briefly explains these principles. Sections II and III discuss five conditions under which user charges compare favorably to taxes according to at least one of these principles. Where possible, evidence is presented concerning the extent to which these conditions are less common in New England than in other regions of the country. Section IV draws policy conclusions.

The article finds that, given conditions peculiar to New England, the region's low dependence on user charges makes sense in terms of all three principles. Moreover, in several instances where New England states do rely heavily on user charges to finance a particular public service, circumstances favor user charge financing.

I. What Makes a Revenue System Efficient, Equitable, and Exportable?

Efficiency, equity, and exportability are three widely recognized criteria of a good state and local revenue system. An efficient revenue system helps governments and private firms to produce what people want most at the least possible cost. An equitable revenue system distributes the burden of financing government fairly. The definition of fairness depends on which of the two basic principles of tax equity is adopted. According to the "benefit principle," the burden of financing government should be distributed in proportion to the benefits received from government. According to the "ability to pay principle," tax policymakers should take into account each household's personal circumstances in

Sorting Out User Charges and Taxes

The line separating user charges from taxes is indistinct.[2] Three categories of revenues identified by the U.S. Bureau of the Census—"current charges," "utility revenue," and "liquor store revenue"—clearly should be considered user charges. The Census Bureau defines current charges as "amounts received from the public for performance of specific services benefiting the person charged, and from sales of commodities and services . . . ." (U.S. Bureau of the Census 1987). The largest categories of current charges finance hospital care, higher education, and sewerage. These charges, mostly imposed by local governments, account for 14 percent of all state and local own-source revenue (table 1).[3] Charges imposed by publicly operated utilities, owned primarily by local governments, account for approximately 8 percent. Government-owned liquor stores, operated mostly by state governments, account for only 0.6 percent, although in New Hampshire they account for 8.3 percent.

Some analysts contend that taxes on motor fuels are in effect user charges because most of the revenue they generate is earmarked for the construction and maintenance of roads and bridges. Financing these expenditures entirely with tolls would entail enormous administrative costs and would create intolerable traffic congestion. Consequently, state and local governments generally opt for the more tractable alternative of taxing the consumption of motor fuel, a complement of road usage. Because of this complementary relationship, the burden of motor fuel taxes is distributed among drivers roughly in proportion to the number of miles driven. State and local motor fuel taxes, levied primarily by state governments, account for 3 percent of all state and local own-source revenue.

"Special assessments," imposed primarily by local governments, are also sometimes classified as user charges. These assessments, only 0.4 percent of all state and local own-source revenue, are "compulsory contributions collected from owners of property benefited by special public improvements . . . to defray the cost of such improvements" (U.S Bureau of the Census 1987). While such assessments are not based on actual usage of the improved facility, the relationship between usage and assessment is often close. For example, municipalities sometimes cover the cost of repaving a small street lined with owner-occupied homes by imposing a special assessment on the owners of the homes, reasoning that these homeowners are the principal users of the improved street.

Thus, user charges account for between 22 and 25 percent of nationwide state and local revenues, depending on the characterization of motor fuel taxes and special assessments. The comparable range for New England is between 16 percent and 18 percent.

License taxes are sometimes considered a form of user charge. These taxes are payments required for the privilege of engaging in a particular regulated activity, such as driving, marrying, hunting, fishing, and selling liquor, or owning property incident to such activity, such as a rifle or an automobile. In contrast to current charges and utility revenues, they are collected almost exclusively by state governments. In 1986 they accounted for 3 percent of all state and local own-source revenue.

Mushkin and Bird (1972) characterize license taxes as charges for regulatory services that benefit the licensed individual, such as enforcement of traffic, hunting, and fishing laws. However, rarely does a license tax paid reflect the amount of licensed activity undertaken. Moreover, the regulation of such activity often benefits the general public at least as much as license holders. Consequently, license taxes are not considered as user charges in this article.

Table 1
The Importance of User Charges and Related Revenue Sources in the Mix of State and Local Own-Source Revenues, by Region, Fiscal Year 1986

	Percentage of Total State and Local Own-Source Revenues							
	User Charges				Revenue Sources Related to User Charges			
	Current Charges (1)	Utility Revenue (2)	Liquor Store Revenue (3)	Total User Charges [(1)+(2)+(3)] (4)	Special Assessments (5)	Motor Fuels Taxes (6)	License Taxes (7)	Other Revenues (8)
New England	10.3	4.7	.8	15.8	.1	2.5	2.1	79.4
Connecticut	8.0	3.3	0	11.4	.3	2.9	2.5	83.0
Maine	11.6	1.9	2.0	15.6	0	4.0	3.6	76.7
Massachusetts	10.7	6.6	0	17.3	.1	1.9	1.3	79.3
New Hampshire	12.1	1.5	8.3	22.0	0	3.6	4.2	70.3
Rhode Island	11.6	2.1	0	13.7	.2	2.2	1.6	82.3
Vermont	13.3	6.0	2.5	21.8	0	3.2	3.5	71.5
Mideast	10.7	5.2	.6	16.4	.2	1.5	2.4	79.5
Great Lakes	14.7	4.7	.8	20.2	.3	2.9	2.8	73.7
Plains	16.3	9.1	.7	26.0	.8	2.9	3.1	67.2
Southeast	16.9	10.6	.7	28.2	.2	3.4	2.9	65.2
Southwest	13.9	9.8	0	23.7	.5	2.8	4.6	68.5
Rocky Mountain	14.8	6.7	1.0	22.5	.9	2.9	2.4	71.4
Far West[a]	14.5	9.7	.4	24.6	.6	1.9	1.8	71.0
United States	14.0	7.6	.6	22.2	.4	2.5	2.7	72.3

[a]Excludes Alaska and Hawaii. United States total includes Alaska and Hawaii.
Note: See footnote 3 for definition of state and local own-source revenues.
Source: U.S. Bureau of the Census. *Government Finances 1985–86.*

determining its share of financing government. The latter principle is generally thought to imply that, as a household's income increases, the portion of its income paid in taxes and charges should increase, too. A tax or user charge that distributes its burden in this manner is a "progressive" tax. By comparison, under a "regressive" tax or charge, payments as a proportion of income decline with income.

An "exportable" state and local revenue system imposes a significant proportion of its burden on residents of other states. The more a state can export the burden of its taxes and charges to nonresidents, the larger the volume of public services that it can provide at a given cost to its residents. Consequently, it is in the interest of each state to export as much of its revenue burden as possible.

Efficiency, equity, and exportability are potentially incompatible. A revenue system that promotes efficiency may be regressive, or a system that exports a large proportion of its burden may stimulate an inefficiently high level of public spending. Consequently, tax policymakers must establish priorities among these partially competing objectives in order to choose rationally among alternative revenue structures.

