



The Fiscal Impact of Potential Local-Option Taxes in Massachusetts

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Abstract

Municipal governments in Massachusetts have experienced difficulties raising adequate revenues to meet their expenditure needs. Responding to these challenges, policymakers have been investigating additional revenue sources for municipalities, such as new local-option taxes. Using a Representative Tax System approach and new data, this paper examines the impact of local-option taxes on meals, general sales, income, and payroll on revenue-raising capacity of Massachusetts municipalities.

This paper shows that new local-option taxes would help municipalities generate considerable additional revenues from untapped sources. However, revenue capacity from new local-option taxes is not evenly distributed across municipalities. Local-option tax capacity is concentrated in Boston suburbs and resort areas in eastern Massachusetts. On average, large cities would benefit more from local sales, meals, and payroll taxes than smaller towns. High-income, property-rich municipalities would gain more local-option tax capacity than low-income, property-poor municipalities. Local-option taxes also do not compensate municipalities in proportion to their loss of state aid dollars in FY 2009.

Local-option taxes are likely to exacerbate fiscal disparities, because municipalities with low existing revenue-raising capacity often lack the tax bases for new local-option taxes. Policymakers could consider increasing equalizing state aid to offset these fiscal disparities. If more aid is not forthcoming, this paper proposes that the state change aid formulas to reflect differences across municipalities in local-option tax capacity, and to better target fiscally distressed communities. These strategies—explored in the Massachusetts context—could also be useful in other states.

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Introduction

Municipal governments in Massachusetts, as in other states, have experienced difficulties raising adequate revenues to meet their expenditure needs. In the short term, they face deep cuts in state aid and a shrinking property tax base as a result of the decline in housing prices. In the long term, they face a structural fiscal imbalance, as spending on health insurance, employee pensions, and public education continues to grow at a faster pace than local revenue (Municipal Finance Task Force 2005; Bluestone, Clayton-Matthews, and Soule 2006; Dye 2008).

Responding to these challenges, Massachusetts policymakers have attempted to reduce local service costs and improve operational efficiency. Governor Deval Patrick signed two bills in 2007 allowing cities and towns to join the state's Group Insurance Commission, and to have the state manage underfunded or underperforming municipal pension funds. Meanwhile, cities and towns have increasingly participated in regional arrangements for providing services and sharing resources (O'Sullivan 2009). Many communities have also reduced local government payrolls and cut services (e.g., Laidler 2009).

Policymakers have also been investigating additional revenue sources for localities. Some local officials have been pursuing more state aid (Municipal Finance Task Force 2005; Massachusetts Taxpayers Foundation 2005, 2006). However, the state budget situation is very challenging, and prospects for more state aid in the near future are dim.

Other discussions have focused on adding or enhancing local-option taxes (Municipal Finance Task Force 2005; Gurley 2007).¹ Governor Patrick proposed in the 2007 Municipal Partnership Act that cities and towns be allowed to impose a local-option meals tax of up to 2 percent, and to increase the maximum tax rate for the existing local-option hotel and motel excise from 4 percent to 5 percent

¹ This is consistent with Yinger and Ladd (1989), who find that states see giving aid to localities and granting local governments more taxing authority as substitutes. However, Sokolow (1998) notes that local officials have tended to prefer receiving more state aid rather than increasing local taxing power.

(Massachusetts Governor's Office 2007).² The legislature did not pass those sections of the act.³ The enacted FY 2010 state budget, however, does allow cities and towns to impose a new local-option meals tax of up to 0.75 percent, on top of a 1.25 percentage point increase in the state meals tax.⁴ The budget also allows cities and towns to raise the local-option hotel and motel excise by 2 percentage points.

This paper investigates the fiscal implications of the new local-option meals tax, as well as three potential local-option taxes adopted by other states but not Massachusetts—on general sales, income, and payroll.⁵ The paper considers both the impact of new local-option taxes on average, and the distribution of the impact across communities.

The paper first examines the extent to which new local-option taxes would boost the revenue-raising capacity of local governments. That capacity is defined as the underlying ability of local governments to raise revenues from local sources (Bradbury and Zhao 2009). When measured under the Representative Tax System approach (see below), local revenue capacity is calculated as how much revenue a community could raise from its local tax bases at average, or “representative,” tax rates.

Second, this paper evaluates what types of communities would benefit most from new local-option taxes. How would revenue capacity from these new taxes vary with the geographic location, population, income and property wealth, and existing revenue capacity of cities and towns? Would new local-option taxes improve or exacerbate existing fiscal disparities among municipalities?

² In addition to the local-option hotel and motel excise, Massachusetts has a local-option jet fuel tax, enacted only by Bedford, Boston, Concord, Lexington, Lincoln, North Andover, Norwood, and Worcester.

³ This is consistent with the observation by Brunori (2007) that “state lawmakers have increasingly opposed new or enhanced local-option sales taxes throughout the United States. Between 2001 and 2007, for example, legislatures in 19 states rejected numerous efforts to allow or expand local-option sales tax authority, primarily because the business community joined with rural jurisdictions to oppose the measures” (p. 77).

⁴ The Associated Press (2009) reports that 65 Massachusetts cities and towns have adopted the local meals tax, as of December 5, 2009.

⁵ What local governments should tax is a question beyond the scope of this paper. Oates and Schwab (2004) examine whether local governments should tax property or income, and find inconclusive results.

Reschovsky (1983) states that “fiscal disparities exist when local governments, for reasons beyond their control, must levy different tax rates in order to provide the same level of public services. Conversely, fiscal disparities exist when a given tax rate does not enable some local governments to provide the same level of public services as other local governments” (p. 208). Fiscal disparities should be a concern for policymakers for two reasons. First, it is inequitable when two otherwise identical households or firms pay different amounts of taxes for the same level of local public services, or receive different levels of local services for the same taxes, simply because they are located in different communities (Yinger 1986). Second, when households and firms face such disparities, they may move from communities that are in a worse fiscal condition to those that are in better shape. Such movement could distort resource allocations and create economic inefficiencies (Downes and Pogue 1994).

The paper contributes to the research literature and the policy discussion in several ways. First, it updates previous studies with new data and an improved estimation method. It is the first study to use city- and town-level data on net Massachusetts adjusted gross income (net Massachusetts AGI) to examine a local-option income tax. Second, it uses a Geographic Information System to map the local-option tax capacity of Massachusetts cities and towns. Third, the paper compares the new local-option tax capacity with recent state aid cuts and a measure of existing local revenue capacity (without new local-option taxes) developed by Bradbury and Zhao (2009). Finally, this paper explores how the state could modify existing aid formulas to reduce fiscal disparities introduced by new local-option taxes.

Policy Background and Research Overview

All states do not allow local-option taxes. Mikesell (2009) reports that 36 states impose local general sales taxes. Among these states, the share of local tax revenues derived from the local sales tax ranged from 1.0 percent in Pennsylvania to

52.2 percent in Louisiana in FY 2006. According to Brunori (2007), 27 states allow local jurisdictions to impose a meals tax on the value of prepared food and drinks. Mikesell (2009) finds that 14 states collect revenues from local income or payroll taxes, with the resulting revenues ranging from 1.7 percent of local tax revenues (Iowa) to 33.1 percent (Maryland) in FY 2006.

Research Based on Data from Other States

Previous analyses have tended to focus on local-option sales taxes. They find mixed results regarding the impact of these taxes on local fiscal disparities.

Rubenstein and Freeman (2003) examine a local-option sales tax earmarked for education in Georgia. They show that sales tax bases are concentrated in heavily populated urban and suburban areas, which often have larger property tax bases. As a result, the local-option sales tax aggravates existing disparities in local property tax capacity. McGuire (2001) investigates the distribution of the local property, sales, and income tax bases in Illinois. Her paper shows that the tax bases of local sales and income taxes have greater disparities than the tax bases of local property taxes.

On the other hand, Zhao and Hou (2008) suggest that the reported distributional effects of local-option sales taxes could be sensitive to the approach used to measure local revenue capacity. Using Georgia data, they find that when they measure capacity using the Representative Tax System approach, introducing local-option sales taxes may not worsen fiscal disparities among local jurisdictions. Another recent study by Wang and Zhao (2008) finds a modest equalizing effect from a local-option sales tax earmarked for school facilities in North Carolina.

