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Massachusetts Business Taxes: Unfair? Inadequate? Uncompetitive?

Robert Tannenwald

Abstract:

In debating Massachusetts business tax policy, protagonists have cited many different indicators purporting to assess the fairness, adequacy, and competitiveness of the Commonwealth's business taxes. These statistics actually reveal very little about the degree to which Massachusetts business taxes achieve these widely accepted tax policy goals. The author explains why these indicators are misleading and presents new indicators of business tax competitiveness that, although imperfect, are more accurate than those most widely quoted. The article concludes that the fairness of Massachusetts business taxes is unclear and that the Commonwealth's corporate income taxes are inadequate. The clearest conclusion drawn is that Massachusetts business taxes do not harm its competitive standing.

JEL Classification: H25, H71, O10

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Massachusetts policymakers have vigorously debated the optimal level of state and local business taxes since the founding of the Commonwealth. Lately, they have focused on three concerns about these taxes: Are they “fair”? Are they “adequate”? and Are they “competitive”? Tax reformers have argued that businesses are not paying their fair share and that the Commonwealth could tax firms more heavily without damaging its competitive standing. Reformers have also contended that long-term competitive pressures to keep taxes low and increasingly aggressive tax avoidance efforts have diminished the yield of the corporate excise tax so much that the ensuing revenue squeeze is seriously impeding state and local governments from meeting the demands of constituents for public services. By contrast, business groups contend that many employers would shrink their operations or would relocate if their taxes were increased. Some such groups also contend that state and local governments have sufficient revenues to meet the demands of their constituents. To them, the chief fiscal problem is wasteful spending, not inadequate revenue.

For those who have struggled to give policymakers lucid, impartial insights into these issues, recent developments have been discouraging. Sparring interest groups have spawned a thicket of statistics whose derivation is not always clearly explained and whose significance and relevance are sometimes difficult to fathom. Consequently, many policymakers have trouble making sense of the jumble of testimony, reports, tables, and charts that are presented to them by lobbyists across the political spectrum.

This paper aims to clarify recent debate about the fairness, adequacy, and competitiveness of state and local business taxation in Massachusetts. It evaluates the validity of indicators prominently cited in this debate and offers two new indicators of business tax competitiveness. Section I defines a business tax and briefly explains the concepts of fairness, adequacy, and competitiveness in the context of business taxation. Section II presents and assesses indicators recently used in Massachusetts to evaluate the Commonwealth’s business taxes in general, and its corporate excise tax in particular, according to these three normative tax policy goals. Section III presents two new

indicators of tax competitiveness and and applies them to business taxation in the 50 states in order to assess the competitiveness of Massachusetts business taxes. Section IV summarizes and offers suggestions for further research.

The article finds evidence that the adequacy of the Massachusetts corporate excise tax has diminished in recent years. Evidence concerning the fairness of this tax, as well as the fairness and adequacy of the Commonwealth's business taxes in general, is inconclusive. The clearest conclusion drawn is that, taken as a whole, Massachusetts business taxes do not diminish the Commonwealth's competitive standing.

I. Background

A "business" tax is one that a private firm, as opposed to a household, is legally obliged to pay. A clear example is the corporate income tax. By contrast, a property tax on owner-occupied housing is a "household" tax.¹

What are the principal attributes of an equitable, adequate, competitive business tax?

Equity

Standards of tax fairness are inherently subjective. Nevertheless, two abstract norms of equity enjoy widespread acceptance: the "ability to pay" principle and the "benefit" principle (Musgrave and Musgrave 1984). According to the former, tax burdens should be distributed among households according to their ability to bear

¹Distinguishing and measuring business taxes is especially difficult when taxpayers are both households and business owners. Consider, for example, the income tax liability of a household owning an unincorporated family business. The business's profits are a component of the household's total taxable income, which includes wages and salaries, interest income from savings accounts, dividends, and other sources of income. Since many state income tax rates are graduated, the amount of income tax paid on the profits would depend on whether the profits are considered to be the "first dollars" earned by the household or the "last dollars" earned. If the last dollars earned, the tax on the profits would be higher. As discussed in Section III, this measurement issue has become increasingly serious in recent years because the percentage of businesses choosing not to incorporate, at least for the purposes of taxation, has risen dramatically.

them.² According to the latter, the distribution of tax burdens should reflect the distribution of benefits conferred by governmental services.

Economists have difficulty applying principles of equity to business taxes because, in reality, people, not businesses, bear tax burdens. Businesses are groups of people organized to produce goods, to distribute goods, or to provide services. Consequently, while the financial officer of a business might write checks to the taxing authorities, the burden of a business tax is actually borne by business owners, business employees, business customers, or business suppliers in the short run. In the long run, these people will attempt to shift the burden of the tax to others by changing their behavior. Consequently, one can determine the ultimate incidence of the tax only after analyzing (or, in the absence of evidence, assuming) how everyone adjusts to it and how prices change as a result.³

Some have argued that the benefit principle is easier to apply to business taxes than is the ability-to-pay principle because one can think of many public services as inputs to the production process. (For example, see Oakland 1992.) Just as firms must purchase labor and capital from factor markets, arguably they should also pay for those public services that enhance their capacity to produce and, therefore, to generate profits. Granted, to the extent that public services augment profit, their benefits also ultimately redound to people—businesses owners, business customers (if businesses elect to pass

² The manner in which this ability should be measured is very controversial. Some feel that ability to pay should be measured by income, others by consumption. Another controversial issue is the period of time over which ability to pay should be measured. Should income or consumption be measured on an annual basis? A lifetime basis? Some interval in between? There are no “right” answers to these questions.

³ Although difficult, such analysis has been done. The Institute on Taxation and Economic Policy (ITEP) (2003) has evaluated the distribution of state and local tax burdens across annual income classes in all 50 states, taking into account tax shifting and the exporting of tax burdens to residents of other states. ITEP has evaluated the incidence of three state and local business taxes: corporate income taxes, taxes on nonresidential property, and general sales taxes on business inputs. In general, ITEP has found that the former two are progressive (their burden rises as income rises), while the latter is regressive (its burden falls as income rises). See also the Minnesota Department of Revenue (2003) for a similar analysis of taxes in the state of Minnesota. The appropriate definition of a “household” for the purpose of evaluating tax equity is also contentious.

on public benefits in the form of lower prices), or workers (if employers pass on public benefits in the form of higher labor compensation).⁴ Consequently, as is the case for the ability-to-pay principle, tax shifting complicates the application of the benefit principle. Nevertheless, one can reasonably assume that public benefits initially conferred on business are shifted in a manner similar to the manner in which business taxes are shifted. Consequently, if public benefits and the business taxes of a particular jurisdiction match up well at the firm level, one can reasonably assume that they match up well at the individual level as well and, therefore, are equitable according to the benefit principle.

Adequacy

An adequate tax produces revenues that over the long run grow at roughly the same rate as the cost of meeting the public's demand for public services. Since what constitutes an optimal level of public services is a subjective issue, applying the adequacy principle is also difficult and contentious. According to the Cato Institute, the fact that aggregate per capita state spending has grown more rapidly than inflation during the past three decades is evidence that state governments have spent excessively (Stansel and Moore 1999; Edwards et al. 2003). Other groups, such as the Center for Budget and Policy Priorities (CBPP), have argued that constant inflation-adjusted per capita growth is too stringent a standard of adequacy. Rather, state spending "naturally" grows with the economy. Moreover, argues CBPP, new federal mandates, the soaring cost of health care, and increasing demand for public education have compelled state and local governments to increase the share of the nation's economic resources that they command (McNichol and Carey 2002). As with fairness, adequacy is largely in the eye of the beholder.

It is difficult for a tax to remain adequate over the long run unless its base keeps pace with the demand for public services, however defined. If tax policymakers must

⁴For attempts to evaluate the incidence of the benefits of public services among households, see Musgrave, Case, and Leonard (1974) and Reynolds and Smolensky (1977).

continually increase the tax's statutory rate to satisfy this demand, then eventually the tax will create undesirable economic distortions, forcing policymakers to scale back the tax rate or narrow the tax base. The adequacy of a tax is usually questioned when long-run economic, social, and political forces erode its base or compel policymakers to cut its statutory rate extensively. For example, some have argued that the adequacy of the general sales tax has diminished over the past two decades because households have substituted services, which are generally not taxed, for goods, which are usually taxed, in their mix of consumption (Bruce and Fox 2000). As another example, discussed more extensively below, some have alleged that mounting interjurisdictional competitive pressures, among other factors, have compelled many states to narrow the base and/or to reduce the rate of their corporate income tax to the point where the revenues produced by the tax have become inadequate.