II. Two Good Reasons for New England's Low Dependence on User Charges

At least two conditions favoring taxes over user charges are more common in New England than in other regions of the country. First, New England spends a relatively large portion of its state and local revenues on public welfare and on "collective" services. Second, New Englanders have a relatively strong incentive to rely on sources of state and local revenue that are deductible from federal taxable income.

User Charges, Public Welfare, and Collective Services

The degree to which a publicly provided service should be financed with user charges depends in part on whether its primary purpose is redistribution and on whether it is "private," "mixed," or "collective." User charges are obviously poorly suited to finance services targeted on economically disadvantaged households. To finance such services wholly or mostly with user charges would defeat their very purpose. As explained below, user charges are better suited than taxes to finance services that are private in nature. Mixed services are best financed with a combination of user charges and taxes. Collective services must be financed wholly with taxes.

What are private services, mixed services, and collective services? A private service possesses two distinguishing characteristics. First, it is "rival" in consumption, that is, the consumption of it by one person interferes with the consumption of it by other people. For example, if A uses a public tennis court for an hour, no one else can use that tennis court until the hour has passed. Second, a private service is excludable, that is, the provider of the service can deny it to those who fail to pay for it. For example, city officials can deny access to a public tennis court to those who fail to pay a fee in advance.

By contrast, a collective service is not rival and is usually not excludable. The consumption of it by one person does not diminish the capacity of others to consume it. For example, most members of a community benefit simultaneously from a mosquito abatement program. Moreover, once such a program is initiated, most or all members of a community benefit from it, whether or not they pay for it.[4]

A mixed service has both private and collective attributes. When a household consumes a mixed service, it satisfies some of its own needs or wants while simultaneously generating benefits for other households ("externalities"). For example, when a city removes trash from a specific address, it enables residents at that address to live in a cleaner, healthier environment. At the same time, it reduces the exposure of the whole neighborhood to filth, germs, and unpleasant odors.[5]

Efficiency considerations. In competitive markets, prices guide buyers and sellers to the most efficient level of production of each private good and service. User charges can similarly help households, businesses, and public officials to achieve the most efficient level of each publicly provided private service, as long as two conditions hold.

First, as a government increases its production of a private service, the value to its residents of additional units of production must become progressively smaller. For example, most households consider some level of water supply to be a necessary minimum for drinking, cooking, and washing. Above this minimum, they use water for less vital purposes, such as watering lawns, filling swimming pools, and washing cars. Thus, the benefit of each additional gallon of water, or water's "marginal benefit," declines with volume.

Second, the cost of expanding output of the service must increase with volume. For example, suppose that as a town's water works increases output, it must install more powerful pumps, replace parts more frequently, alter the construction of its buildings to ensure safety, and use more sophisticated monitoring and control devices. As a result, the cost of producing each additional gallon of water, or the "marginal" cost of production, increases with volume.[6]

User charge financing is not inherently more efficient than taxation if public production includes mixed services or collective services.

If these two conditions hold, then, as production and consumption of a public service increase, its marginal benefit falls and its marginal cost rises. Total economic welfare increases as long as each additional unit of service generates more benefit than cost. If benefits accrue only to consumers of the service, economic welfare is maximized at the point where the marginal benefit to consumers and the marginal cost to producers are equal. Beyond that point, additional production generates more cost than benefit, diminishing total economic welfare.

A governmental agency can discover this welfare-maximizing point by setting price equal to marginal cost at each level of production. Consumers will purchase additional output as long as the resulting marginal benefit exceeds price. They will stop expanding consumption at the level at which marginal

benefit, price, and therefore marginal cost, are equal. In this manner, marginal cost pricing can guide public agencies to an efficient level of production.

By contrast, when a publicly produced private service is financed through taxation, officials lack the feedback from consumers needed to determine the optimal level of production. Each household perceives the cost to itself of consuming an additional unit of the service to be close to zero, since the total cost is spread among all taxpayers. Consequently, in the absence of constraints imposed on production by public officials, too much of the service is consumed. Officials must therefore guess the level of production that maximizes economic welfare.

However, user charge financing is not inherently more efficient than taxation if public production includes mixed services or collective services. Consumers of a mixed service have little incentive to take into account the externalities that they generate. They compare the price of the service with the marginal benefit to themselves of additional consumption. Consequently, if the price of the mixed service is set equal to marginal cost, the amount of it consumed will be suboptimal. The total benefits from additional consumption, including externalities, will exceed the cost of additional production.

For example, suppose that municipal sanitation departments removed trash only on request for a fee. It is unlikely that households would take into account all of the external benefits generated by this service in deciding how frequently to have their trash removed. Consequently, most cities and towns subsidize trash removal or pay for it entirely out of tax revenue in order to ensure that trash is removed at a socially optimal frequency.

A collective service must be financed exclusively with taxes. Once a government provides a collective service to one household, most or all households served by that government benefit from the service, no matter who pays for it. For example, most residents of a community benefit from mosquito abatement programs and the maintenance of public buildings. Since everyone has an incentive to let someone else pay for these expenses, no one pays for them voluntarily.

Equity considerations. As pointed out in section I, according to the "benefit" principle of equity the burden of financing government should be distributed in proportion to the benefits received from government. By this standard, user charges usually get high marks because, by definition, they link payment for a particular public service to the amount of service consumed. If the service is private in nature, payments made are, indeed, proportional to benefits received. However, when mixed goods are financed with user charges, those enjoying external benefits do not pay for them.

In the case of some mixed goods, taxation may conform as closely to the benefit principle as user charge financing. For example, good public schools enhance property values as well as educate their pupils. Consequently, financing public education with property taxes may conform as closely to the benefit principle as sole reliance on tuition. The most equitable formula according to the benefit principle may be some combination of taxes and tuition.

User charges may play such a small role in New England because of its high priority on collective services and redistributional programs.

The importance of collective services and redistributional programs in New England's mix of public spending. If the suitability and feasibility of user charge financing depend in part on the nature of the public service to be financed, then New England's low dependence on user charges may in part reflect its mix of state and local spending. Specifically, user charges may play such a small role in New England because its states and municipalities place a high priority on collective services, which can not be financed with user charges, and redistributional programs, which should not be financed with user charges.

Evidence concerning this hypothesis is presented in table 2 and charts 2a and 2b. Table 2 classifies state and local spending categories into those consisting mostly of collective services, private services, and mixed services. The spending categories are those used by the U.S. Bureau of the Census in its official statistics on governmental finances.