Other research on local-option taxes has focused on competition among local tax jurisdictions. Introducing local-option taxes can spur tax competition among communities because the activities underlying the tax bases are highly mobile, and local governments can choose whether to adopt the taxes, and can often set the tax rates.

Previous studies, including Mikesell (1970, 1971), Fox (1986), Walsh and Jones (1988), Beard, Gant, and Saba (1997), Nelson (2002), and Skidmore and Tosun (2007) provide evidence of a cross-border shopping effect. That occurs when consumers respond to differences in state or local tax rates by making cross-border purchases in locales with lower taxes.

To prevent the loss of retail sales and the associated tax bases, local governments often engage in tax competition with neighboring communities. Based on Tennessee data, Luna (2004) finds that local jurisdictions respond positively to sales tax increases in neighboring jurisdictions (by increasing their own taxes) in both the short and long run. Sjoquist et al. (2007) show that Georgia's county governments take longer to adopt a local-option sales tax when fewer neighbors have adopted it. However, Luna, Bruce, and Hawkins (2007) do not find such interdependence regarding when Tennessee's local governments choose to reach the maximum legal rate for a local sales tax.

While not investigated in this paper, the high volatility of local-option tax revenues is another concern to researchers and policymakers. Using Georgia data, Hou and Seligman (2007) show that revenues from sales taxes are less stable than property taxes, and therefore that adopting local-option sales taxes increases the volatility of local governments' own-source revenues. In a national study, Holcombe and Sobel (1995) find that income taxes are more cyclically variable and less predictable than sales taxes. Greater reliance on local-option taxes could therefore create fiscal difficulties for local governments during economic downturns, as their revenue collections could fall below their original forecasts.⁶

Previous Studies Based on Massachusetts Data

Reschovsky (1983) and Wooster (1987) provide the most relevant and in-depth analyses of local-option taxes in Massachusetts. Reschovsky (1983) compares

⁶ Brunori (2007) reviews other issues related to local-option taxes, such as regressivity, administrative efficiency, revenue growth, and outlook.

the distribution among Massachusetts cities and towns of potential revenues from local sales and payroll taxes, universally adopted at a 1 percent rate, with the distribution when state government pools revenues from these sources and redistributes them back to the cities and towns through the state's lottery aid formula. Lottery aid is the largest general-purpose state aid to municipalities in Massachusetts. It is regarded as equalizing aid, because the formula allocates aid inversely to the property tax base of each community. Reschovsky (1983) shows that fiscal disparities among local communities are greater when they raise—and keep—funds from local sales and payroll taxes than when the state pools the funds and distributes them according to the lottery aid formula.

Wooster (1987) updates Reschovsky's analysis, and furthers the discussion of local-option taxes by adding local income, real estate transfer, meals, and room occupancy taxes. He finds that at a 1 percent rate, local sales, income, payroll, and real estate transfer taxes generate substantially more revenues than local meals and room occupancy taxes. While revenues from all these taxes would be unevenly distributed across the state, low-yield taxes have a higher degree of dispersion. Wooster (1987) shows that adding local-option taxes exacerbates fiscal disparities within Massachusetts. However, he also recognizes that new local-option taxes could provide significant fiscal relief to some large, poor cities, which "might far outweigh the relative disadvantage to small communities" (p. 55).

Reschovsky (1983) and Wooster (1987) deserve some caveats. Both rely on "expert opinion" to estimate the sales tax base for individual communities. Lacking detailed data on retail subsectors, these authors estimate the share of taxable sales based on "a detailed analysis of the sales tax law and on discussions with representatives of various retail establishments" (Wooster 1987, p. 126).

Second, neither author has data on the local income tax base. Reschovsky (1983) does not conduct a statistical analysis of the local income tax. For a sample of 40 communities, Wooster (1987) regresses per capita revenues from the state personal income tax by community in FY 1986 on per capita personal income in 1973, percentage of total community households earning more than \$50,000 in 1979,

and a constant term. He then applies the regression coefficients to all 351 cities and towns to estimate their per capita local income tax revenue.

Research Methodology

This paper uses an approach called the Representative Tax System (RTS) to measure revenue capacity from new local-option taxes. The Advisory Commission on Intergovernmental Relations (ACIR) developed this approach to evaluate state revenue capacity (ACIR 1962, 1971, 1986). Researchers later applied the approach to local contexts (e.g., Bradbury et al. 1984). This application is usually considered appropriate because of the absence of institutional differences among local jurisdictions within a state, which would make cross-sectional comparisons difficult.

The RTS approach measures local tax capacity by applying average—or “representative”—tax rates to all tax bases that local governments are authorized to tax. Because these revenue estimates do not depend on whether a local government actually imposes these taxes, or at what rates the local government actually taxes the sources, the measured capacity is devoid of diminutions attributable to local tax policies. The RTS approach is simple, easy to implement, and widely accepted by researchers and policymakers. Downes and Pogue (1992), for example, recommend the use of RTS over alternative approaches, especially when the state designs an aid formula to reduce fiscal disparities. Reschovsky (1983) and Wooster (1987) essentially use the RTS approach, as both assume universal adoption of new local-option taxes at a 1 percent rate.

This paper compares the revenue capacity created by the new local-option taxes in Massachusetts to a measure of existing local revenue capacity (without new local-option taxes) recently developed by Bradbury and Zhao (2009).⁷ Bradbury and Zhao’s measure reflects the realities and constraints that local governments face in Massachusetts, and provides an indicator of existing fiscal disparities.

⁷ This paper does not consider the impact of local-option taxes on the property tax base and other existing local revenue sources. It also does not consider the impact of one local-option tax on another when municipalities adopt more than one.

Bradbury and Zhao's measure takes into account the constraints of Proposition 2½ (a local property tax limitation in Massachusetts) on local revenue capacity. Using municipal data and a regression method, Bradbury and Zhao investigate the relationship between residential property tax levies, residential property tax bases, and residents' incomes. They find that local governments in lower-income communities are more constrained by Proposition 2½. Based on the regression results, the authors construct a measure of per capita residential property tax capacity, which increases with per capita income and per capita residential property value. The authors then add revenue capacity from non-residential properties and authorized non-property-tax local sources, both of which are measured in the RTS approach. The non-property-tax revenue sources include motor vehicle excise, local-option hotel and motel excise, urban redevelopment excise, local share of racing taxes, and state payments in lieu of taxes for state-owned land.⁸

According to Bradbury and Zhao's (2009) measure, existing local revenue capacity varies widely among Massachusetts cities and towns. In 2008 dollars, per capita existing local revenue capacity at the 80th percentile of its distribution was twice per capita existing local revenue capacity at the 20th percentile (see Table 1).

Figure 1 shows the spatial distribution of per capita existing local revenue capacity by quintile in FY 2008. All cities and towns are ranked by per capita existing local revenue capacity, from lowest to highest, and a quintile is one-fifth of this distribution. As the figure shows, existing local revenue capacity is not evenly distributed in Massachusetts. Most high-capacity communities are located in the western suburbs of metropolitan Boston, on Cape Cod and the Islands, and in the southwest corner of the state, bordering New York and Connecticut. Low-capacity

⁸ Beyond total local revenue capacity (property tax capacity plus non-property-tax capacity) used in this paper, Bradbury and Zhao (2009) estimate non-school revenue capacity to provide the basis for a new non-school municipal aid formula. They subtract required local contributions to public schools and payments for services provided by other entities, such as regional transit and regional planning authorities, from total local revenue capacity.

communities tend to be concentrated in rural areas of western, central, and southeastern Massachusetts.

Data

This paper uses the most recent data at the time of analysis, and takes into account potential behavioral responses to new local-option taxes. Following Reschovsky (1983) and Wooster (1987), the paper assumes that all cities and towns adopt new local-option taxes at the same tax rates. Those rates are assumed to be 1 percent for local-option income and payroll taxes, and 0.75 percent for local-option meals and sales taxes, on top of the recently enacted 1.25-percentage-point increase in state sales tax. Tax bases may decrease in response to the new local taxes, but households are not likely to change their shopping, residence, and work locations within the state, because tax rates are the same across communities.⁹ Under the assumption that neighboring states do not change their tax rates, the paper adjusts the tax bases of border cities and towns whenever possible, to reflect the cross-border effect.