Competitiveness

A competitive tax promotes a jurisdiction's economic growth by enhancing its ability to attract and retain geographically mobile capital, labor, and consumption. In recent decades, concern about business tax competitiveness has intensified as technological and regulatory changes have increased the mobility and geographic range of employers. The resulting pressure on state and local governments to compete more aggressively is partially responsible for renewed interest in indicators of state and local business tax burdens. Reports of intensified efforts to avoid corporate income taxes (for example, Pomp 1998, Fox and Luna 2002, Mazerov 2000, and the Multistate Tax Commission 2003) have also stimulated this interest. The severe fiscal crisis that has confronted several states over the past three fiscal years has led policymakers to consider increasing taxes on business as a means of raising additional revenue. Business groups have mounted a vigorous opposing campaign in most states, stressing potential damage to their state's competitive standing.

The shifting of tax burdens complicates the evaluation of tax competitiveness, just as it does the evaluation of tax fairness. Other things being equal, firms will upgrade

their evaluation of a location's business tax climate if they believe that economic conditions prevailing at that location facilitate tax shifting. For example, suppose that a nationwide chain of restaurants specializing in Indian cuisine is seeking sites for new facilities. At site A, although business taxes are relatively high, unions are relatively weak and labor regulations are relatively lax. Furthermore, the restaurant chain believes that the demand for Indian food at this site is relatively price inelastic, perhaps because the population surrounding the site has a high concentration of people of Indian descent. Consequently, the restaurant chain believes that if it were to locate there, it would be able to shift a significant portion of its business taxes backward onto its workers or forward onto its customers. By contrast, at site B, although business taxes are slightly lower, unions are strong, labor regulations are strict, and perceived demand for Indian food is more price elastic. As a result, the restaurant chain perceives tax shifting options to be more limited. Under these conditions, the chain might rate the business tax climate of site A higher than that of site B even though business taxes are higher at site A than at site B.

Nevertheless, every indicator of business tax competitiveness assessed in this article is predicated on the assumption that state and local business taxes are not shifted; that is, their burden is borne solely by business owners. Indicators based on this assumption are useful for several reasons. First, in making their tax systems more competitive, state and local governments are especially interested in attracting and retaining a subset of firms whose ability to shift their taxes forward is relatively limited. These businesses—those selling their products in multistate markets—are highly valued because they “import” income into the states in which they are located, thereby driving the growth of secondary and tertiary industries (such as suppliers, wholesalers, and retail and service establishments). Firms selling into such geographically broad markets are wary of shifting their taxes forward because they fear that their customers might switch their patronage to competitor producers who could gain market share by offering lower

prices.⁵ Second, while conditions in some states may be more conducive to tax shifting than conditions in others, evidence quantifying interstate differences in such conditions is not available and, indeed, may be impossible to obtain.⁶ In the absence of such evidence, the assumption of no interstate differences in tax shifting potential is as good as any. Third, when comparing states in terms of business tax competitiveness, business groups assume, explicitly or implicitly, that business owners bear the entire burden of state and local business taxes. By embracing this assumption, therefore, one can evaluate the implications of these groups' analyses for the tax competitiveness of particular states. Although such groups often contend that their state's business taxes are not competitive, sometimes their own data, when carefully analyzed, suggest otherwise. If such discrepancies exist, policymakers should be aware of them.

II. An Assessment of Indicators of State and Local Business Tax Levels Frequently Cited in Recent Policy Debate in Massachusetts

Protagonists in the recent debate about tax policy in Massachusetts have cited several indicators purporting to evaluate the fairness, adequacy, and competitiveness of the Commonwealth's business taxes in general and its corporate excise tax in particular. The same indicators have been cited in similar debates at statehouses throughout the nation. This article evaluates four of them.

Two indicators, featured in the writing and public testimony of the Massachusetts Budget and Policy Center (MBPC) (St. George and McLynch 2003, Massachusetts Budget

⁵ However, in theory, such firms are not limited in their relative ability to shift business taxes backward onto labor.

⁶ The task of analyzing interstate differences in conditions for tax shifting is further complicated by the fact that in theory when businesses relocate they affect their ability to shift taxes at their new location in ways that they do not anticipate initially. If a state attracts firms by lowering its business taxes, the influx of employers will augment the demand for labor within the state, driving up wages. In other words, the ability of firms to shift their tax burden back to labor is diminished as the ratio of capital to labor rises. This effect may be viewed as a desirable sharing of the benefits of greater tax competitiveness between capital and labor. However, because the magnitude of this effect is difficult to determine in advance of relocation, it greatly complicates the relationship between business tax shifting and business tax competitiveness.

and Policy Center 2003), focus solely on the corporate excise tax.⁷ These indicators are as follows: (1) the share of total state tax revenues accounted for by the corporate excise tax (corporate excise share, Figure 1) and (2) corporate excise tax receipts per \$1,000 of personal income (corporate excise burden, Figure 2). MBPC has cited declining trends in both statistics as evidence that the tax has become increasingly unfair and inadequate.⁸ Another statistic, figuring prominently in publications and testimony of the Massachusetts Taxpayers Foundation (MTF), is total receipts from all corporate income taxes (not just the corporate excise tax) per \$1,000 of personal income (corporate income tax burden, Figure 3).⁹ According to MTF, the relatively high ranking of Massachusetts by this statistic in fiscal year 2000 shows that heavy corporate income tax burdens are a competitive liability to the Commonwealth (Massachusetts Taxpayers Foundation et al. 2003).

The fourth indicator, often cited by the Associated Industries of Massachusetts

⁷ This tax, which applies to most corporations doing business within the Commonwealth, has two components. The larger component is a tax on profits, levied at a statutory rate of 9.5 percent. The smaller component is a tax on either personal property or net worth, levied at a rate of \$2.60 per \$1,000. Personal property is essentially machinery and equipment, as opposed to real property, which consists primarily of land and structures. Under current laws and regulations, corporate taxpayers can choose either base of this component. In FY1999, the latest year for which data are available, the profits component accounted for approximately 80 percent of total corporate excise tax collections. Corporate excise taxpayers are also subject to a minimum tax of \$456 (Massachusetts Department of Revenue 2003). Because the bulk of corporate excise tax revenues are collected from the profits tax component, the U.S. Census Bureau classifies the tax as a corporate income tax.

The tax is called an “excise” tax because it was originally conceived of as a price that corporations should pay for the privilege of doing business within the Commonwealth under the special protections afforded by incorporation. One of the meanings of the word “excise” is a tax on privileges.

⁸The glossary on page 44 presents shortened names for the indicators analyzed in this article.

⁹ In addition to the corporate excise tax, Massachusetts imposes the following other three corporate income taxes: a tax on the net income of most financial institutions (the “bank excise”); a constellation of taxes applying to selected public utilities and urban development organizations (the “public service excises”); and a constellation of taxes on the investment income of certain insurance companies (the investment privilege component of the “insurance excises”). See Commonwealth of Massachusetts, Department of Revenue (2002), pp. 54-67.

(AIM), is all business taxes (not just corporate income taxes) as a share of total state and local tax receipts (business share or BSH, Figure 4). AIM emphasizes that corporate income taxes are only a small fraction of all taxes that Massachusetts businesses are legally obliged to pay. AIM has not clarified what this finding implies about the fairness, adequacy, or competitiveness of Massachusetts business taxes. However, as discussed below, in one of its reports, the organization implied that BSH is primarily an indicator of business tax competitiveness and that, since BSH in Massachusetts is “substantial,” the Commonwealth’s business taxes are a competitive liability (Saviano and Cline 2003).

Adequacy and Fairness

Consider the two indicators of adequacy and fairness cited by MBPC. The organization noted that between FY1968 and FY2002 the corporate excise share fell from over 16 percent to just over 4 percent (Figure 1), and the corporate excise burden fell from \$7.43 per \$1,000 of personal income to \$2.36 per \$1,000 (Figure 2). The fall in corporate excise tax burden took place primarily after FY1986, when corporate tax incentives proliferated and efforts by corporations to avoid the obligation to pay state and local corporate taxes reportedly intensified. (See Fox and Luna 2002.) After tracing these declining trends, MBPC stated that “one of the principal causes of Massachusetts’ ...inability to maintain existing service levels with current revenue streams...is the state’s vanishing corporate income tax ,” (p. 1). In this statement, the organization implied that public service provision below “existing levels” is inadequate. MBPC interpreted the sharp decrease in the corporate excise burden as evidence that “a large amount of economic activity in Massachusetts was not subject to the state corporate income tax” (and, presumably, a smaller amount is now taxed than used to be taxed when the burden was much higher). Such base erosion is the hallmark of an inadequate tax. Finally, MBPC exhorted tax policymakers and officials to rescind business tax incentives and to adopt stricter enforcement policies “to ensure that

profitable businesses pay their fair share of taxes,” implying that this share is unfairly low.