This classification is necessarily arbitrary to some degree. Many of the spending categories include a wide range of services, some collective, some private, and some mixed. Moreover, the degree to which a specific service generates externalities is difficult to

Table 2
Collective Services, Private Services, and Mixed Services: A Classification of Categories of State and Local Spending

Categories Consisting Primarily of:		
(1)	(2)	(3)
Collective Services	Private Services	Mixed Services
Public Health	Hospitals	Elementary and Secondary Education
Police Protection	Electric Power	Higher Education
Fire Protection	Water Supply	Employment Security Administration
Correction	Gas Supply	Veterans' Services
Protective Inspection and Regulation	Liquor Stores	Highways
Financial Administration	Public Welfare	Air Transportation
Judicial and Legal		Parking Facilities
General Public Buildings		Water Transport and Terminals
Other Government Administration		Transit Subsidies
Interest on General Debt		Natural Resources
		Parks and Recreation
		Housing and Community Development
		Sewerage
		Sanitation other than Sewerage

Note: Insurance Trust Fund Expenditures are excluded from these lists. For reasons, see footnote 3.
Source: Author's classifications and U.S. Bureau of the Census, *Government Finances 1985–86.*

evaluate in many cases. In columns 1 and 2, the author has attempted to identify only those expenditure categories that are, respectively, most clearly collective and private in nature.

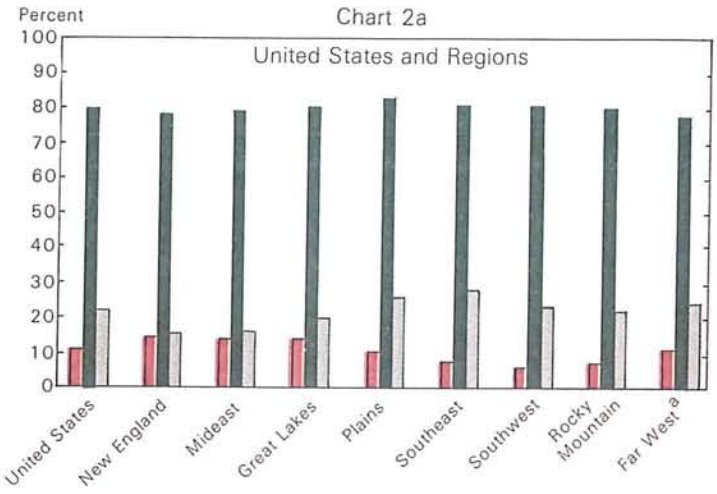
According to chart 2a, collective expenditure categories account for a larger fraction of state and local spending in New England than in any other region of the country. The same is true for public welfare, the only spending category characterized here as primarily redistributional in nature.[7] Within New England, collective categories receive especially high priority in Connecticut and Rhode Island, while public welfare is heavily emphasized in Maine, Massachusetts, New Hampshire, and Rhode Island (chart 2b). Nationwide, the more a state emphasizes public welfare and collective services in its spending mix, the less it relies on user charges and the more it relies on taxes.[8] Thus, New England's state and local spending priorities vindicate and may partially account for its low dependence on user charges.

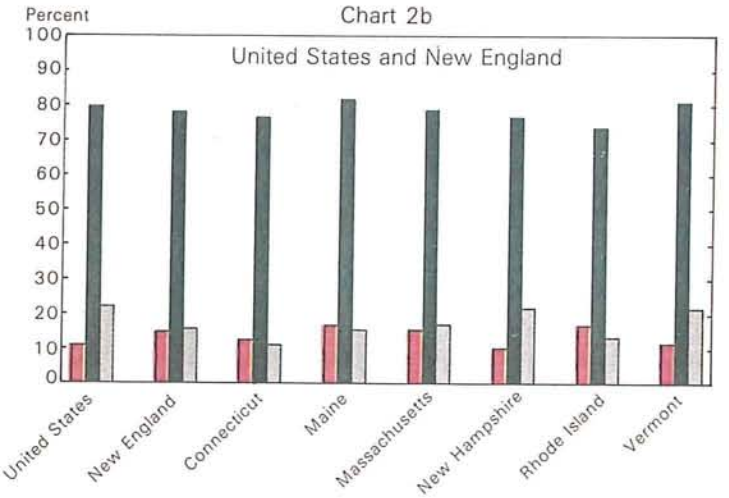
New England's emphasis on collective services largely reflects the high interest per capita it pays on its general debt (classified here as a collective service) and its low per capita spending on three large categories of private and mixed services: electric power, higher education, and hospital care (see appendix table 1). Moreover, user charge financing is poorly suited to the types of public hospital care that New England does offer. These types are generally not covered by health insurance; New England care is more oriented toward hospices, psychiatric care, and care of the mentally retarded. If these services were financed out of user charges, only people in the highest income brackets could afford them. Largely as a result, New England states generally do not rely heavily on user charges to finance their public hospitals (appendix table 2). By contrast, states that do depend heavily on user charges for this purpose, such as Nebraska, Kentucky, Mississippi, and Wyoming, provide extensive general hospital care. Because most general hospital services are covered by insurance, most patients can afford them even when their cost is not heavily subsidized with tax revenues.

Federal Tax Disincentives to User Charge Financing

States and municipalities have an incentive to rely on sources of revenue that are deductible from federal taxable income. Currently, households filing itemized federal returns can deduct state and local personal income taxes and property taxes. (Prior to 1987 they could deduct state and local general sales

State and Local Spending on Welfare and on Private and Mixed Services and State and Local User Charges by Region, Fiscal Year 1986





[a] Far West excludes Alaska and Hawaii. U.S. total includes Alaska and Hawaii.
Source: Author's calculations and U.S. Bureau of the Census, *Government Finances 1985-86.*

Spending on public welfare as a percentage of total state and local spending (excluding spending from insurance trust funds).

Spending on private and mixed services as a percentage of total state and local spending (excluding spending from insurance trust funds).

User charges as a percentage of total state and local own-source revenues. User charges include current charges, utility revenue, and liquor store revenue. See footnote 3 for a definition of total own-source revenues.

taxes as well.) On the whole, New England's states, cities, and towns have a relatively strong incentive to rely on deductible taxes.

By relying on deductible taxes, state and local governments can "export" a portion of their revenue burden to residents of other states. To the extent that the loss in federal revenue resulting from the deductibility of state and local taxes is offset by federal tax increases, these increases are borne by federal taxpayers nationwide. Similarly, if the federal revenue forgone through deductibility augments the federal deficit, the costs in higher interest rates or inflationary potential are shared throughout the nation. Consequently, by relying on deductible taxes, a state or municipality can lower the effective revenue burden borne by its residents.

The incentive for a state or municipality to rely on deductible taxes depends on the average federal tax saving of its residents per dollar of deductible taxes. This tax saving, in turn, depends on the fraction of deductible taxes that is actually deducted and the average tax saving per deducted tax dollar. For example, in calendar year 1985, 56 percent of all deductible taxes levied by Massachusetts were actually deducted by residents of the Commonwealth, and each deducted tax dollar saved Massachusetts itemizers an average of $0.27. Consequently, deductibility reduced the burden of the Commonwealth's deductible tax dollars by an average of (.56) × ($0.27), or $0.15 per dollar. Put another way, the average net burden of each deductible tax dollar was $0.85 (see appendix table 3). The net burden of each dollar collected from nondeductible sources was one dollar.