The paper uses data from the 2002 Economic Census (in which the U.S. Census Bureau profiles the national and local economies every five years), and FY 2008 state sales and meals tax collections, to estimate each community's sales and meals tax base in 2008. Unlike Reschovsky (1983) and Wooster (1987), who rely on "expert opinion" to estimate taxable sales, this paper uses the detailed retail categories from the 2002 Economic Census. This paper matches those categories with the taxable categories specified by the state sales tax law, and then sums them up to obtain the total taxable sales for each city or town. Taxable sales are then adjusted for the impact of higher after-tax prices for taxable goods for all cities and towns, and for the cross-border shopping effect for border cities and towns. (The appendix describes the estimation method in detail.)

⁹ This paper does not consider the impact of tax competition *within* the state. In reality, some cities and towns may not adopt these local-option taxes or set the same tax rates. That would affect the distribution of local-option tax bases among municipalities.

This paper uses 2006 city- and town-level data on net Massachusetts AGI as a proxy for the local income tax base.¹⁰ Municipalities that impose local income taxes usually make their income tax base identical to the state tax base, to avoid administrative and audit responsibilities. Reschovsky (1983) suggests that using AGI as a close proxy for taxable income is appropriate for a statistical analysis of the impact of a local income tax. Net Massachusetts AGI is a comprehensive measure of income that includes all forms of wage, pension, interest, business, investment, and capital gains incomes (Massachusetts Department of Education 2005).¹¹ Net Massachusetts AGI is somewhat broader than taxable income, however, because it does not recognize deductions or exemptions, for which no public data are available at the local level.

This paper differs from Wooster (1987), because it takes into account the response of the income tax base to an increase in the tax rate. Based on the estimated taxable income elasticity of -0.29 with respect to the state income tax rate by Long (1999),¹² adding a 1 percent income tax on top of the 5.3 percent state income tax would decrease the income tax base by 5.47 percent $((1.0/5.3)*(-0.29) = -5.47\%)$.¹³

A local payroll tax is defined here as a tax that local governments levy on the wages of employees who work in the municipality. This paper uses 2007 data on annual city- or town-level wages, and converts them to 2008 dollars using the Consumer Price Index.¹⁴ Following Haughwout et al. (2004), this paper assumes that

¹⁰ The Consumer Price Index is used to convert 2006 income into 2008 dollars.

¹¹ Net Massachusetts AGI is defined as income and long-term capital gains subject to the 5.3 percent state income tax rate, plus income subject to the 12 percent tax rate. It is equivalent to Massachusetts AGI less business losses. (For the definition of Massachusetts AGI, see Massachusetts Department of Revenue 2008a, p. 13.) The data are compiled by the Massachusetts Department of Revenue from state income tax returns, and the public data series begins in 2002.

¹² Unlike other studies, Long (1999) uses differences in state tax rates to identify the response of taxable income to changes in marginal tax rates.

¹³ This paper does not account for the potential border effect, because the author is unaware of any research quantifying the border effect for the income tax. The local income tax capacity measured in this paper should therefore be considered an upper bound, especially for border cities and towns.

¹⁴ The 2007 annual wage information is missing for New Braintree because of the confidentiality restriction. This information is imputed by adjusting New Braintree's annual wages for 2005—the most recent year with available data—by the growth rate of its county's total wages from 2005 to 2007.

the per capita wage does not change with the imposition of a local payroll tax. Haughwout et al. (2004) is the only paper found that estimates the elasticity of the per capita wage with respect to changes in the wage tax rate in the United States. The authors find that the wage elasticity is not statistically different from zero in Philadelphia.¹⁵

Results

This paper calculates the per capita local-option tax capacity for each of the 351 cities and towns in Massachusetts in 2008, as summarized in Table 1. Not surprisingly, among the possible new local-option taxes, the local income tax has the highest revenue potential, and the local meals tax has the lowest revenue potential. Average local income tax capacity is about 20 percent of the average existing local revenue capacity, whereas the local meals tax would boost revenue capacity by less than 1 percent. The degree of dispersion is high for local-option taxes, indicating large differentials in local-option tax capacity across cities and towns. Except for the local income tax, measures of the capacity from each of the new local-option taxes have a higher ratio of capacity in the 80th percentile to that in the 20th percentile than existing local revenue capacity.

The correlations between new local-option taxes are mostly positive, implying that new local-option tax capacities tend to cluster (see Table 2). Municipalities with higher local payroll tax capacity are likely to have higher local sales, meals, and income tax capacity. This finding reflects the fact that retail stores, food services, and drinking places are often located in or near job centers, and that people tend to live close to their workplace. The correlation between local sales tax and local meals tax is also positive and fairly high, because restaurants and bars are often clustered with retail stores. On the other hand, local income tax surprisingly bears no relationship with local sales or meals tax. This is presumably because high-

¹⁵ The result from Haughwout et al. (2004) might not apply to Massachusetts, because the effect could vary from state to state. In addition, the current paper does not adjust for potential employment relocations across the state border and associated wage losses, because existing literature is silent on the border effect for the payroll tax.

income municipalities tend to be “bedroom communities” with relatively strict zoning regulations on commercial development.

Local-option tax capacity is not evenly distributed across the state. Local sales and meals tax capacity is higher in urban, suburban, and resort areas in eastern Massachusetts, and lower in rural areas in western Massachusetts, except in the Connecticut River Valley and Great Barrington–Pittsfield corridors, which are more urban and have relatively more resort businesses (see Figures 2 and 3).

Local income and payroll tax capacity is even more geographically concentrated (see Figures 4 and 5). Almost all the communities with the highest income tax capacity are Boston suburbs, while most cities and towns in western, central, and southern Massachusetts, and even some on Cape Cod, have low local income tax capacity.

Local payroll tax capacity is heavily concentrated in and around the three largest cities (Boston, Worcester, and Springfield), where most jobs in Massachusetts are located. In contrast, most central and western areas have fewer non-farm jobs relative to the rest of the state, and thus lack local payroll tax capacity. Figure 6 compares the spatial distributions between local payroll tax capacity and local income tax capacity. As the figure shows, large cities with a higher job concentration but not a high income level, such as Boston, Worcester, Springfield, and Fall River, fare better in local payroll tax than in local income tax.

Local-option tax capacity varies with the population of municipalities (see Table 3). The largest cities average higher local payroll tax capacity but lower local income tax capacity relative to most smaller municipalities, consistent with Figure 6. The largest municipalities, on average, do better in local sales and meals taxes, because they often have more retail and food and drinking establishments.

The lowest-income municipalities benefit the least from new local-option taxes (see Table 4). The average per capita local-option tax capacity in the bottom income quintile is lower than that in other income quintiles. In contrast, the local sales tax capacity is more concentrated in middle-income communities.

Property-poor municipalities gain less from local-option taxes than property-rich communities (see Table 5). Equalized valuation (EQV) provides a measure of property wealth by presenting the state government's estimate of fair cash value of all taxable property in each municipality. With the exception of local payroll tax, average local-option tax capacity is the lowest among municipalities with the lowest EQVs. The correlations between local-option taxes and EQV are all positive and highly significant.

New local-option taxes are likely to exacerbate existing fiscal disparities. New local-option tax capacities are all positively and significantly correlated with existing local revenue capacity (see Table 6). Because existing capacity is an indicator of local fiscal health, communities in the lowest quintile for existing capacity are the most fiscally distressed and need the most help. However, municipalities in the bottom quintile for existing capacity almost always have the lowest local-option tax capacity. Their average capacity is so low that it is close to or less than half the average among municipalities in the top quintile.