Both MBPC indicators are potentially biased by their failure to take into account *all* state and local corporate income taxes (as does MTF), not just the corporate excise tax. As noted in footnote 9, one of these taxes is the bank excise tax. During the 1990s, the Commonwealth took some financial institutions off the rolls of the corporate excise tax and put them on the rolls of the bank excise tax.¹⁰ Furthermore, banks’ share of the Massachusetts economy has grown considerably over the past 35 years. Thus, in theory, the declining corporate excise share and burden could have been offset by an increasing bank tax share and burden.

As AIM has pointed out, MBPC also does not take into account the possibility that some disappearing corporate taxable income has reappeared in the base of the Commonwealth’s personal income tax as “pass-through” income. Such income consists of profits earned by a corporation or by an unincorporated enterprise and allocated to the enterprise’s owners for tax purposes. Although these profits are not subject to the corporate excise tax, the owners report them on their personal income tax returns. In this respect, the income of these enterprises is taxed in the same manner as that of general partnerships. Examples of such enterprises include Subchapter S corporations, limited liability corporations (LLCs), and limited liability partnerships (LLPs). LLCs and LLPs were not recognized in Massachusetts for state tax purposes until 1996. Changes in federal income tax law induced a large wave of conversions from regular corporate to Subchapter S status during the last half of the 1980s.

The denominator of corporate excise share, total *state* taxes, is also a potential source of bias because it is narrowly defined. One should analyze trends in business income taxes as a share of *all state and local* taxes, not just of *state* taxes. During the past 25 to 30 years, Massachusetts state government has assumed a larger share of the Commonwealth’s total state and local fiscal responsibilities—in part because Proposition

¹⁰ See Commonwealth of Massachusetts, *The General Laws of Massachusetts*, Chapter 81 of the Acts of 1995.

2-1/2, a property tax limitation, has compelled state government to take more fiscal responsibility for public schooling. While in FY1968 state government collected 48 percent of state and local taxes in the Commonwealth, by FY2000 this percentage had risen to 67 percent. Thus, while taxes on business income may have declined as a fraction of total state taxes, state taxes may have increased as a fraction of all state and local taxes. As result, the fraction of the total state and local fiscal pie accounted for by taxes on business income may be unchanged or have even grown.

Furthermore, one should not exclude *fees and charges* from the denominator of the share variable. These sources of revenue accounted for over 25 percent of the Commonwealth's state and local "own-source" revenues in FY2000.¹¹ By comparison, they accounted for only 13 percent in FY1968. Therefore, failure to consider fees and charges could lead one to underestimate the decline in the role of business income taxes in financing the Commonwealth's state and local governments.

Finally, it is misleading to compare values of corporate excise burden and corporate excise share in FY1968, a year of economic expansion in the Commonwealth, with values in FY2002, a year of economic contraction. During periods of economic weakness, profits, a relatively volatile flow, usually shrink far more than the bases of other major taxes, such as the personal income tax or retail sales tax. Conversely, when the economy is growing rapidly, growth in corporate profits usually outpaces growth in other tax bases. Thus, some of the declines in corporate excise burden and corporate excise share between FY1968 and FY2002 can be attributed to cyclical influences. However, the business cycle cannot explain the low values of these indicators (by historical standards) over the past two fiscal years, nor their declines between the mid 1980s and mid 1990s, two expansionary periods.

Figures 5 and 6 attempt to correct for these various potential sources of bias in corporate excise burden and corporate excise share. Figure 5 displays indexes of corporate excise burden and corporate income tax burden from FY1968 to FY2004, with

¹¹ State and local "own-source" revenues are revenues that state and local governments raise on their own authority. They exclude federal aid.

values for FY1982 set equal to one. The figure also displays a comparable index for the ratio of all business income taxes to personal income (business income tax burden). The numerator of this ratio includes not only corporate income taxes but estimated personal income taxes on income earned by Subchapter S corporations, LLCs, LLPs, other types of partnerships, and sole proprietorships. Because of data limitations, the index of business income tax burden is reported only for selected years between FY1982 and FY2003. Figure 6 plots comparable historical trends for indexes of corporate excise share, corporate income tax share, and business income tax share. The denominator in the share variables is state and local own-source receipts, not state tax receipts.

These burden and share variables, modified along the lines suggested above, do, in fact, trace different historical patterns than those of unmodified corporate excise burden and corporate excise share between FY1968 and FY1986. During this period, while corporate excise burden held steady and corporate excise share trended downward, the four other expanded indicators trended upward. However, all six measures plummeted between FY1987 and FY1992, reversed only a fraction of their decline over the ensuing nine years, and plummeted again in FY2002.¹² While these measures have risen since FY2002, all except business income tax share and corporate excise tax share are currently below their FY1992 levels. Among the series with data back through the late 1960s, all four are well below their values in FY1968, the year chosen by the MPBC as its benchmark. (Business income tax burden and share are below their FY1982 values.)

Thus, the trends of the expanded measures are consistent with MPBC's analysis. Yet, in order for arguments concerning the adequacy and fairness of the corporate excise tax to be valid—or in order to apply MBPC's arguments to all business income taxes—MBPC should justify its choice of FY1968 as its benchmark year. With respect to adequacy, is the demand for state and local public services the same now as it was 36 years ago? Or did state and local government become so bloated during the 1970s and 1980s that slowing growth in business income taxes over the past 15 to 20 years has

¹²The sharp decline in the six indicators from FY1987 to FY1992 partially reflects cyclical influences.

helped to eliminate unwanted and unnecessary government programs? As for fairness, has the match between benefits received by business and income taxes paid by business deteriorated since FY1968? Perhaps 36 years ago business income taxes paid were higher than the business benefits received. If so, then the declines depicted in Figures 1 through 3, 5, and 6 may indicate that benefits and business income taxes have become more closely aligned, rendering these taxes more equitable, not less.

While adequacy may be subjective, few would argue that Massachusetts residents would have wanted to shrink the percentage of their personal income that they devote to state and local public services as sharply as the corporate income tax burden has fallen over the past 36 years. In FY2004, this burden was estimated to be only 60 percent of its FY1968 level. Yet, during this period, the public demand for many state and local public services, such as education, health care, corrections, and public safety, has grown considerably. Trends in the burden of total own-source revenues do not indicate a broad-based movement to take a large chunk of economic resources out of state and local government. The burden of own-source revenues other than corporate income taxes was about the same in FY2004 as in FY1968, while in FY2004 the burden of own-source revenues other than business income taxes was only slightly below its FY1982 level. (Again, recall that FY1982 is the earliest year for which the author has estimates of business income taxes.) Thus, the steep declines in the corporate income tax burden and the business income tax burden in recent decades imply that these taxes are inadequate.

Evidence from other states within New England lends support to MPBC's claim that nationwide influences are eroding the bases of Massachusetts corporate income taxes. If MBPC's diagnosis of the sources of this erosion is accurate, patterns displayed in the Commonwealth's historical corporate income tax statistics should be evident in those of other states. In three of the other five states within the region, both the corporate income tax burden and the corporate income tax share were considerably lower on average during the 1990s than they had been over the course of the late 1960s, 1970s, and 1980s (Figures 7 and 8). The declines in these two indicators were especially sharp in

Connecticut, which enacted a personal income tax during the early 1990s to deal with a serious fiscal crisis. The state has cut its statutory corporate income tax rate, once the second highest in the nation, significantly over the past 15 years. The two exceptions are New Hampshire and Maine. New Hampshire has raised its corporate taxes, largely in response to a series of State Supreme Court decisions invalidating local property taxes as a means of financing public primary and secondary education. These decisions, which in effect direct the state to fund a larger share of public schooling, have forced the state to consider implementing a broad-based income tax or sales tax. (See Swaine 2000.) Rather than reform its tax system so drastically, New Hampshire has chosen to raise its existing state taxes, including business taxes. Maine has been reluctant to reduce its reliance on the corporate income tax because, according to U.S. Census data, its combined personal income and property tax burden (total receipts from these two taxes as percentage of residents' personal income) was the second highest in the nation in FY2000.¹³

In the nation as a whole, the corporate income tax burden and corporate income tax share were about the same in FY2000 as they were in FY1968 (Figures 3, 7, and 8). However, since many fewer states had corporate income taxes 34 years ago than today, comparisons between the two years do not accurately gauge the strength of trends in base erosion. Between FY1987 and FY2002, a period during which interstate competition and corporate tax avoidance allegedly intensified but the number of states imposing corporate income taxes did not change, the nation's corporate income tax burden declined, albeit not as sharply as in Massachusetts. This decline suggests that erosion of state and local corporate income tax bases has been a nationwide phenomenon.