In 1985 the average net burden of a deductible tax dollar was lower than the national average in every New England state except Maine (appendix table 3). Because New Englanders enjoy high incomes relative to the national average, they are subject to high marginal tax rates. Consequently, they enjoy large federal tax savings per deducted state and local tax dollar. Their high incomes also encourage itemization. This propensity is reinforced by the large percentage of their household spending allocated to deductible items, such as mortgage interest, income taxes, and property taxes. Thus, in the interest of exportability, New England's state and local governments should rely less heavily on nondeductible sources of revenue, including user charges.

How much deductibility of state and local taxes has actually influenced the revenue mix of New England and of other regions is unclear. Nationwide, states with a relatively strong federal tax incentive to rely on deductible taxes in fact tend to rely on them more than other states do.[9] However, some economists have argued that this correlation is spurious, reflecting other underlying factors.[10] Within New England, New Hampshire, and Vermont rely lightly on deductible taxes, even though both states have a relatively strong federal tax incentive to levy them (appendix table 3).

III. Other Considerations in Choosing between User Charges and Taxes

Even if a state or local government has a strong federal tax incentive to rely on deductible taxes, it may nevertheless rely heavily on user charges to finance some of its private and mixed services. Financing such a service with user charges is most equitable and efficient when 1) the service is not a necessity, 2) a large portion of the service is consumed by nonresidents, and 3) the cost of providing the service varies widely among the neighborhoods or communities served by the state or local government. Given currently available data, it is not possible to evaluate the degree to which the private and mixed services provided by each state exhibit these three characteristics. Nevertheless, the extent to which these conditions hold is an important consideration in deciding how to finance a particular public service.

User Charges and Necessities

User charges generally finance services considered to be necessities, such as gas and electricity, water supply, sewerage, trash removal, and hospital care. Because they are necessities, their importance in a household's budget decreases as its income increases. Consequently, most user charges are regressive.

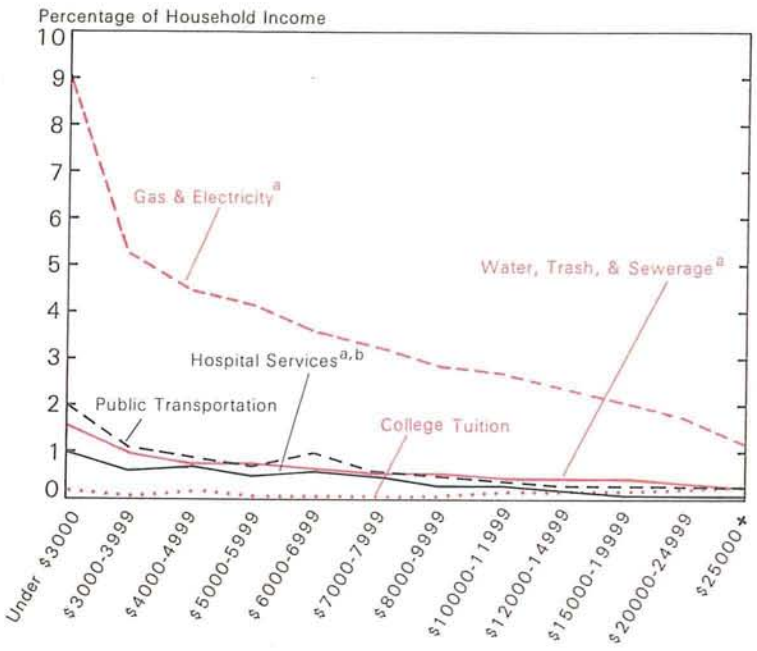
Many user charges are no more regressive, or even less regressive, than certain forms of taxation.

A survey conducted by the U.S. Bureau of Labor Statistics in 1972 and 1973 (U.S. Bureau of Labor Statistics 1978) confirms this regressive pattern (chart 3).[11] The only charge reported in the survey whose burden is not regressively distributed is tuition for public higher education, the third largest category of state and local user charges nationwide.

While most major charges are regressive, many of them are no more regressive, or even less regressive, than certain forms of taxation. Consequently, before rejecting higher user charges in favor of higher taxes, states and municipalities should consider the distributional characteristics of the tax alternatives at their disposal. According to Phares (1980), the most regressive taxes are selective sales taxes, such as excise taxes on liquor, tobacco products, and motor fuels; general sales taxes; and license taxes.[12] New

Chart 3

Household Outlays on Selected Services Often Financed by State and Local User Charges, by Income Class, 1972-73



[a] Publicly provided and privately provided services combined because of limitations of available data.
[b] Billed, not covered by insurance.

Note: The personal income deflator, as reported in the National Income Product Accounts, averaged 48.1 in 1972 and 1973 (1982=100). In the second quarter of 1989, this deflator equalled 129.8. Consequently, in order to inflate the income brackets used in this chart, the lower and upper boundary of each should be multiplied by 2.7 (129.8/48.1). For example, in 1989:2 dollars, the $3,000-3,999 bracket would be $8,100-10,797.

Source: U.S. Bureau of Labor Statistics, *Consumer Expenditure Survey 1972-1973*; U.S. Bureau of Economic Analysis, *National Income and Product Accounts*, and unpublished data.

England relies less heavily on these taxes for its state and local revenue than any other region. Partially as a result, several of the region's six state governments have responded to their budgetary problems by recently increasing one or more of these types of taxes (Gold 1989). The region's state and local tax policymakers should keep in mind that these taxes have the same undesirable distributional characteristics as many user charges. If their choice comes down to higher user charges, higher taxes on consumption, or higher license taxes, higher user charges may be the fairest of the three.

Taxes, User Charges, and Subsidization across Sites

Other things equal, user charges are more efficient and more equitable than taxes in financing services whose marginal cost varies greatly over space. Unlike user charges, taxes cannot discriminate among customers according to their location. Consequently, taxpayers at low-cost locations subsidize taxpayers at high-cost locations. Such "cross-subsidization" is unfair and stimulates excessive consumption by customers at high-cost sites.

For example, the marginal cost of sewerage varies inversely with population density because the more spread out the population served, the more feet of sewer pipe are required per customer. Consequently, in jurisdictions exhibiting a great deal of variation in density, taxpayers inhabiting high-density locations often must subsidize the cost of providing these services to taxpayers at low-density locations. Through "hook-up" fees and other public pricing schemes, user charges can be designed to force the latter to pay more for their sewer services than the the former, thereby reducing inequitable and inefficient cross-subsidization (Downing and DiLorenzo 1981 and Fisher 1987). Differential pricing can also reduce cross-subsidization in the provision of electricity, water, and natural gas.