New local-option taxes do not compensate municipalities in proportion to their loss of state aid. In FY 2009, the state cut general-purpose aid (lottery aid and additional assistance) by 9.74 percent for all cities and towns. That reduction translated into different dollar amounts of lost state aid among municipalities, depending on the original amount of aid. Cities and towns subject to the largest aid cuts usually do not gain the most revenue capacity from new local-option taxes (see Table 7). In contrast, municipalities that lost the fewest aid dollars benefit the most from the local income tax as well as the newly enacted local meals tax.

Policy Discussion

New local-option taxes give municipalities access to additional revenue sources, and can help them overcome fiscal difficulties. However, such taxes often do not significantly benefit municipalities with low existing tax capacity. This paper

shows that local-option taxes would likely exacerbate fiscal disparities across the state.

To address fiscal disparities, policymakers may wish to consider increasing the amount of equalizing aid. For example, the state may wish to increase lottery aid, which targets property-poor municipalities.¹⁶ Nonetheless, considering the state's own fiscal woes, this approach does not seem realistic in the near term—especially because the state recently cut municipal aid, and does not seem in a position to provide new aid anytime soon.

A more feasible approach to addressing fiscal disparities is to change the state aid formula to target fiscally distressed communities more strongly. The current lottery aid formula, which is seen as equalizing aid, considers only EQV in measuring local revenue capacity. It does not take into account local revenue sources other than property taxes, or the constraints of Proposition 2½.

Instead of using only EQV, policymakers could adopt a more comprehensive measure of revenue capacity, such as the one developed by Bradbury and Zhao (2009). Any comprehensive measure should include revenue capacity from new local-option taxes (e.g., the newly enacted local-option meals tax) once they are authorized by the state. In doing so, the aid formula would explicitly recognize that cities and towns have different local-option tax capacities, and that their relative fiscal positions would shift with these new taxes. State aid would therefore be more equalizing, and more targeted to low-capacity communities.

¹⁶ To fund additional aid, the state may consider recapturing a portion of the new local-option tax revenue and redistributing it through state aid formulas. In an extreme case, the state may simply increase the state income, sales, and meals taxes, instead of allowing municipalities to impose local-option taxes, and then distribute the additional tax proceeds through the lottery aid formula or another equalizing aid formula.

Conclusion

This paper examines the fiscal impact of local-option taxes in Massachusetts, and provides several pieces of new empirical evidence:

- * New local-option taxes help municipalities generate considerable additional revenues from untapped sources. Large cities would particularly benefit from local sales, meals, and payroll taxes.
- * Local-option tax capacity is geographically concentrated. In general, Boston suburbs and resort areas in eastern Massachusetts have greater capacity than rural towns in western Massachusetts.
- * Low-income, property-poor municipalities would gain less revenue capacity from local-option taxes than high-income, property-rich municipalities.
- * Municipalities subject to the largest state aid cuts in FY 2009 usually do not gain the most revenue capacity from new local-option taxes.
- * Local-option taxes are likely to exacerbate fiscal disparities, because municipalities with low existing revenue capacity often lack the tax bases for new local-option taxes.

Policymakers should consider fiscal disparities when proposing new local-option taxes. They could increase equalizing state aid to offset local fiscal disparities. If additional aid is not forthcoming, this paper proposes that the state change aid formulas to reflect differences in local-option tax capacity across municipalities, and to better target low-capacity communities. These strategies—explored in the Massachusetts context—could also be useful in other states.

Table 1. Summary Statistics of Local-Option Tax Capacity across 351 Cities and Towns in Massachusetts (per capita, in 2008 dollars)

| | Mean | Median | Standard Deviation | 80% / 20% |
|---------------------------------|-------|--------|-----------------------|-----------|
| Local Sales Tax Capacity | 93 | 80 | 70 | 2.20 |
| Local Meals Tax Capacity | 15 | 12 | 9 | 2.54 |
| Local Income Tax Capacity | 335 | 287 | 225 | 1.98 |
| Local Payroll Tax Capacity | 283 | 184 | 235 | 3.77 |
| Existing Local Revenue Capacity | 1,610 | 1,535 | 835 | 2.07 |

Note: Figures are weighted by population.

80% / 20% = the ratio of the 80th percentile to the 20th percentile.

Table 2. Correlations between New Local-Option Taxes

| | Local Sales Tax Capacity | | Local Meals Tax Capacity | | Local Income Tax Capacity | | Local Payroll Tax Capacity |
|----------------------------|-----------------------------|-----|-----------------------------|-----|------------------------------|-----|-------------------------------|
| Local Sales Tax Capacity | 1.00 | | | | | | |
| Local Meals Tax Capacity | 0.48 | *** | 1.00 | | | | |
| Local Income Tax Capacity | -0.01 | | 0.02 | | 1.00 | | |
| Local Payroll Tax Capacity | 0.23 | *** | 0.63 | *** | 0.16 | *** | 1.00 |

Note: Figures are weighted by population.

* Statistically significant at 10%

** Statistically significant at 5%

*** Statistically significant at 1%

Table 3. Distribution of Local-Option Tax Capacity by Population Quintile(per capita, in 2008 dollars)

| | Lowest Population Quintile | Second- Lowest Population Quintile | Middle Population Quintile | Fourth-Highest Population Quintile | Highest Population Quintile | Correlation with Population Size |
|----------------------------|----------------------------------|---|----------------------------------|--|-----------------------------------|--|
| Local Sales Tax Capacity | 25 | 85 | 84 | 94 | 97 | -0.07 |
| Local Meals Tax Capacity | 3 | 13 | 12 | 13 | 16 | 0.51 *** |
| Local Income Tax Capacity | 244 | 426 | 397 | 392 | 299 | -0.05 |
| Local Payroll Tax Capacity | 57 | 167 | 159 | 234 | 336 | 0.64 *** |

Note: Figures are weighted by population.

* Statistically significant at 10%

** Statistically significant at 5%

*** Statistically significant at 1%

Table 4. Distribution of Local-Option Tax Capacity by Income Quintile (per capita, in 2008 dollars)

| | Lowest Income Quintile | Second-Lowest Income Quintile | Middle Income Quintile | Fourth-Highest Income Quintile | Highest Income Quintile | Correlation with Income |
|----------------------------|------------------------|-------------------------------|------------------------|--------------------------------|-------------------------|-------------------------|
| Local Sales Tax Capacity | 75 | 80 | 116 | 124 | 84 | 0.05 |
| Local Meals Tax Capacity | 10 | 19 | 17 | 17 | 12 | 0.01 |
| Local Income Tax Capacity | 177 | 287 | 280 | 354 | 687 | 0.91 *** |
| Local Payroll Tax Capacity | 173 | 379 | 246 | 338 | 302 | 0.16 *** |

Note: Figures are weighted by population. Income quintiles are based on the 2000 Census.

* Statistically significant at 10%

** Statistically significant at 5%

*** Statistically significant at 1%

Table 5. Distribution of Local-Option Tax Capacity by EQV Quintile (per capita, in 2008 dollars)

| | Lowest EQV Quintile | Second- Lowest EQV Quintile | Middle EQV Quintile | Fourth- Highest EQV Quintile | Highest EQV Quintile | Correlation with EQV | |
|----------------------------|------------------------|-----------------------------------|------------------------|------------------------------------|----------------------------|-------------------------|-----|
| Local Sales Tax Capacity | 71 | 79 | 98 | 121 | 92 | 0.13 | ** |
| Local Meals Tax Capacity | 10 | 11 | 14 | 20 | 19 | 0.37 | *** |
| Local Income Tax Capacity | 184 | 260 | 314 | 380 | 673 | 0.39 | *** |
| Local Payroll Tax Capacity | 163 | 152 | 269 | 478 | 309 | 0.11 | ** |

Note: Figures are weighted by population.

EQV = equalized valuation.