While strong circumstantial evidence suggests that Massachusetts corporate income taxes have become less adequate, one cannot so readily infer that these taxes have

¹³The corporate income tax burden and corporate income tax share of all the New England states except New Hampshire fell sharply from FY2000 to FY2002, largely because this period encompassed the latest recession.

become less fair according to the benefit principle. Whether they have is hard to evaluate in large part because dividing the benefits of state and local public services between businesses and households is extremely difficult.¹⁴ However, a comparison of the Massachusetts corporate income tax share with that of the nation since FY1968 suggests that this share may have been unfairly high in the Commonwealth back then. As shown in Figure 8, in FY1968 the corporate income tax share in the Commonwealth was more than twice as high as in the nation as a whole. It is unlikely that the proportion of public benefits enjoyed by Massachusetts corporations in FY1968 was more than twice the proportion enjoyed by corporations nationwide. Thus, the dramatic narrowing of the gap between the corporate income tax shares of Massachusetts and the nation could indicate improvement over time in the aggregate match between benefits received and taxes paid. If so, then perhaps the Commonwealth's corporate income taxes have become more equitable, not less.

While this match may have improved in the aggregate, it may have deteriorated for individual corporations. The income taxes that some corporations pay may still be higher than the public benefits they receive, while other corporations may pay little or no income tax while still receiving substantial public benefits. This may be the case because, as MBPC has pointed out, all corporations do not have equal access to the tax benefits that the Commonwealth has enacted in recent years. For example, single factor apportionment based on sales is most beneficial to corporations that produce their

¹⁴ See Oakland and Testa (1998) for state-by-state estimates of the split between the value of services benefiting businesses and the value of services benefiting households.

products primarily in Massachusetts but sell them to customers located elsewhere.¹⁵ Corporations whose operations and customers are located solely within the Commonwealth do not benefit from this new tax feature at all. In addition, large multistate corporations are able take advantage of tax avoidance techniques that involve the “shifting” of taxable income from affiliates located in high-tax states to those located in low-tax states. Corporations whose entire operations and clientele are located within a single state cannot reduce their taxes in this manner. Consequently, an improved match between taxes paid and benefits received in the aggregate could be masking an unfair redistribution of the tax burden away from multistate firms toward small in-state firms. However, since firm-specific data on taxes paid and benefits received are not available, it is unclear whether corporate income taxes or business income taxes have become more or less fair.

Moreover, in evaluating the extent to which businesses pay taxes in proportion to governmental benefits received, why limit oneself to corporate income taxes or even business income taxes? As a report commissioned by the Council on State Taxation (COST) has emphasized, these taxes account for only about 8 percent of U.S. state and local business tax liabilities (Cline et al. 2003a). Businesses also pay property taxes, sales taxes on inputs, license taxes, excise taxes, unemployment insurance taxes, workers compensation premiums, and a host of additional smaller taxes to state and local governments. According to the COST study, the property tax accounted for the largest

¹⁵ Single factor apportionment based on sales (SFAS) is a formula used by states to determine for the purposes of corporate income taxation their share of the taxable profits of a multistate corporation, that is, one that operates or sells or produces in more than one state. In Massachusetts, manufacturers and mutual fund managers use this formula. According to it, the Commonwealth’s share of a corporation’s taxable income is equal to the share of the corporation’s total receipts earned from transactions taking place within the Commonwealth’s borders. Consequently, a manufacturer with all of its production facilities located in Massachusetts that sells all of its products to customers located outside of the Commonwealth would have no taxable profits in the Commonwealth. Under alternative apportionment formulas, which give some weight to the fraction of the corporation’s payroll or property located within the taxing state, the manufacturer would have some taxable profits in Massachusetts. Under all apportionment formulas, including SFAS, a manufacturer with all of its production facilities and sales located in Massachusetts must pay the Commonwealth’s corporate income tax on all of its taxable income.

percentage of state and local business taxes nationwide (38 percent) in FY2003. Perhaps the historical trends in these other business taxes have differed significantly from those of corporate and business income taxes. If so, then the share of state and local own-source revenues accounted for by *all* business taxes might be smaller in Massachusetts than in the rest of the nation, calling into question the assertion that the Commonwealth's businesses as a whole have borne more than their "fair share" of taxes.

Data needed to test this hypothesis are scarce. In 2003, AIM commissioned a study to analyze state and local taxes paid by Massachusetts businesses (Saviano and Cline 2003). Although the authors of the AIM study never fully describe their methodology, it appears to be similar to that used in their comparable nationwide COST study. According to AIM, corporate income taxes accounted for 11 percent of all Massachusetts business taxes in FY2001, while property taxes accounted for 44 percent.

AIM's historical series for Massachusetts business taxes goes back only to FY1991. In that year, and over the ensuing 10 years, the share of the Commonwealth's total state and local taxes that was paid by businesses, excluding personal income taxes paid on business profits (business share, or BSH), was consistently lower than the nation's (Figure 4). This gap exhibited an erratic trend, sometimes narrowing and sometimes widening, and ranged from 2.5 to 6 percentage points. The historical pattern of expanded business share (EBSH), including personal income taxes paid on business profits, exhibited similar results (Figure 9). Thus, if the nationwide BSH or EBSH is the benchmark for Massachusetts business tax fairness according to the benefit principle, then Massachusetts businesses as a whole did not pay their fair share during the FY1991-FY2001 period. However, one cannot draw clear conclusions without firm-specific estimates of tax burdens borne relative to state and local public benefits received and an analysis of the historical trends in these firm-specific relationships.

***Competitiveness, Corporate Income Tax Burden, Business Share,
and Expanded Business Share***

As alluded to earlier in this section, MTF gauged the competitiveness of Massachusetts business taxes by computing the relative corporate income tax burden. It pointed out that in FY2000 (the latest year for which state-specific data are available) this burden stood 26 percent higher than the national average and ranked 11th among the 50 states and the District of Columbia.¹⁶ Against the 20 states identified by MTF as the Commonwealth's principal economic competitors, Massachusetts' corporate burden ranked 7th. Largely based on these statistics, MTF concluded that "preserving the single sales factor and other business tax reforms is critical to maintaining the Commonwealth's competitive position" (Massachusetts Taxpayers Foundation et al. 2003, p. 28).

MTF admitted that corporate income tax burden is a crude indicator of business tax competitiveness. It acknowledged that dividing a state's corporate income tax revenues by corporate profits earned within its borders would produce a better indicator, since, in deciding where to locate and to expand, firms care most about how taxes affect their bottom line. MTF used personal income instead of profits as its denominator—a common practice—because state-specific measures of corporate profits are not readily available, and a state's personal income is thought to be a valid indicator of the size of its business profits. A large percentage of the nation's corporate profits are earned by large multistate or multinational conglomerates. Their operations are so well integrated that no analyst can objectively allocate corporate profits by state. MTF also explicitly cautioned that, as discussed above, corporate income tax burden is an especially inaccurate indicator of business tax competitiveness at peaks and troughs of business cycles. As a result, MTF cautioned policymakers not to conclude that the

¹⁶The Commonwealth's corporate burden was actually 39 percent above the national average in FY2000, based on dividing corporate income tax receipts for fiscal year 2000 by personal income for *fiscal year* 2000. MTF divides corporate income tax receipts for fiscal year 2000 by personal income for *calendar year* 2000. Many analysts use calendar year personal income data in tax burden comparisons because such data are more readily available. However, the mixing of calendar year and fiscal year data can distort results significantly.

competitiveness of Massachusetts business taxes deteriorated between FY1992, a recession year, and FY2000, a boom year, even though the gap between the Commonwealth's corporate income tax burden and the nation's widened during this period.

Regardless of the strengths and weaknesses of MTF's indicator, by FY2002 the gap between the corporate income tax burden in Massachusetts and the nation as a whole had all but disappeared and did not re-emerge in FY2003 (Figure 3). Thus, according to MTF's indicator of choice, it appears that, taken as a whole, the Commonwealth's corporate income taxes have become reasonably competitive.

As noted earlier in this section, AIM portrayed BSH and EBSH as indicators of business tax competitiveness. After showing that businesses pay a significant *share* of the Commonwealth's taxes, the study concluded as follows:

The combined Massachusetts state business tax *burden* is significant. From an economic development perspective, Massachusetts policymakers should carefully evaluate the *competitiveness* of the state and local business tax structure, including all of the business taxes identified in this study (*italics added*). . . .The disincentive effects of Massachusetts business taxes depends (*sic*) on the cumulative effect of all business taxes.

In these quotes, AIM implies (erroneously, as argued below) that BSH and EBSH are valid indicators of the effects of business taxes on firms' behavior, presumably including their decisions about where to invest.