Concern about cross-subsidization may explain why the percentage of a state's spending on sewerage that is financed by user charges depends partly on the extent to which sewerage is the responsibility of state agencies, county governments, and special districts (see the appendix).[13] Because states, most counties, and most special districts contain more than one municipality, the variation in population density within these three types of jurisdictions tends to be greater than the variation within a city or town.

Consequently, the probability of cross-subsidization among households is especially high if a state, county, or special district relies heavily on taxation to finance sewerage. In New England, where reliance on user charges to finance sewerage is extremely light (appendix table 2), sewerage is almost exclusively a municipal function.[14]

User Charges and Consumption by Nonresidents

When a state or local government finances a service through taxation, residents often subsidize the consumption of the service by nonresidents. This subsidization unfairly burdens residents and induces an inefficiently high level of consumption by nonresidents. If the service is private or mixed, then governments can reduce this inequity and inefficiency by charging for the service. By imposing user charges, they can also often export more of their revenue burden to nonresidents than by levying taxes.[15]

In several of the instances in which New England states rely heavily on user charges to finance a particular service, nonresidents consume a large proportion of the service. For example, a large proportion of the students enrolled in the public universities and colleges of New Hampshire and Vermont are nonresidents. These two states rely more heavily on tuition and fees to finance public higher education than any other state in the nation (appendix table 2). Nationwide, the larger the proportion of students enrolled in a state's institutions of higher learning that are nonresidents, the more the state relies on tuition and fees to finance those institutions (see the appendix). This relationship reflects the fact that all states charge nonresidents higher tuition than residents, mostly to compensate for the fact that their parents pay taxes to the state in which they live, not to the state in which their children attend college.

The heavy volume of interstate traffic borne by the highways of Maine, Massachusetts, and New Hampshire justifies and may partially explain these states' relatively heavy reliance on tolls to pay for their roads and bridges (appendix table 2). Massachusetts' highways are heavily used by motorists traversing the Northeast corridor. (Other states along the Northeast corridor, such as New York, New Jersey, Delaware, and Maryland, also rely heavily on tolls to pay for their roads and bridges.) The highways in New Hampshire's southeast corner bear a large volume of traffic traveling between Maine and other northeastern states. Moreover, tourism is an important industry to Maine, Massachusetts, and New Hampshire. Similarly, Massachusetts' heavy reliance on user charges to finance its airports may be justified by the large number of nonresidents that use Logan International Airport, the Commonwealth's only major air facility.

IV. Policy Implications

The U.S. Advisory Commission on Intergovernmental Relations (1979) has urged states and municipalities to strive for balance in their mix of revenues. The Commission has actually stipulated the percentage of total revenues that each tax should raise in an ideal state and local revenue system. Yet, a "balanced" system is not necessarily an efficient or equitable one.[16] Consequently, New England's state and local governments should not increase their user charges solely in order to bring the composition of their state and local revenues into greater conformity with the nationwide pattern. Indeed, this article has documented conditions in New England that partially explain and justify the relatively small role played by user charges in the region's mix of state and local revenues.

Conditions in New England partially explain and justify the relatively small role played by user charges in the region's mix of revenues.

Even if a uniform, ideal ratio of user charges to total revenues could be established, it would be a moving, elusive target. The importance of user charges in a state's revenue mix depends in part on its rate of economic growth. Growth in user charge revenues is less sensitive to business conditions than growth in tax revenues because the largest categories of user charges generally finance public services that are considered to be necessities, for which demand changes more slowly than income. Consequently, when a state's economic growth exceeds that of the national economy, the importance of user charges in its mix of state and local revenues declines relative to the nationwide average, in the absence of offsetting

policy changes. Partially for this reason, between 1977 and 1986 the share of New England's state and local revenues accounted for by user charges grew much more slowly than the comparable share nationwide.[17] However, in the absence of policy changes, this trend will probably reverse itself with slower economic growth in New England.

To the extent that increases in user charges play a role in solving New England's fiscal problems, the principles of efficiency and benefit taxation suggest that such increases should be confined to services that are primarily private in nature, such as electric power, water supply, and hospital care. Other state and local services with a smaller but still significant private dimension include higher education, primary and secondary education, public transportation, air transportation, highways, parks and recreation, housing, and sanitation (including sewerage).

Increases in charges for these services would impose considerable hardship on many low- and middle-income households. Consequently, should such increases be implemented, policymakers should consider mitigating this hardship with progressive tax reforms or increased funding for redistributional programs. For example, as Massachusetts decides whether to enact recently proposed increases in tuition at its public colleges and universities (Flint 1989), it might consider a simultaneous expansion of scholarships for students from low- and middle-income families.

Each state should design fiscal solutions tailored to its own circumstances and priorities among competing tax policy goals.

However New England's state and local governments ultimately deal with their fiscal troubles, their choices should not be dominated by a preoccupation with balance among revenue sources or conformity to nationwide norms. Each state should design solutions tailored to its own circumstances and priorities among competing tax policy goals. Policymakers should not be concerned if, as a result, the composition of their state and local revenues differs from the nationwide pattern.

Appendix

I. Determinants of Reliance on User Charges for Financing Sewerage

As discussed in the text, one significant determinant of the extent to which a state relies on user charges to finance sewerage is the percentage of its spending on sewerage accounted for by state government, county governments, and special districts. The strength of the relationship between these two variables is demonstrated in the following equation, estimated by ordinary-least-squares regression analysis:

$$\underset{}{\text{USERSEW}} = \underset{(0.121)^{**}}{0.288} \times \text{GOVSEW} - \underset{(0.0012)^{*}}{0.0021} \times \text{TAXCAP} + .746$$

$R^2 = 0.149$
Numbers in parentheses are standard errors.
* Significant at the 0.1 level.
** Significant at the 0.05 level.
N = 50

USERSEW = the percentage of spending on sewerage by governments within a state financed with user charges, in FY1986.

GOVSEW = the percentage of spending on sewerage by governments within a state accounted for by state government, county governments, and special districts, FY1986.

TAXCAP = a state's "tax capacity" in FY1986, as measured by the U.S. Advisory Commission on Intergovernmental Relations (1988) with its "representative tax system" approach. According to this approach, a state's tax capacity is the amount of revenues per capita that the state and its local governments would have raised in 1986 from a representative state and local tax system.