* Statistically significant at 10%

** Statistically significant at 5%

*** Statistically significant at 1%

Table 6. Distribution of Local-Option Tax Capacity by Quintile for Existing Revenue Capacity(per capita, in 2008 dollars)

| | Fourth-Highest | | | | | Correlation with Existing Capacity | |
|----------------------------|--|--|--|-----------------------------------|---|--|-----|
| | Lowest Existing- Capacity Quintile | Second-Lowest Existing- Capacity Quintile | Middle Existing- Capacity Quintile | Existing- Capacity Quintile | Highest Existing- Capacity Quintile | | |
| Local Sales Tax Capacity | 66 | 82 | 109 | 116 | 95 | 0.17 | *** |
| Local Meals Tax Capacity | 9 | 11 | 15 | 20 | 18 | 0.39 | *** |
| Local Income Tax Capacity | 180 | 253 | 309 | 370 | 692 | 0.70 | *** |
| Local Payroll Tax Capacity | 162 | 157 | 229 | 461 | 378 | 0.26 | *** |

Note: Figures are weighted by population.

* Statistically significant at 10%

** Statistically significant at 5%

*** Statistically significant at 1%

Table 7. Distribution of Local-Option Tax Capacity by Quintile for State Aid Cut (per capita, in 2008 dollars)

| | Fourth-Highest | | | | | Correlation with Aid Cut |
|----------------------------|----------------------------|-----------------------------------|----------------------------|---------------------|------------------------------|-----------------------------|
| | Lowest Aid-Cut Quintile | Second-Lowest Aid-Cut Quintile | Middle Aid-Cut Quintile | Aid-Cut Quintile | Highest Aid- Cut Quintile | |
| Local Sales Tax Capacity | 93 | 94 | 116 | 101 | 85 | -0.15 ** |
| Local Meals Tax Capacity | 17 | 13 | 13 | 13 | 16 | 0.18 *** |
| Local Income Tax Capacity | 679 | 386 | 368 | 297 | 245 | -0.41 *** |
| Local Payroll Tax Capacity | 302 | 191 | 252 | 206 | 337 | 0.33 *** |

Note: Figures are weighted by population.

* Statistically significant at 10%

** Statistically significant at 5%

*** Statistically significant at 1%

Figure 1. Existing Local Revenue Capacity of Massachusetts Cities and Towns
(per capita, in 2008 dollars)

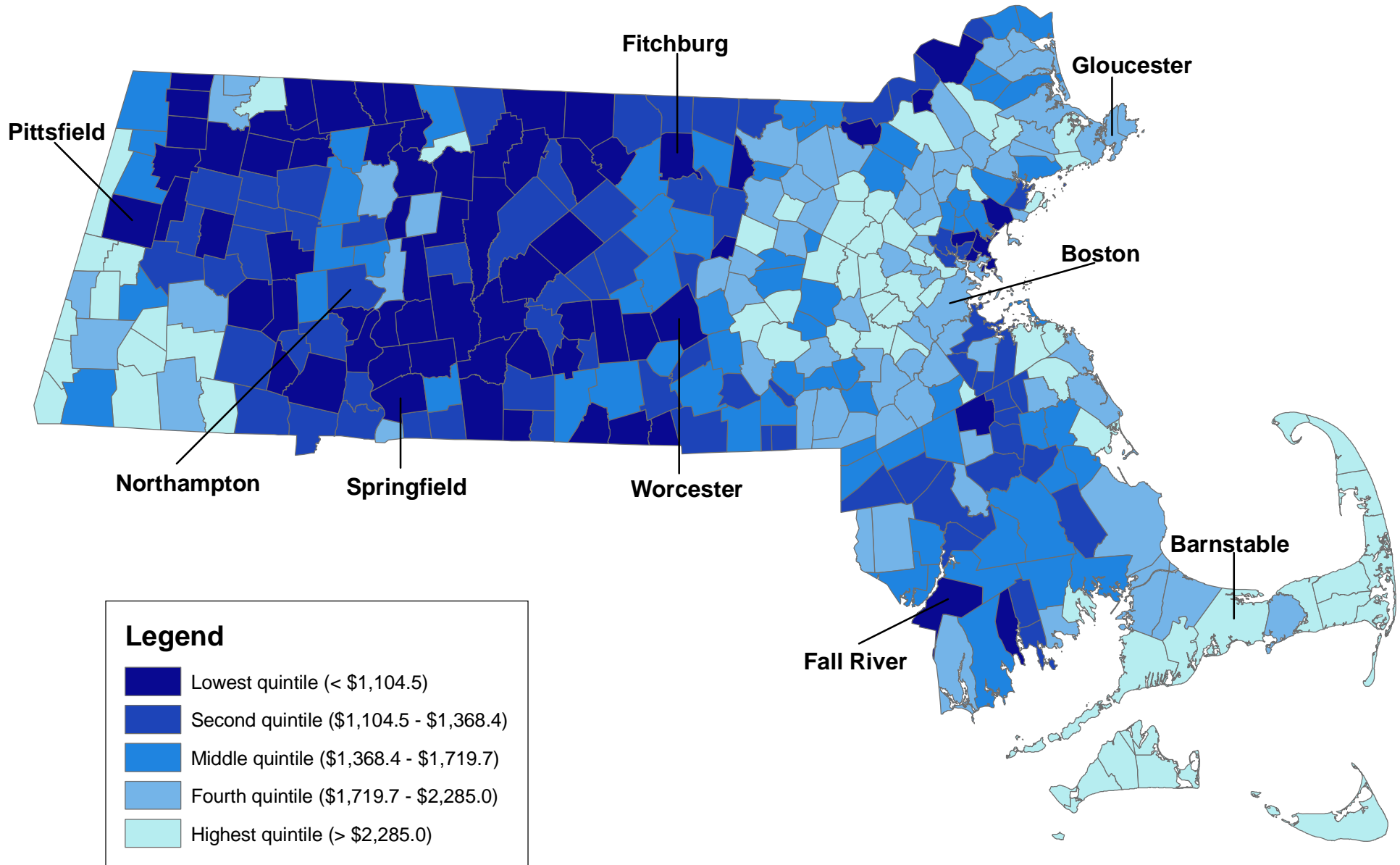


Figure 2. Local Sales Tax Capacity of Massachusetts Cities and Towns
(per capita, in 2008 dollars)