The author has already noted that, according to the COST and the AIM studies, the EBSH of the Commonwealth is considerably lower than that of the nation as a whole. In a study released in March of 2004, Ernst and Young, LLP (E&Y), the consulting firm that performed both the COST and AIM studies, reported estimates of BSH for all 50 states for FY2003 (Cline et al. 2004). (Data limitations precluded estimation of EBSH for all the states.) In that year, the Commonwealth's BSH ranked 42nd among the 50 states (Table 1, column 1). In an earlier study (Cline et al. 2003a), E&Y reported comparable estimates for FY2000 (Table 1, column 2). The author developed his own BSH for FY2000 (the

methodology is set forth in the Appendix), which produced results similar to E&Y's.¹⁷ These estimates show the BSH in the Commonwealth at 36.1 percent, 7.5 percentage points below the national share. Excluding the District of Columbia (as did E&Y), Massachusetts ranked 48th, according to BSH (Table 1, column 3).¹⁸

Given that the BSH in Massachusetts ranks among the lowest in the nation—even according to analysis provided by business groups—and that its EBSH is below the national average, one is tempted to conclude that, taken as a whole, Massachusetts business taxes are quite competitive. Indeed, MBPC concludes from E&Y's analysis, “efforts to protect the corporate income tax base in Massachusetts from further erosion...likely would not cause tax burdens to rise above national levels (Massachusetts Budget and Policy Center 2003).”

However, BSH and EBSH are no better indicators of business tax competitiveness than corporate income tax burden because both reflect the capital intensity of a state's economy more than the burden of state and local businesses taxes. (See Tannenwald 1994.) Massachusetts BSH and EBSH are low in large part because labor-intensive industries—professional business services, health care, education, info-tech, financial services—account for a relatively large share of the Commonwealth's economy. Moreover, these industries pay their workers relatively high wages because they are highly skilled. Because the Commonwealth's economy is intensive in highly skilled labor, the bases of taxes paid by households are large relative to the bases of taxes paid by businesses. Its low BSH has little to do with how intensively it taxes one set of tax bases or the other. The late John Gould captured this point in testimony before the Massachusetts Legislature's Joint Committee on Taxation. He asked:

Why is Massachusetts so dependent on personal taxes? Not because business fails to pay its share, but because Massachusetts pays so much of its income to its employees...the proportion of our state

¹⁷ Ideally, the business share of all state and local own-source revenues, not merely taxes, should be measured. However, neither the author nor E&Y has devised a methodology for dividing user fees and charges into business and household components.

¹⁸ E&Y's 50-state report was released well after this study was begun, and E&Y has described its methodology in only sketchy terms.

revenues derived from business taxes, though low by national standards, results from the structure of our economy, not from low business tax burdens. (Gould 1995).

At the time he gave this testimony, Mr. Gould was president of Associated Industries of Massachusetts.

Box 1 provides a further explanation and empirical evidence of the relationship between capital intensity and business share.

BOX 1
**Explanation and Empirical Evidence of the Relationship Between
 Capital Intensity and Business Share**

Consider two hypothetical states with only one for-profit business in each. In one state the firm is a chemical manufacturer; in the other, a consulting firm. Assume that each firm earns the same rate of return on assets. The consulting firm would have the higher ratio of payroll to profit. A large percentage of its expenses consists of wages and salaries to its employees. By contrast, the chemical company has few employees relative to the extensive and expensive plant and equipment that it uses—pumps, pipes, meters, towers, distillers, precipitators, trucks, pollution control devices, etc. Profits are a large part of the return to capital. So the *aggregate* profits (not necessarily the *rate* of profit) of the chemical plant are high relative to the firm’s aggregate wage bill (not necessarily its average wage *rate*), while the opposite is true for the consulting firm. Profit is the base of an important business tax. Wages are the most important component of the personal income tax base. In addition, the chemical plant owns a lot of taxable nonresidential property (the base of a business tax). By contrast, the state with the consulting firm has a lot of owner-occupied residential property (the base of a large household tax) since its workers need places to live and many of them own rather than rent (property taxes on rental housing are considered to be business taxes).

The following equation, estimated using ordinary least squares from observations on the 50 states, provides empirical evidence supporting the argument that BSH rises with the capital/labor ratio:

$$\text{BSH} = 0.0026(\text{K/P}) + 11.71(\text{NPYT}) + 38.16, \quad R^2 = 0.70$$

(6.57)** (5.23)** (29.28)**

where:

BSH = business taxes as a percentage of total taxes, FY2000,

K/P = capital labor payroll ratio of state’s private sector economy [imputed physical capital (\$millions), payroll (\$millions) estimated for FY2000 with methodology developed by Munnell and Cook 1990],¹⁹ and

NPYT = a dummy variable, equal to 1 if a state has no broad-based personal income tax as of January 1, 2000.

Numbers in parentheses are t-statistics.

** significant at the 0.001 level, two-tailed test

¹⁹ Ideally the K/P variable should be rK/P where r is the average return to a unit of physical capital. The author implicitly assumes in this equation that r is uniform across the states.

III. Toward Better Indicators of State Business Tax Competitiveness

As has been argued elsewhere (Pomp 1998; Tannenwald 1994, 1996), an accurate comparison of states' business tax competitiveness requires insight into how business taxes interact to affect differences across states in the marginal after-tax return to business investment. No simple ratio can capture these differences. One can best gain such insight through the "representative firm" approach. In implementing this strategy, the tax analyst attempts to view a state's business taxes and those of its economic competitors through the eyes of rational, well-informed, profit-maximizing firms in the process of choosing a site for a new facility.²⁰

Such an approach is difficult and time-consuming. When applied to local jurisdictions, it reveals intra-state differences across counties, cities, and towns in business tax competitiveness, attributable primarily to differences in local property taxes. It also shows how a state's business tax competitiveness varies by industry, since the impact of business taxes on after-tax rates of return often depends on the capital intensity of a firm and its mix of depreciable assets. Consequently, it is difficult to extract a single indicator of state business tax competitiveness using this approach. For all these reasons, the approach has been employed only occasionally and has almost never been used to evaluate the business tax competitiveness of all 50 states. An alternative, simpler solution would be to compare states in terms of the ratio of their

²⁰In order to determine how such firms would evaluate the "tax climate" at alternative locations, one would follow these steps: 1) "locate" hypothetical representative firms at various sites within each state and at sites within competitor states, 2) assume that the gross pre-tax rates of return of these firms and their costs other than taxes are the same at each site, 3) compute the firms' total local, state, and federal tax liabilities and their net after-tax cash flows 20 to 50 years into the future, a range of time that encompasses the useful lifetimes of most facilities, 4) assume that each firm builds a new facility at each site, 5) calculate the long-run after-tax rate of return to the new facility at each site for each representative firm (by assumption, differences across sites in rates of return reflect only differences in state and local tax burdens), and 6) compare states in terms of the average after-tax rate of return at the sites located within their borders. The higher a state's average rate of return, the more competitive is its system of business taxation.

business tax collections to business profits earned within their borders. Such a measure would capture differences in the impact of business taxes on the *average* rate of return on investment, not the marginal rate of return. However, no readily available statistical series allocates business profits by state. On the whole, multistate and multinational corporations and partnerships are so tightly integrated that statisticians have shied away from trying to divide their profits geographically.

An easier, albeit second-best, approach is to compare states in terms of the ratio of business taxes to personal income (“business tax burden”). This approach combines the best feature of E&Y’s ratio, its numerator, with the best feature of MTF’s indicator, its denominator. In Table 2, states are compared in terms of business tax burden (with personal income taxes on business income not included in the numerator) for FY2000 and FY2003. Massachusetts ranks between 43rd and 47th according to this statistic, depending on the estimate of business taxes used (E&Y’s or the author’s) and the year in question. Thus, the Commonwealth’s rank according to BSH is similar to its rank according to business tax burden. However, as discussed further in Box 2, the ranks of some states differ significantly between the two indicators. (Compare Table 1 with Table 2.)

Box 2
States Differing Significantly in BSH Rank
and Business Tax Burden Rank

In general, states with high total tax burden rank higher according to business tax burden than to according to BSH, and vice versa. Within New England, Connecticut, Maine, and New Hampshire are cases in point. Maine’s total tax burden was the second highest in the nation in FY2000. According to the author’s estimates, in that year the state’s BSH ranked 21st in the nation, 0.5 percentage point above the national median. In contrast, the state’s business tax burden ranked 10th, 31 percent above the national median. Similarly, Connecticut had a high total tax burden (ranked 11th), a low BSH (ranked 40th), and an average business tax burden (ranked 28th). By contrast, New Hampshire’s BSH ranked 6th in terms of business share and stood 34 percent above the national median. The state’s business tax burden ranked 20th and stood only slightly above the national median. In FY2000, New Hampshire had the lowest total tax burden in the nation.

Yet, while business tax burden may be a better indicator of business tax competitiveness than business share, it is still a crude measure. Consequently, despite severe data limitations and the inherently arbitrary nature of the endeavor, the author estimated business profits by state for FY2000. He then created a new indicator of state business tax competitiveness by dividing state and local business taxes (excluding personal income taxes on business income) by business profits.²¹ The methodology used is based on the premise that the traditional three-factor formula for apportioning the income of multistate corporations for tax purposes is the most accurate way to gauge the true geographic allocation of corporate and partnership income. According to this formula, a state should tax a fraction of a corporation’s total income, Y_s/Y_n , equal to the sum of the corporation’s state shares of three factors—payroll, property value, and sales revenue—divided by three:

$$Y_s/Y_n = \frac{\frac{(\text{Payroll}_s)}{(\text{Payroll}_n)} + \frac{(\text{Property}_s)}{(\text{Property}_n)} + \frac{(\text{Sales}_s)}{(\text{Sales}_n)}}{3},$$

where s stands for state totals and n stands for nationwide totals.