II. Interstate Differences in Reliance on User Charges to Finance Higher Education

As discussed in the text, the degree to which a state relies on user charges to finance public higher education is strongly and negatively correlated with the percentage of students in its public colleges and universities who are residents. This percentage is not currently available. Two

proxies were used instead. One is the percentage of freshmen in all of a state's institutions of higher learning, private as well as public, who are nonresidents, as measured by the U.S. Department of Education (1988). The major problem with this proxy is the inclusion of students at private universities. The other proxy is the percentage of students at each state's largest public university who are residents, as estimated by the College Entrance Examination Board (1988). The major problem with this statistic is its exclusion of all public institutions of higher learning other than the state's largest university. Both proxies are significantly correlated with a state's reliance on user charges to finance higher education, as indicated by the following two equations, both estimated by ordinary-least-squares regression analysis:

$$USERED = -0.319 \times COLL + 0.486$$
$$(0.068)^{\#\#}$$
$$R^2 = 0.315$$
$$N = 50$$
$$USERED = -0.191 \times LARGEST + 0.379$$
$$(0.055)^{\#}$$
$$R^2 = 0.198$$
$$N = 50$$

Numbers in parentheses are standard errors.
Significant at the 0.001 level
Significant at the 0.0001 level

USERED = the percentage of spending by a state and its local governments on higher education that is financed with user charges, in FY1986.

COLL = the percentage of freshman at all institutions within a state, private as well as public, that are residents, in 1987.

LARGEST = the percentage of students at the state's largest public university that are residents.

When tax capacity was entered into the above equations as an additional independent variable, its coefficient was found to be statistically insignificant.

III. Reliance on User Charges for Hospital Care

As alluded to in the text, the degree to which a state relies on user charges to finance public hospitals depends on the type of hospital care that it provides. Specifically, the larger the proportion of spending on hospital care devoted to general hospitals, the greater the reliance on user charges to finance hospital care. Data indicating the mix of each state's outlays for hospital care are not readily available. However, the American Hospital Association (1988) provides state-by-state estimates of hospital beds provided by registered, short-term, general community hospitals that are operated by state and local governments. (Registered, short-term, general community hospitals account for most of the beds provided by general hospitals and is the only category for which separate data on state and local governmental facilities exist.) The positive correlation between this per capita measure and a state's reliance on user charges to finance hospital care is indicated in the following equation, estimated by ordinary-least-squares regression analysis:

$$USERHOSP = 0.094 \times BEDSPC + 0.513$$
$$(0.043)^{**}$$
$$R^2 = 0.091$$
$$N=50$$

** Significant at the 0.05 level.

USERHOSP = the proportion of a state's spending on hospital care financed with user charges, FY 1986.

BEDSPC = the number of hospital beds provided by state and local, registered, short-term, community general hospitals per 1,000 population, 1987. (Sources: author's calculations, U.S. Bureau of the Census 1989, and American Hospital Association 1988.)

The coefficient on tax capacity is statistically insignificant when entered into the equation as an independent variable.

Appendix Table 1
Per Capita State and Local Spending on Selected Categories, New England and the United States, Fiscal Year 1986

	Dollars per Capita Spending on:							
State	Higher Education	Rank	Hospitals	Rank	Electric Power	Rank	Interest on General Debt	Rank
New England	$171.89		$127.14		$ 76.90		$190.95	
Connecticut	149.56	(48)	131.57	(24)	45.97	(33)	214.36	(12)
Maine	202.26	(38)	67.43	(45)	9.63	(42)	144.32	(29)
Massachusetts	157.16	(47)	163.44	(15)	127.95	(15)	177.00	(18)
New Hampshire	167.25	(46)	39.09	(49)	7.40	(43)	181.64	(15)
Rhode Island	210.76	(33)	110.53	(31)	4.10	(47)	272.11	(4)
Vermont	335.19	(8)	36.47	(50)	117.93	(17)	176.10	(19)
United States	234.51		157.89		116.90		153.74	

Source: U.S. Bureau of the Census, *Government Finances 1985–86*, and unpublished data.

Appendix Table 2

Composition of State and Local User Charges and Ratio of State and Local User Charges to Total Spending, by Expenditure Category, by Region, Fiscal Year 1986

State	Air Transportation				All Education			
	Percent of All User Charges	Rank	Ratio of User Charges to Spending	Rank	Percent of All User Charges	Rank	Ratio of User Charges to Spending	Rank
New England	2.6		1.183		21.2		0.105	
Connecticut	0.2	(48)	0.352	(44)	21.7	(26)	0.086	(45)
Maine	2.3	(18)	0.804	(16)	30.5	(4)	0.112	(32)
Massachusetts	4.3	(8)	1.512	(1)	15.2	(41)	0.088	(44)
New Hampshire	0.1	(49)	0.200	(50)	29.7	(8)	0.177	(4)
Rhode Island	1.1	(32)	0.509	(36)	29.8	(6)	0.108	(33)
Vermont	0.9	(39)	0.247	(49)	44.6	(1)	0.220	(1)
Mideast	3.5		1.100		16.6		0.083	
Great Lakes	1.9		0.563		27.6		0.138	
Plains	2.1		0.648		21.6		0.146	
Southwest	2.0		0.856		15.6		0.118	
Southeast	3.5		0.736		20.8		0.115	
Rocky Mountain	3.4		0.759		24.6		0.134	
Far West	2.9		0.919		13.4		0.097	
United States	2.7		0.811		18.6		0.113	

State	Higher Education				Elementary, Secondary, & Other Education			
	Percent of All User Charges	Rank	Ratio of User Charges to Spending	Rank	Percent of All User Charges	Rank	Ratio of User Charges to Spending	Rank
New England	17.3		0.392		3.9		0.025	
Connecticut	16.6	(28)	0.328	(32)	5.1	(9)	0.025	(32)
Maine	25.6	(7)	0.379	(16)	4.9	(12)	0.024	(36)
Massachusetts	11.8	(40)	0.343	(26)	3.4	(32)	0.025	(34)
New Hampshire	25.5	(8)	0.642	(1)	4.2	(22)	0.033	(20)
Rhode Island	26.2	(5)	0.379	(17)	3.6	(29)	0.018	(44)
Vermont	41.8	(1)	0.606	(2)	2.8	(40)	0.021	(41)
Mideast	13.2		0.340		3.3		0.021	
Great Lakes	22.5		0.399		5.1		0.036	
Plains	16.5		0.384		5.1		0.049	
Southwest	12.0		0.328		3.6		0.037	
Southeast	16.9		0.321		3.8		0.031	
Rocky Mountain	20.4		0.388		4.2		0.032	
Far West	11.4		0.263		2.0		0.021	
United States	14.9		0.337		3.7		0.030	

Note: Far West excludes Alaska and Hawaii. U.S. average includes Alaska and Hawaii.