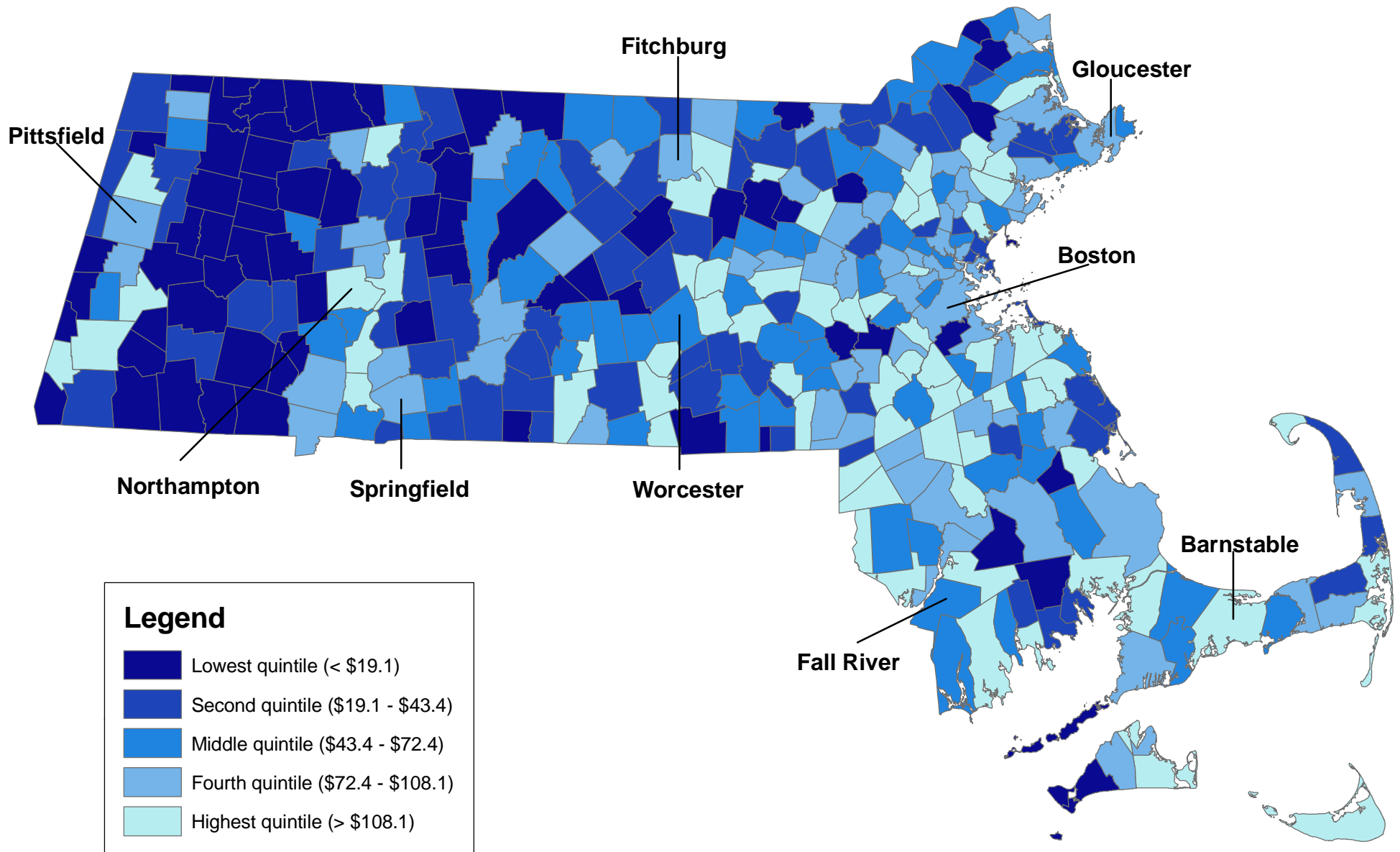


Figure 3. Local Meals Tax Capacity of Massachusetts Cities and Towns
(per capita, in 2008 dollars)

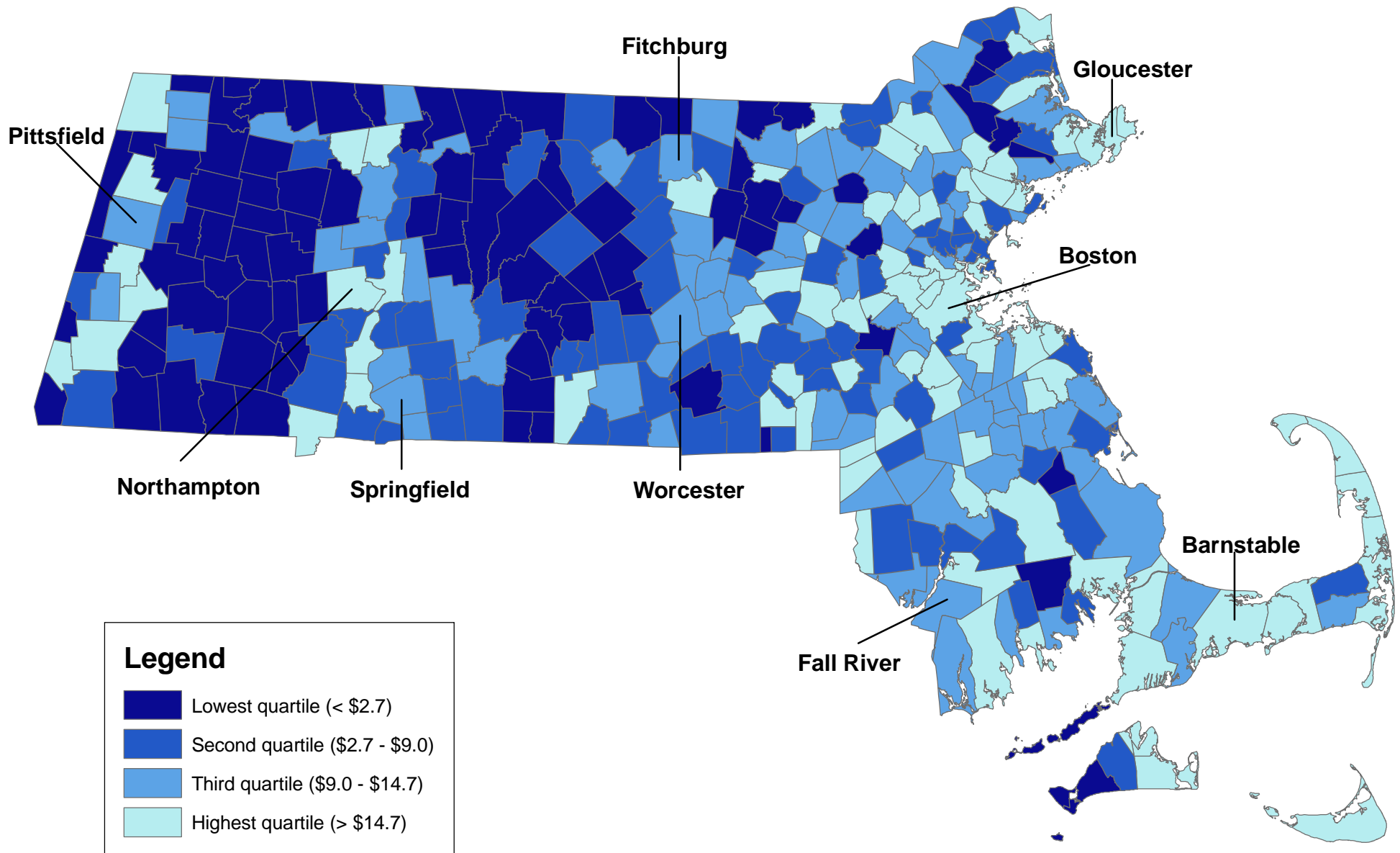


Figure 4. Local Income Tax Capacity of Massachusetts Cities and Towns
(per capita, in 2008 dollars)