Underlying this formula (called the “Massachusetts formula”) is the theory that business income is generated where the two principal factors of production, labor and capital, are applied and where demand for the product manifests itself. Payroll is a proxy for labor, property is a proxy for capital, and sales is a proxy for demand (Francis and McGavin 1992). More details on the author’s methodology for estimating business profits earned within a state are provided in Box 3.

²¹The measure of business profits used includes profits taxed under the personal income tax, creating an inconsistency between numerator and denominator. However, since the numerator includes other taxes paid by Subchapter S corporations, LLPs, LLCs, partnerships, and sole proprietorships, the author decided that the “least worst” choice was to include these profits in the denominator.

Box 3

Methodology for Estimating Business Profits Earned Within a State

In order to estimate the profits earned by corporations within each state for FY2000, the author first used nationwide corporate profit data by 45 two-digit industrial classifications, as reported in the Internal Revenue Service's *Statistics of Income—Corporations*. Calendar year 1999 and 2000 data were averaged to obtain estimates for state FY2000. For each industry, the percentage of nationwide payroll and receipts in each state was determined. The latest available data for receipts are for 1997, reported in the U.S. Economic Census. Monthly payroll data from the Bureau of Labor Statistics were used to estimate FY2000 payroll totals by industry by state. For each industry in each state, the ratio of payroll to receipts in FY2000 was assumed to be the same as it had been in calendar year 1997.²² Industry-specific data on property by state are not available.

The fraction of the nationwide profits earned within a given state by the corporations in each industry was estimated according to the following formula:

$$P_s^i = P_n^i \times \left\{ \frac{(\text{sales})_s^i / (\text{sales})_n^i + 2 \times (\text{payroll})_s^i / (\text{payroll})_n^i}{3} \right\},$$

where: P = profit

i = industry

s = state

n = nation.

Payroll was double-weighted in the absence of any state-specific data on property. This is tantamount to making the strong simplifying assumption that the property/payroll ratio of each two-digit industry is the same across states. Total corporate profits for each state, s, are the sum of all the industry corporate profits for that state:

$$P_s = \sum^i P_s^i.$$

The income of partnerships was allocated by state according to the same method as was the profits of corporations. National industry-specific data on the pre-tax income of partnerships from the Internal Revenue Service's *Statistics of Income—Partnerships 1999 and 2000* were used. State-specific measures of income earned by sole proprietorships were obtained from the Internal Revenue Service's *Individual Income Tax Returns 1999 and 2000*.

Further methodological details are available from the author on request.

²² The use of such estimating techniques introduces a potential source of error that can be eliminated when more data become available.

Table 3, column 1 reports each state's value and rank for business taxes as a percent of business profits in FY2000, using E&Y's estimates of business taxes. (Comparable estimates using the author's estimates are reported in Table 3, column 2.) At first blush, the high ratio of business taxes to profits in some states may seem implausible. For example, in Alaska, it was 82 percent, while in New Mexico it was 63 percent (author's estimates). How can businesses in these states pay such a high percentage of their profits in state and local taxes (not counting their federal taxes), and still survive? They can, by shifting the burden of most of these taxes. Both states rely heavily on severance taxes and property taxes levied on industries engaged in mineral extraction. Demand for these products is relatively price inelastic, and the mineral deposits being extracted do not move to a lower-tax state. Under such conditions, these firms are usually able to shift most of their tax burden to customers located throughout the world. Moreover, since firms outside of these industries do not face such taxes, the statewide average is not indicative of the tax burden on the "prototypical" business, even before shifting. The high ranks of these two states bring into sharp relief the importance of considering tax shifting when evaluating business taxes, as well as the advantages of using the representative firm approach.

Massachusetts ranks low according to business tax burden and business taxes as a percent of profits, no matter whose data are used (Table 3). According to the author's estimates, the Commonwealth ranked 49th according to the tax-to-profit ratio (column 2) and 47th according to business burden (column 4). According to figures relying on E&Y's estimates of business taxes, the Commonwealth ranked slightly higher, but was still among the 10 lowest in the nation. (See Box 4 for a discussion of comparisons of business tax burden and business taxes as a percent of profits in other states.)

Box 4

How Ranks According to Business Tax Burden and Business Taxes-To-Profits Differ in States Other Than Massachusetts

Most other states within New England rank similarly across the measures of business tax burden and business taxes as a percent of profits. Maine, Rhode Island, and Vermont rank within the top third according to both statistics, while New Hampshire ranks roughly in the middle. Connecticut is the only New England state whose rank differs substantially between business tax burden and business taxes as a percent of profits. The state ranked 40th in terms of taxes as a percent of profits and 28th in terms tax burden in FY2000. This discrepancy reflects primarily two factors. First, incomes of sole proprietorships and partnerships were high relative to personal income in the state. Second, and a related factor, the state had a high concentration of payroll and receipts in financial service industries that were highly profitable. Examples include security and commodity brokers, holding and other investment offices, and insurance brokers.

Some states in other regions also ranked very differently according to taxes as a percent of profits and business tax burden in FY2000. Delaware ranked much lower according to taxes as a percent of profits because depository financial institutions, which were very profitable, accounted for a large proportion of Delaware's payroll and receipts. Florida ranked much higher according to taxes relative to profits because its industries were not especially profitable and because, given that a large percentage of its population consists of retirees, the link between the profits earned within the state's borders and personal income earned by residents is especially weak. Compared with other residents, retirees rely relatively heavily on dividends and interest for their income. Much of this income is paid on shares in funds invested in businesses throughout the world, not just in Florida.

Maryland ranked much higher on business taxes as a percent of business profits than on business taxes as a percent of personal income because such a large fraction of the personal income of its residents reflects compensation from the federal government. Oklahoma ranked much higher on taxes as a percent of profits because its principal sector, mining, was so unprofitable. While the reasons for the discrepancies may differ, they all imply that the personal income of a state's residents is not necessarily a good proxy for the profits earned within the state's borders.

IV. Findings and Next Steps

This paper presents analysis whose purpose is to help policymakers make more sense of the recent debate about the fairness, adequacy, and competitiveness of state and local business taxes in Massachusetts, and, by extension, in general. Several indicators that have been used to evaluate business taxes according to these three criteria are assessed. Two new indicators of business tax competitiveness are developed, and their values are estimated for all 50 states. One is a measure of business taxes as a percent of in-state profits. This indicator has theoretical appeal to economists, who posit that firms, as profit-maximizers, are influenced by taxes to the extent that they affect their bottom lines.

The author finds abundant evidence that Massachusetts business taxes are competitive, even from data supplied by business interest groups. In the aggregate, the bases of the Commonwealth's corporate income taxes have been eroding, especially during the last decade. No conclusions are drawn about the overall fairness of business taxes in the Commonwealth, although modifications to the corporate excise tax introduced in recent years clearly favor some types of firms over others.

Policymakers should not rely solely on the indicators presented in this article. Indeed, the author hopes that reading this article will induce a healthy skepticism concerning the validity and unbiasedness of such indicators and will cultivate an interest in superior evaluation tools. For example, policymakers should use the representative firm approach to analyze the marginal incentives and disincentives to invest provided by Massachusetts business taxes to different types of firms. They should also use this approach to gain insights into differences in tax competitiveness across cities and towns within the Commonwealth.

Policymakers and policy analysts could better evaluate the fairness of the Commonwealth's business taxes if they had more data on how the ratio of taxes to pre-tax profits differs on average across industries and business size. If they possessed such data, they could evaluate disparities in the ratio and changes over time. If such disparities have widened dramatically, and if there is no reason to believe that the

incidence of the benefits of state and local public services has changed in a similar fashion, then policymakers would have reason to be concerned about the fairness of state and local business taxes. The Commonwealth could ask the Massachusetts Department of Revenue to provide such data, at a sufficiently aggregated level to avoid disclosing confidential or sensitive information.²³

²³ See Kodrzycki (1993) for an analysis, based on actual tax return data, of differences across industries within Massachusetts in tax-to-profit ratios. The Massachusetts Department of Revenue publishes an annual report of corporate tax characteristics across industries and firm size categories (Commonwealth of Massachusetts Department of Revenue 2002). However, the data that it reports shed little light on dispersion in tax-to-profit ratios. Data are broken down into only 11 broad industrial categories. For each of these categories, the Department reports totals for gross profits, income subject to apportionment (that is, the nationwide income of corporate entities to which the apportionment formula is applied), Massachusetts taxable income, excise tax owed, and selected other variables. In order to evaluate average effective tax burden for each industrial category, one would need information concerning the percentage of nationwide payroll, property, and sales located in the Commonwealth for corporate excise tax filers, that is, the income that would actually be apportioned to Massachusetts if the unweighted three-factor apportionment formula were in place.