Appendix Table 2 *continued*

Composition of State and Local User Charges and Ratio of State and Local User Charges to Total Spending, by Expenditure Category, by Region, Fiscal Year 1986

State	Hospitals				Highways			
	Percent of All User Charges	Rank	Ratio of User Charges to Spending	Rank	Percent of All User Charges	Rank	Ratio of User Charges to Spending	Rank
New England	14.1		0.432		4.0		0.083	
Connecticut	13.8	(33)	0.310	(44)	4.0	(10)	0.054	(17)
Maine	11.1	(38)	0.493	(35)	7.8	(4)	0.096	(5)
Massachusetts	16.2	(26)	0.454	(38)	3.9	(11)	0.124	(4)
New Hampshire	1.2	(50)	0.133	(49)	5.0	(7)	0.091	(6)
Rhode Island	30.5	(5)	0.844	(5)	2.5	(15)	0.044	(19)
Vermont	0.8	(51)	0.109	(51)	0.3	(39)	0.005	(43)
Mideast	10.4		0.291		7.6		0.168	
Great Lakes	18.7		0.660		2.1		0.050	
Plains	19.5		0.681		0.8		0.017	
Southwest	24.7		0.549		1.1		0.015	
Southeast	14.9		0.744		0.7		0.031	
Rocky Mountain	17.1		0.694		0.7		0.014	
Far West	16.6		0.685		0.9		0.041	
United States	17.9		0.600		2.3		0.059	

State	Housing & Community Development				Parks & Recreation			
	Percent of All User Charges	Rank	Ratio of User Charges to Spending	Rank	Percent of All User Charges	Rank	Ratio of User Charges to Spending	Rank
New England	4.7		0.222		1.7		0.206	
Connecticut	4.8	(5)	0.209	(20)	3.5	(3)	0.342	(8)
Maine	2.5	(9)	0.126	(42)	1.5	(24)	0.227	(22)
Massachusetts	5.6	(3)	0.241	(17)	1.2	(34)	0.141	(46)
New Hampshire	2.4	(12)	0.172	(31)	1.6	(23)	0.372	(4)
Rhode Island	5.3	(4)	0.255	(12)	1.1	(39)	0.112	(49)
Vermont	1.6	(20)	0.191	(24)	1.5	(28)	0.337	(9)
Mideast	4.2		0.260		2.1		0.211	
Great Lakes	1.3		0.153		2.1		0.234	
Plains	1.0		0.176		1.5		0.219	
Southwest	1.2		0.184		1.4		0.175	
Southeast	0.8		0.223		1.3		0.224	
Rocky Mountain	0.9		0.167		2.1		0.217	
Far West	0.9		0.098		1.9		0.226	
United States	1.7		0.195		1.7		0.217	

Appendix Table 2 *continued*

Composition of State and Local User Charges and Ratio of State and Local User Charges to Total Spending, by Expenditure Category, by Region, Fiscal Year 1986

State	Sewerage				Sanitation Other than Sewerage			
	Percent of All User Charges	Rank	Ratio of User Charges to Spending	Rank	Percent of All User Charges	Rank	Ratio of User Charges to Spending	Rank
New England	5.4		0.388		0.6		0.122	
Connecticut	5.5	(29)	0.281	(50)	1.3	(27)	0.165	(40)
Maine	8.7	(10)	0.555	(33)	0.5	(44)	0.106	(46)
Massachusetts	5.2	(32)	0.443	(43)	0.5	(45)	0.104	(47)
New Hampshire	4.9	(37)	0.414	(44)	0.7	(42)	0.153	(42)
Rhode Island	5.6	(28)	0.308	(48)	0.3	(48)	0.056	(51)
Vermont	3.1	(46)	0.270	(51)	0.2	(50)	0.093	(48)
Mideast	7.9		0.560		1.5		0.172	
Great Lakes	8.6		0.586		0.9		0.248	
Plains	4.8		0.572		1.2		0.538	
Southwest	4.7		0.588		2.4		0.739	
Southeast	6.9		0.737		3.1		0.500	
Rocky Mountain	6.7		0.657		1.9		0.697	
Far West	7.2		0.814		2.3		0.858	
United States	6.6		0.628		1.9		0.419	

State	Total Utility				Utility: Water Supply			
	Percent of All User Charges	Rank	Ratio of User Charges to Spending	Rank	Percent of All User Charges	Rank	Ratio of User Charges to Spending	Rank
New England	30.0		0.092		9.3		0.889	
Connecticut	29.2	(22)	0.111	(7)	10.9	(19)	0.785	(33)
Maine	12.3	(47)	0.160	(4)	8.6	(31)	0.766	(36)
Massachusetts	38.1	(10)	0.080	(11)	9.4	(26)	0.944	(8)
New Hampshire	7.0	(51)	0.288	(1)	5.4	(47)	0.828	(24)
Rhode Island	15.6	(45)	0.213	(3)	11.4	(14)	1.094	(2)
Vermont	27.5	(25)	0.049	(21)	6.6	(40)	0.856	(21)
Mideast	31.4		0.072		7.7		0.844	
Great Lakes	23.1		0.041		10.6		0.900	
Plains	34.9		0.025		6.7		0.848	
Southwest	37.7		0.014		10.2		0.734	
Southeast	41.4		0.025		13.1		0.815	
Rocky Mountain	29.8		0.016		11.5		0.719	
Far West	39.4		0.018		13.1		0.838	
United States	34.4		0.035		10.4		0.819	

Appendix Table 2 *continued*

Composition of State and Local User Charges and Ratio of State and Local User Charges to Total Spending, by Expenditure Category, by Region, Fiscal Year 1986

State	Utility: Electric Power				Utility: Gas Supply			
	Percent of All User Charges	Rank	Ratio of User Charges to Spending	Rank	Percent of All User Charges	Rank	Ratio of User Charges to Spending	Rank
New England	16.4		0.828		0.9		1.109	
Connecticut	14.9	(24)	0.958	(28)	1.0	(26)	1.283	(1)
Maine	3.2	(41)	0.997	(25)	0.0	(35)	—	
Massachusetts	22.3	(8)	0.796	(38)	1.3	(23)	1.070	(6)
New Hampshire	1.6	(45)	0.915	(32)	0.0	(35)	—	
Rhode Island	1.5	(46)	1.120	(5)	0.0	(35)	—	
Vermont	20.6	(11)	0.852	(36)	0.0	(35)	—	
Mideast	7.6		1.003		2.4		0.950	
Great Lakes	7.6		0.991		2.3		1.019	
Plains	24.0		0.927		3.4		1.004	
Southwest	22.4		0.771		4.4		0.945	
Southeast	25.0		0.734		2.5		1.017	
Rocky Mountain	15.0		0.444		2.6		1.043	
Far West	23.2		0.914		0.6		1.015	
United States	17.9		0.811		2.6		1.000	

State	Utility: Transit System				Liquor Stores			
	Percent of All User Charges	Rank	Ratio of User Charges to Spending	Rank	Percent of All User Charges	Rank	Ratio of User Charges to Spending	Rank
New England	3.4		0.173		4.8		1.162	
Connecticut	2.4	(11)	0.190	(36)	0.0	(23)	—	
Maine	0.5	(29)	0.439	(1)	13.0	(4)	1.019	(21)
Massachusetts	5.2	(6)	0.167	(40)	0.0	(23)	—	
New Hampshire	0.0	(49)	—		37.9	(1)	1.236	(7)
Rhode Island	2.7	(10)	0.202	(34)	0.0	(23)	—	
Vermont	0.3	(36)	0.432	(2)	11.3	(5)	1.038	(20)
Mideast	13.7		0.355		3.5		1.058	
Great Lakes	2.6		0.284		4.0		1.140	
Plains	0.8		0.248		2.6		1.164	
Southwest	0.7		0.211		2.6		—	
Southeast	0.8		0.206		0.0		1.180	
Rocky Mountain	0.7		0.161		4.4		1.270	
Far West	2.6		0.276		1.5		1.296	
United States	3.5		0.302		2.6		1.156	

Source: Author's calculations and U.S. Bureau of the Census, unpublished data.