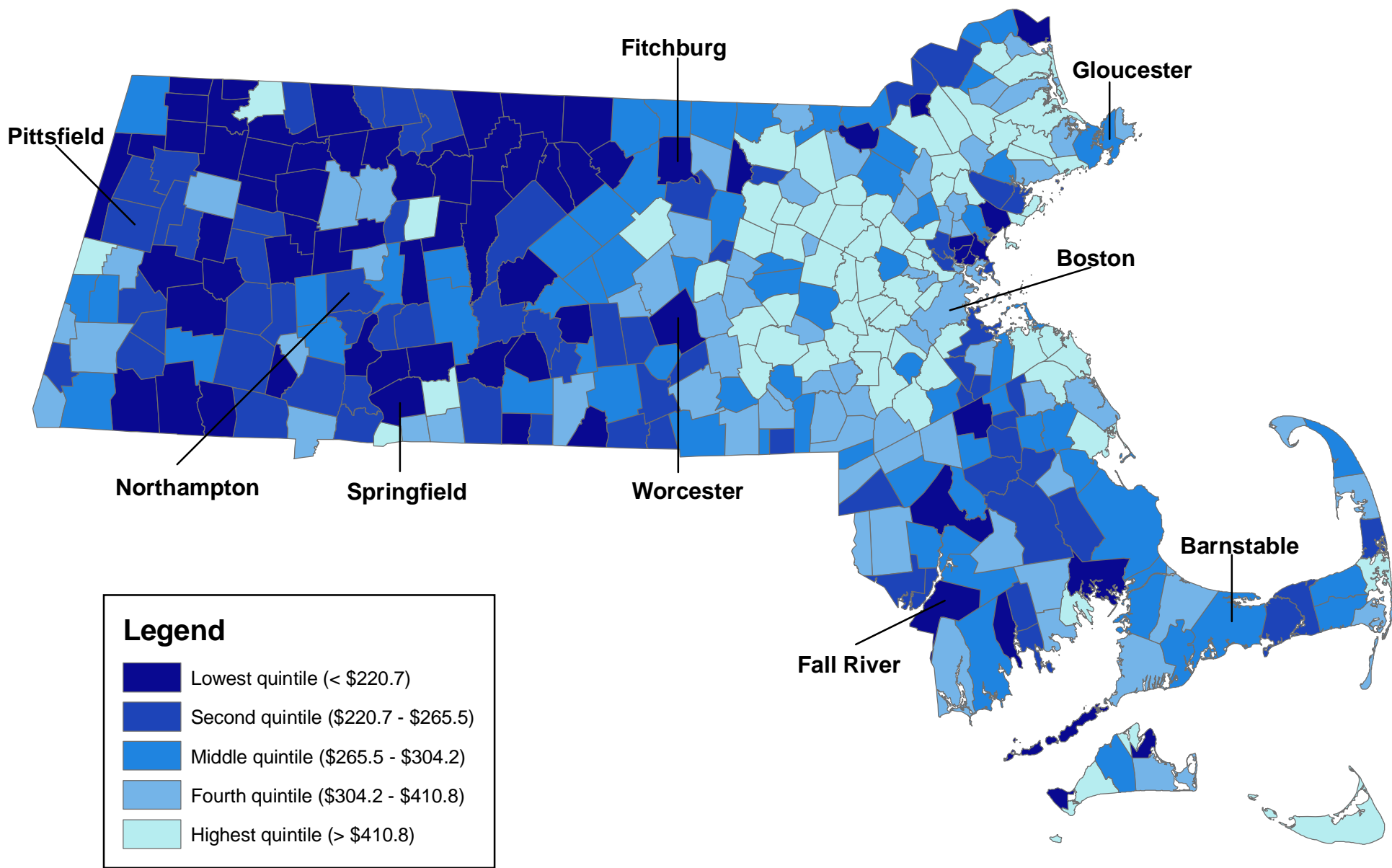


Figure 5. Local Payroll Tax Capacity of Massachusetts Cities and Towns
(per capita, in 2008 dollars)

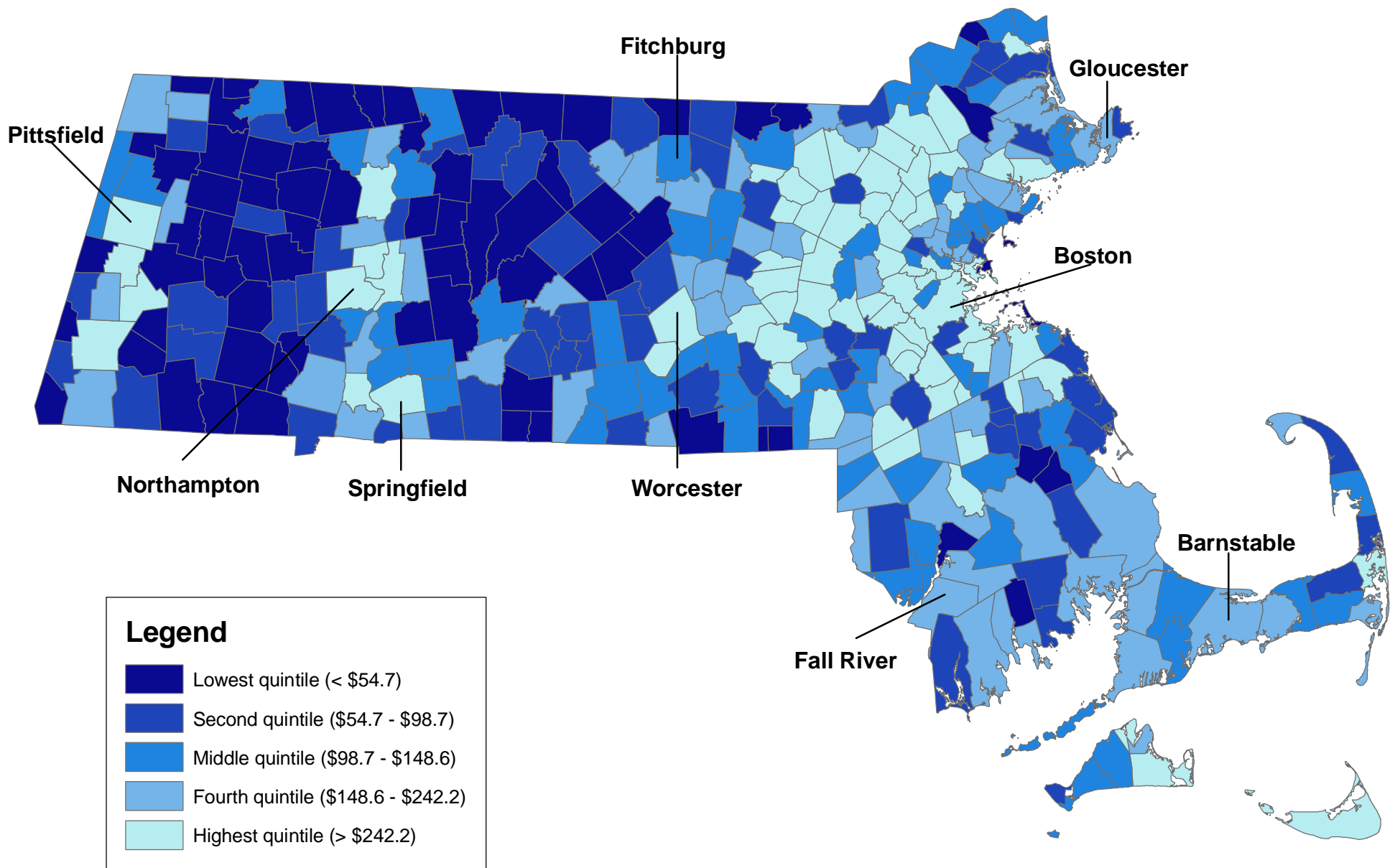
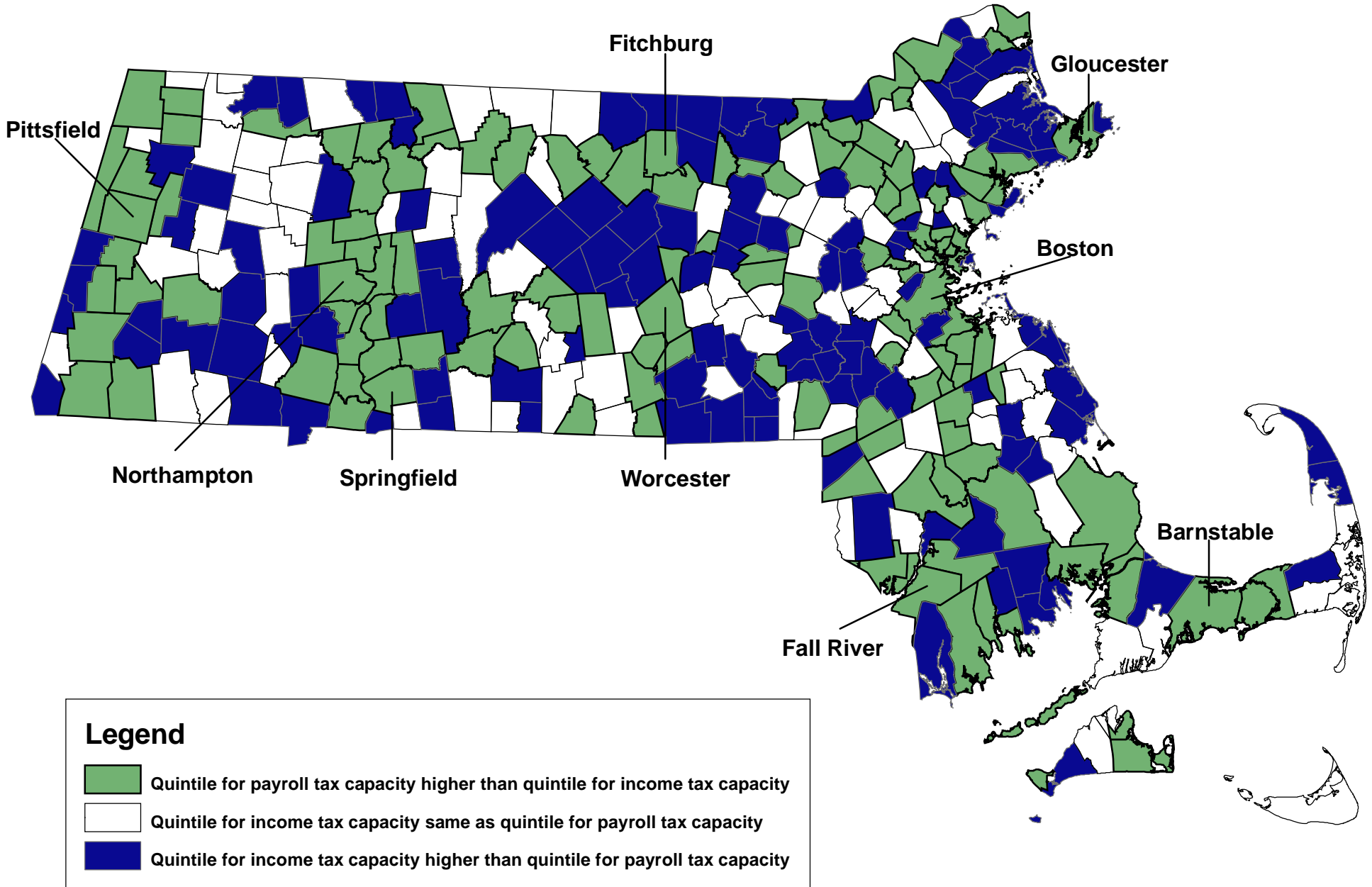