APPENDIX

I. Estimating Corporate Income Taxes and Business Income Taxes

Corporate income taxes. The U.S. Census Bureau reports total state and local corporate income taxes collected by each state and the District of Columbia by state fiscal year. (See <http://www.census.gov/govs/www/estimate00.html>.) When research for this article was completed, the latest set of published statistics for these taxes for the nation as a whole was for FY2002. The latest state-specific observations were for FY2002. Consequently, values for later years for Massachusetts and the nation as a whole had to be estimated.

For the nation as a whole, a measure very similar to the Census Bureau's state and local corporate income tax receipts—"state and local taxes on corporate income"—was available through calendar year 2003:Q4 from the National Income and Product Accounts (NIPA), published by the U.S. Bureau of Economic Analysis (BEA)(<http://www.bea.gov>, Table 3.3). Thus, on a state fiscal year basis, the author was able to estimate state and local taxes on corporate income nationwide through FY2003. In so doing, he assumed that the Census measure grew over the course of FY2002 and FY2003 at the same rate as the BEA measure.

For Massachusetts, one can obtain a very close approximation of the Census Bureau's figure for total corporate income tax receipts from statistics reported by the Massachusetts Department of Revenue (DOR) (<http://www.dor.state.ma.us/stats/stats.htm>). Specifically, the author added up receipts from all of the various Massachusetts taxes on corporate income cited above. Since this sum was not exactly equal to the Census figure for FY2002, the growth rates of corporate income taxes measured from DOR statistics over the course of FY2003 were applied to FY2002 receipts measured from Census statistics. Based on this assumption, the author extrapolated the Census measure of corporate income tax receipts to FY2003.

All business income taxes. As noted in the text, a comprehensive measure of business income taxes should include, in addition to corporate income taxes, personal income taxes paid on the profits of sole proprietorships, partnerships, limited liability corporations, and Subchapter S corporations (business-related personal income taxes). Data needed to measure business-related personal income taxes for Massachusetts and the nation as a whole are available for only a limited number of years. However, sufficient data are available to estimate business income tax receipts for the Commonwealth and for the nation for several years going back to the early 1980s.

For certain years, the author relied on estimates provided for both the United States and Massachusetts by Ernst and Young LLP (E&Y)(Cline et al. 2003a, 2003b, 2004; Saviano and Cline 2003). On a nationwide basis, E&Y provided estimates for the years FY1980, FY1990, FY1999, and FY2001. For Massachusetts, E&Y provided estimates for every fiscal year between FY1992 and FY2002. The author estimated these taxes for Massachusetts (used in Figures 4 through 6) for FY1982, FY1987, and FY2003. For the first two of these three fiscal years, the assumption was made that the ratio of personal taxes on business-related income to *total taxes as estimated by E&Y* was the same in Massachusetts as in the United States as a whole. (The ratios were almost identical in FY1999, the only year for which E&Y provided an estimate for both Massachusetts and the U.S.) It was then assumed that between FY1980 and FY1990 the nationwide ratio grew at a constant rate and that the Massachusetts ratio grew at the same rate. Based on these assumptions, linear interpolation was used to develop estimates for personal taxes on business-related income in Massachusetts in FY1982 and FY1987, the two years used as observations during the FY1980s in Figures 4 through 6. To obtain an estimate for FY2003, it was assumed that the rate of growth in personal income taxes on business-related income in Massachusetts from FY2002 to FY2003 was the same as the annualized rate of growth from FY1992 to FY2002 (9.9 percent).

The author’s estimates are reported in the following table:

Appendix Table 1
Estimated Massachusetts Personal Income Taxes on Business-Related Income,
FY1982 through FY2003

	<i>FY1982</i>	<i>FY1987</i>	<i>FY1992</i>	<i>FY1999</i>	<i>FY2000</i>	<i>FY2001</i>	<i>FY2002</i>	<i>FY2003</i>
(\$ millions)	214	371	405	933	1,049	1,149	1,042	1,046

II. Estimating General Own-Source Revenue: FY2001-FY2003

Unfortunately, state-specific Census data are not available for fiscal years 2001 through 2003 for state and local government general own-source revenues. The author used the following technique to estimate total general own-source revenues for state and local governments in both Massachusetts and the entire United States.

Massachusetts: DOR data were used. An estimate of *state* taxes, fees, and charges was obtained from the residual of “total revenues” less “Federal reimbursements” as stated in the official financial statements broadcast on the Commonwealth’s official web site (<http://budget.mass.gov/budget>). To estimate the *local* taxes, fees, and charges, “State Aid” was removed from “Total Receipts” as measured in the Massachusetts Department of Revenue Municipal Databank (<http://www.dls.state.ma.us/mdm.htm>.)

Combining these estimates provides an approximation for total *state and local* general own-source revenues for Massachusetts, measured with Massachusetts data. The author assumed that state and local own-source revenues, as reported by the Census Bureau, grew at the same rates in order to estimate Massachusetts general own-source revenues for FY2001 through FY2003. (Results appear in Appendix Table 2, below.) This technique is certainly not problem-free, although it does create estimates based on actual state and local data that are in some ways sensitive to Census standardizations.

United States: A parallel technique was used in estimating total state and local general own-source revenue for the United States. Bureau of Economic Analysis data from the National Income and Product Accounts were used to construct the scaling factor. Total general own-source revenue was estimated from “total state and local current receipts” less “total state and local transfer receipts.” Mirroring the technique employed for the DOR data above, growth rates were constructed and applied to standardized Census data to approximate total state and local general own-source revenues for fiscal years 2001-2003. Results appear in Appendix Table 3 below.

Appendix Table 2
Estimates for Massachusetts
General Own-Source Revenues,
FY2001-FY2003
(\$ millions)

FY	Total Revenues	Federal Reimbursements	State Taxes, fees and charges (1-2)	Municipal Taxes, Fees and Charges	Estimated GOSR (3+4)	Percentage Growth from Prior FY	Census Data General Own-Source Revenue	Estimated General Own-Source Revenue
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2000	22,587.00	3,645.50	18,941.50	10,314.88	29,256.38		31,855.85	
2001	22,809.10	3,974.00	18,835.10	10,985.33	29,820.43	1.93		32,470.02
2002	21,756.40	4,346.70	17,409.70	11,654.04	29,063.74	-2.54		31,646.09
2003	22,561.80	4,652.50	17,909.30	12,193.66	30,102.96	3.58		32,777.64

Appendix Table 3
Estimates for United States
General Own-Source
Revenues, FY2001-FY2003
(\$ millions)

Fiscal Year	Total receipts	Current transfer receipts	Total Own-Source Revenue (1-2)	Percentage Growth from Prior FY	Census Data General Own-Source Revenue	Estimated General Own-Source Revenue
	(1)	(2)	(3)	(4)	(5)	(6)
2000	1,326,925	303,525	1,023,400		1,249,373	
2001	1,403,775	334,025	1,069,750	4.52		1,305,957
2002	1,441,625	366,350	1,075,275	0.51		1,312,702
2003	1,504,750	401,175	1,103,575	2.63		1,347,250

III. Further Methodological Details for Figures

Corporate Excise Tax and Total State Tax Collections FY2004: *Figures 1, 2, 5, 6*

The values for 2004 are estimated. It was assumed that the year-over-year growth rates in corporate excise tax receipts and total tax receipts for all of FY2004 equaled the year-over-year growth rates for these two taxes through February of FY2004.

Massachusetts Personal Income FY2004: *Figures 2, 5*

Massachusetts personal income for FY2004 is estimated. The Bureau of Economic Analysis supplied sufficient data to calculate a year-over-year growth rate of personal income for the first quarter of FY2004. This growth rate was compared with the year-over-year growth rate of the first quarter from FY2002 to FY2003. The change from this observable growth rate in the first quarter of FY2004 was assumed to hold for the remaining quarters, providing an estimate of Massachusetts personal income in FY2004.

Corporate Excise Tax Receipts FY2002-FY2003: *Figures 5, 6*

U.S. Census data for state tax collections for individual states are available only through FY2002. Therefore, Census data for corporate excise tax collections were extended through FY2003 by using annual growth rates and through FY2004 by using the observed year-over-year growth rates through February 2004 from Massachusetts Department of Revenue data on corporate excise tax collections.

Corporate Income Tax Receipts FY2001-FY2002 and FY2002-2004: *Figures 3, 5*

See Appendix section I. *Corporate income taxes.*

Expanded Business Share FY2003: *Figure 9*

See Appendix section I. *All business income taxes.*

IV. State-Specific Estimates of Business Share of Total Taxes, FY2000

Total taxes were set equal to total general taxes, as defined by the U.S. Census, plus unemployment insurance taxes and workers compensation premiums, both considered to be business taxes by E&Y.