Appendix Table 3

Size and Burden of Deductible Household Taxes, New England and United States

State	FY 1986 Deductible Household Taxes as a Percentage of Total Household Taxes	1985 Average Net Burden of a Deductible Tax Dollar Paid by Households ($)
New England	54.1	.857
Connecticut	51.4	.850
Maine	56.7	.894
Massachusetts	57.5	.849
New Hampshire	39.8	.841
Rhode Island	54.6	.860
Vermont	46.3	.845
United States	48.1	.866

Source: Author's calculations; National Bureau of Economic Research Tax Simulation Model; and Robert Tannenwald, "Rating Massachusetts' Tax Competitiveness," *New England Economic Review*, November/December 1987.

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[1] Division of Local Services, Massachusetts Department of Revenue, unpublished data, and phone interviews with budget officials of other New England states.

[2] For further discussion of the distinction between a tax and a user charge, see U.S. Advisory Commission on Intergovernmental Relations (1987), Bird (1976), Mushkin and Bird (1972), and Fisher (1987).

[3] For the purposes of this article, own-source revenues are defined as taxes, charges, interest, special assessments, other and unallocable general revenues, utility revenue, and liquor store revenue. Federal aid and insurance trust fund revenues are excluded. Insurance trust fund revenues are excluded because they are not available for general purposes and their composition is partially constrained by federal law.

The U.S. Bureau of the Census does not classify utility revenue and liquor store revenue as "general own-source revenues." However, in so doing, the Census Bureau does not mean to imply that these revenue sources are unavailable for general purposes. Telephone interview with Ms. Donna Hirsch, Governments Division, U.S. Bureau of the Census, September 25, 1989. See also U.S. Bureau of the Census (1987).

[4] See Musgrave (1959, 1984) for further discussion of the distinction between private and collective goods.

[5] The consumption of some mixed goods and services imposes costs on others, that is, generates "negative" externalities. For example, the smoke from burning cigarettes poses a health threat to occupants of a crowded room. This article assumes that on net the externalities created by the consumption of publicly provided mixed services are positive.

[6] As pointed out by Downing and DiLorenzo (1981), the provision of water supply often entails decreasing rather than increasing costs.

[7] The Census Bureau defines public welfare very broadly to include all "support of and assistance to needy persons contingent upon their need." It includes all cash payments to such persons, vendor payments on their behalf made to private purveyors, and assistance in kind, such as services provided by publicly operated hospitals (U.S. Bureau of the Census 1987).

[8] The correlation coefficient between these two variables in 1986 is 0.75, significant at the .0001 level. Total spending excludes expenditures out of insurance trust funds.

[9] The simple correlation coefficient between the average net burden of a deductible tax dollar in state calendar year 1985 and the fraction of the state's household tax revenues accounted for by deductible taxes in state fiscal year 1986 is 0.56, significant at the .0001 level.

[10] For more on the dispute concerning the effect of deductibility on state and local revenue mix, see Feldstein and Metcalf (1986), Holtz-Eakin and Rosen (1987), and Kenyon (1986).

[11] The U.S. Bureau of Labor Statistics' more recent surveys do not go into sufficient detail to evaluate the distributional characteristics of major state and local user charges.

[12] The property tax was once considered by most economists to be regressive. However, the tax's distributional characteristics have always been difficult to evaluate because its burden can be shifted away from owners of taxable property to renters, to employees, to consumers, or, through behavior responses in capital markets, to all owners of capital. A number of prominent economists now believe that the property tax is proportional or progressive. See Aaron (1975) and Mieszkowski (1972).

Many states and municipalities mitigate the regressivity of their general sales taxes by excluding necessities, such as food and clothing. Massachusetts is a case in point. See U.S. Advisory Commission on Intergovernmental Relations (1987), Reschovsky (1987), and Reschovsky, Sass, and Tannenwald (1988).

[13] One might posit that this strong correlation simply reflects a strong correlation between the percentage of spending on sewerage financed through user charges and the importance of special districts in providing sewerage. Special districts are arguably more likely to impose user charges rather than taxes because they generally provide only one service. As a result, taxes, payments for public services in general, may seem a less appropriate means of raising revenues for special districts. However, empirical evidence does not support this hypothesis. The percentage of spending on sewerage provided by special districts is not significantly correlated with the percentage of spending on sewerage financed with user charges.

[14] See Holland and McCarney (1983) and Holland (1984) for a detailed analysis of differences between Massachusetts and other states in terms of reliance on user charges to finance specific services.

[15] The opposite may be true if nonresidents engage intensively in private transactions that are simple to tax, such as renting hotel rooms, dining in restaurants, purchasing retail goods, or purchasing seasonal housing. Under these circumstances, states and municipalities get nonresidents to help finance the provision of public services by levying room occupancy taxes, meal taxes, and retail sales taxes and property taxes. Such taxes are the only effective means to force nonresidents to share in the financing of collective services.

[16] Ladd and Wiest (1987) document in considerable detail how preoccupation with balance in state and local revenue systems can detract from attainment of important tax policy goals, such as efficiency, fairness, and competitiveness.

[17] In FY 1977, user charges accounted for 16.6 percent of the nation's state and local own-source revenues. By 1986, this percentage had risen to 22.2 percent. By comparison, in FY 1977, user charges accounted for 14.9 percent of New England's own-source revenues. By FY 1986 this percentage had risen to only 15.8 percent.

The growing gap between New England and the rest of the nation in dependence on user charges is attributable to trends at the state level. Between FY 1977 and FY 1986, the percentage of state own-source revenues accounted for by user charges rose from 9.5 percent to 11.9 percent. By comparison, in New England this

percentage fell from 13.2 percent to 10.7 percent. At the local level, the percentage of own-source revenues accounted for by user charges grew in both New England and the nation by about 8 percentage points (U.S. Bureau of the Census 1979, 1987). Most local governments around the nation were induced by the property tax revolt of the late 1970s and early 1980s to substitute user charges for property taxes. The political pressures inducing this substitution overwhelmed the effect of business conditions on the ratio of user charges to total own-source revenues at the local level.

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