Figure 6. Comparison of Quintiles for Local Payroll Tax Capacity with Quintiles for Local Income Tax Capacity



Appendix: Methodology for Estimating Local Sales and Meals Tax Bases

This paper uses data on the retail trade as well as the food service and drinking places sectors from the 2002 Economic Census to estimate the sales tax base in each municipality as a share of the total statewide tax base.¹⁷ The share is assumed to be unchanged from 2002 to 2008. Because the 2002 Economic Census contains a detailed report on retail trade subcategories, that allows this paper to single out the taxable categories specified by the state sales tax law, and to sum them up to obtain the total taxable sales (Massachusetts Department of Revenue 2008b).

The 2002 Economic Census covers the 173 large cities and towns in Massachusetts with populations of 2,500 or more, and lumps smaller municipalities into a category within each county labeled “balance.” For some larger municipalities, sales data on certain taxable retail subsectors are withheld to avoid disclosing information on individual firms, although the withheld sales are included in county- and state-level totals. To estimate the sales of municipalities lacking retail data, this paper uses data on municipality-level retail establishments available for large municipalities in the Economic Census.

First, the total amount of sales in large municipalities that lack retail data are calculated by deducting the amount of reported sales in other municipalities from the county total. This calculated total is distributed among the large municipalities that lack retail data in proportion to their establishment numbers within each county, and within each taxable category. Finally, all estimated or reported sales in every taxable category are summed up, to obtain total taxable sales for each large municipality.

For smaller municipalities that are lumped into the “balance” category in each county, this paper first adds up the county’s “balance” across taxable categories,

¹⁷ Following Reschovsky (1983) and Wooster (1987), this paper does not use data on wholesale transactions from the Economic Census, because state law exempts most of those transactions from the sales tax. However, wholesale purchases by certain buyers are subject to the sales tax (Massachusetts Department of Revenue 2008b). Because the Economic Census does not report wholesale trade by type of buyer, this paper has no information on which wholesale transactions are taxable. By not accounting for taxable wholesales, this paper may underestimate the sales tax base in municipalities that have more taxable wholesale transactions than other municipalities.

to calculate the total taxable sales of all small municipalities in each county. This total is then distributed among these small municipalities within each county in proportion to their jobs in the retail and the food services and drinking places sectors in 2002. The jobs data are from the Employment and Wages file (ES-202) compiled by the Massachusetts Executive Office of Labor and Workforce Development. Finally, this paper divides the total taxable sales of each of the 351 municipalities by the state total, to obtain each municipality's share of the state's taxable sales.

This paper relies on data from the FY 2008 state sales tax collection to estimate the statewide sales tax base. The statewide sales tax collection in each of the four major categories—regular, service, meals, and motor vehicles—is divided by 0.05 (the then-state sales tax rate).

This paper accounts for the price effect on the sales tax base caused by tax rate hikes. The price effect occurs when consumers reduce purchases in response to higher after-tax prices. The state sales tax rate rises from 5 percent to 6.25 percent in FY 2010. In addition to this increase, the paper assumes a local sales tax increase of 0.75 percentage points.¹⁸ The combined two-percentage-point increase in the sales tax rate means that after-tax prices would increase 1.9 percent. Sales in the categories of motor vehicle, meals, regular, and services would therefore decline by 1.66 percent, 1.32 percent, and 1.90 percent, respectively, based on a price elasticity of demand of -0.87 for motor vehicles (McCarthy 1996), -0.692 for food away from home (Reed, Levedahl, and Hallahan 2005), and -1.00 for regular sales and services (Wooster 1987).¹⁹ The adjusted statewide taxable sales are then multiplied by each municipality's share estimated from the 2002 Economic Census to obtain each municipality's taxable sales.

¹⁸ This paper assumes that the local-option sales tax rate is 0.75 percent—the same as the local-option meals tax rate authorized by the FY 2010 state budget.

¹⁹ Levinsohn (1988) estimates a price elasticity of demand of -0.8 for motor vehicles, which is similar to the -0.87 price elasticity used in this paper. Lamm (1982) and Nayga and Capps (1992) estimate a price elasticity of demand for food away from home of -0.701 and -0.745, respectively, similar to the -0.692 price elasticity used in this paper. Wooster (1987) assumes that a price elasticity of demand for taxable goods other than motor vehicles and meals is -1.

Finally, this paper takes into account the cross-border shopping effect.²⁰ Fox (1986) finds that with a one-percentage-point increase in the sales tax rate, local jurisdictions along the state border would lose 1.06 –3.56 percent of taxable sales.²¹ Based on an average of the two estimates (i.e., 2.31 percent), taxable sales in each of the 62 border cities and towns in Massachusetts would decrease by another 4.62 percent.²²

The meals tax base of each municipality is estimated following the above procedures, with two differences.²³ One difference is that this paper uses only sales and employment data in the food service and drinking places sector.²⁴ The other difference is that this paper does not adjust for the border effect for meals, because Fox (1986) finds no evidence of cross-border shopping for food away from home.

²⁰ Retail sales include some purchases by small businesses and institutional clients. One might expect cross-border shopping to affect these retail sales differently from retail sales to the general public, because tax enforcement is more effective for business purchases than for household purchases. However, this paper does not separate the two cross-border effects, because no data are available at the city and town level on the percentage of retail sales purchased by businesses and institutional clients, and the percentage purchased by the general public. Likewise, the research literature does not provide separate estimates of the cross-border shopping effect on business and household purchases.

²¹ Fox (1986), Beard, Gant, and Saba (1997), Walsh and Jones (1988), Nelson (2002), and Skidmore and Tosun (2007) also provide evidence of cross-border shopping for specific goods, such as beer and liquor, cigarettes, and motor fuel.

²² Anecdotes suggest that some residents of interior cities and towns in Massachusetts also shop in New Hampshire to avoid the Massachusetts sales tax. Nonetheless, the cross-border shopping from these residents may not be significant enough to affect taxable sales. Using West Virginia data, Walsh and Jones (1988) support this conclusion when they find no significant cross-border shopping from interior counties.

²³ The Massachusetts Department of Revenue (2009) uses two methods to estimate the potential revenue of each municipality from a local-option meals tax. One method is based on meals tax returns, and the other is based on data from the 2002 Economic Census. The 2009 DOR study notes that “in some cases the estimates based on meals tax returns may be more accurate, especially where Census data on sales and the number of food service establishments were unavailable” (p. 2). However, the study points out the limitations of the tax return data, and states that “DOR returns data does not well represent the amounts of economic activity taking place in any particular city or town” (p. 1). The study therefore suggests that the Census-based estimates are usually preferable. Differing from this paper, Massachusetts Department of Revenue (2009) distributes the “balance” of each county in proportion to each city or town’s total population.

²⁴ For some small municipalities, data on employment in the food services and drinking places subsector are withheld to avoid disclosing confidential information on individual firms. This paper assumes that these communities have no food services and drinking places. In doing so, this paper underestimates the meals tax base of these municipalities.

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