Taxes assumed to be nominally borne in whole or in part by businesses, as opposed to households, include the following:

- property tax*
- general sales/gross receipts tax*
- selective sales tax*
- insurance premium tax*
- motor fuels tax*
- public utilities tax*
- amusement license*
- corporate license*
- alcoholic beverages license*
- public utilities license*
- occupation/business license, NEC*
- other license taxes*
- corporate net income taxes*
- severance*
- workers compensation*
- unemployment insurance taxes*

Allocation of Taxes to Businesses: Some of these taxes, such as corporate net income, are clearly paid entirely by businesses. In contrast, some taxes, like property taxes, are shared by businesses and households. The following methodology was used to assess the share of each tax borne by businesses in each state. Those taxes not explicitly listed were assumed to be entirely business taxes.

Property Tax:

The business share of property taxes was calculated as the residual of total property taxes in the state for FY2000 (reported in the U.S. Census State and Local Government Finances) less the aggregate property taxes paid on owner-occupied units in the state (obtained from the U.S. Census of Housing, 2000). The Census of Housing provides state-specific data on the total number of owner-occupied units and the average property tax bill per unit. Multiplying the two together yields an estimate of statewide property taxes paid on owner-occupied units. In interviews by phone, Census officials have indicated that these totals include the value of farm homesteads, vacation homes, and vacant homes, all residential units whose taxes should be treated as “household” taxes rather than “business” taxes. Taxes on rental housing are considered business taxes, since the provision of such housing is an enterprise as much as manufacturing cars or cutting hair.

General Sales and Gross Receipts Tax:

In order to determine the business share of this tax, the author used E&Y estimates graciously provided by the consulting firm.

Selective Sales Taxes:

Tobacco and liquor taxes were assumed to be paid by households. Absent any detailed data on these taxes, *selective sales taxes not elsewhere classified* were assumed to be split 50-50 between businesses and households.

To allocate *motor fuel taxes* between households and businesses, the author assumed that diesel fuel sales were made primarily to businesses (trucking, shipping, etc.) whereas gasoline sales were made primarily to households. Therefore, the business share of fuel taxes was allocated by multiplying total state fuel tax revenues by the ratio of diesel sales to total *fuel sales* (defined here as the sum of gasoline and diesel sales). Data on fuel sales were obtained from U.S. Energy Information Administration,

Petroleum Marketing Annual 2002 (U.S. Energy Information Administration 2003), which lists sales volumes on a state-by-state basis.

This allocation technique is not problem-free. In particular, it is clear that diesel fuel sales include some made to households, and gasoline fuel sales include some made to businesses. However, a lack of detailed data on fuel sales necessitated an estimation technique, and insofar as diesel fuel sales are primarily made to business, and gasoline sales are primarily made to households, this estimation yields a better approximation than arbitrarily assigning a value.

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Glossary

Names of Indicators Used in This Article

Corporate excise burden—Massachusetts corporate excise tax receipts per \$1,000 of Massachusetts personal income.

Corporate excise share—Massachusetts corporate excise tax receipts as a percent of Massachusetts state taxes.

Corporate income tax burden—State and local corporate income tax receipts, as measured by the U.S. Census Bureau, per \$1,000 of personal income. In Massachusetts, all of corporate excise tax receipts are included in the Census corporate income tax figures.

Corporate income tax share—State and local corporate income tax receipts, as measured by the U.S. Census Bureau, as a percent of total state and local general own-source revenues.

Business income tax burden—State and local corporate income tax receipts plus state and local personal income taxes on business income, per \$1,000 of personal income.

Business income tax share—State and local corporate income tax receipts plus state and local personal income taxes on business income as a percent of all state and local own-source revenues.

Business share (BSH)—State and local taxes on business (including business income taxes except for personal income taxes on business income) as a percent of total state and local taxes, as defined by Ernst & Young LLP in Cline et al. 2003a.

Expanded business share (EBSH)—State and local taxes on business, including personal income taxes on business incomes, as a percent of total state and local taxes, as defined by Ernst & Young LLP in Cline et al. 2003a.

Business tax burden—State and local taxes on business (including business income taxes except for personal income taxes on business income and including other taxes paid by business, such as licenses, workers compensation premiums, unemployment insurance taxes, and parts of property and sales taxes—see Appendix, section IV) per \$1,000 of personal income.

Table 1
 Business Share of State and Local Taxes (BSH), by State
 FY2000 and FY2003
 (percent)

(1)			(2)			(3)		
Estimates based on Ernst and Young figures for Business Taxes, FY2003			Estimates based on Ernst and Young figures for Business Taxes, FY2000			Author's Estimate FY2000		
		Rank			Rank			Rank
US	42.7		US	41.6		US	43.6	
AL	41.1	28	AL	41.6	26	AL	42.5	28
AK	77.2	1	AK	81.0	1	AK	79.8	1
AZ	47.2	17	AZ	46.2	16	AZ	51.7	12
AR	39.2	37	AR	39.9	29	AR	37.4	43
CA	40.4	32	CA	37.3	40	CA	39.9	38
CO	40.7	31	CO	39.4	30	CO	42.6	27
CT	37.2	43	CT	37.0	42	CT	39.1	40
DE	55.7	7	DE	53.6	10	DE	53.9	10
FL	47.9	13	FL	47.5	13	FL	48.0	16
GA	39.0	38	GA	37.9	38	GA	40.6	35
HI	38.0	40	HI	38.4	35	HI	37.1	45
ID	39.6	35	ID	37.6	39	ID	39.4	39
IL	47.8	14	IL	46.3	15	IL	45.2	19
IN	36.8	44	IN	35.8	44	IN	42.8	26
IA	43.3	25	IA	42.0	25	IA	40.4	36
KS	43.3	24	KS	42.8	24	KS	43.3	25
KY	40.9	30	KY	39.2	32	KY	40.7	31
LA	57.2	5	LA	56.5	5	LA	58.5	5
ME	46.3	19	ME	45.0	19	ME	44.1	21
MD	31.8	50	MD	30.7	50	MD	32.7	50
MA	37.5	42	MA	35.5	45	MA	36.1	48
MI	41.2	27	MI	39.2	33	MI	38.8	41
MN	37.6	41	MN	37.1	41	MN	37.1	46
MS	45.5	21	MS	44.0	22	MS	45.8	18
MO	38.7	39	MO	38.0	37	MO	40.6	33
MT	54.9	8	MT	54.4	8	MT	53.4	11
NE	44.8	22	NE	43.6	23	NE	43.8	23
NV	47.3	16	NV	46.0	17	NV	49.8	13
NH	63.6	3	NH	62.7	3	NH	58.3	6
NJ	41.1	29	NJ	39.0	34	NJ	40.6	34
NM	49.7	12	NM	50.2	12	NM	49.6	14
NY	40.0	34	NY	40.4	28	NY	44.4	20
NC	36.4	47	NC	34.9	46	NC	36.9	47
ND	54.4	9	ND	54.6	7	ND	58.3	7
OH	39.5	36	OH	38.4	36	OH	42.5	29
OK	44.5	23	OK	44.1	21	OK	41.8	30
OR	35.0	48	OR	33.8	48	OR	40.2	37
PA	40.2	33	PA	41.1	27	PA	40.7	32
RI	46.1	20	RI	45.7	18	RI	43.8	22
SC	42.8	26	SC	39.3	31	SC	43.4	24
SD	57.7	4	SD	57.4	4	SD	57.5	8
TN	50.2	11	TN	50.6	11	TN	48.9	15
TX	56.1	6	TX	56.3	6	TX	59.1	4
UT	34.1	49	UT	32.9	49	UT	37.4	44
VT	46.6	18	VT	44.3	20	VT	45.9	17
VA	36.6	46	VA	35.9	43	VA	38.4	42
WA	53.9	10	WA	54.2	9	WA	59.6	3
WV	47.6	15	WV	47.3	14	WV	55.2	9
WI	36.7	45	WI	33.8	47	WI	34.5	49
WY	69.2	2	WY	66.4	2	WY	70.1	2

Note: see appendix for methodological details.

Sources: Author's calculations, Census Bureau, and Cline et al. (2004).

Table 2
Business Taxes as a Percent of Statewide Personal Income
by State, FY2000 and FY2003

(1)			(2)			(3)		
Estimates based on Ernst and Young figures for Business Taxes, FY2003			Estimates based on Ernst and Young figures for Business Taxes, FY2000			Author's Estimate FY2000		
		Rank			Rank			Rank
US	4.5		US	4.4		US	4.7	
AL	3.8	42	AL	3.8	41	AL	3.9	45
AK	8.6	1	AK	10.6	1	AK	10.4	1
AZ	4.9	18	AZ	4.8	19	AZ	5.5	12
AR	4.0	37	AR	4.2	36	AR	3.9	44
CA	4.3	32	CA	4.2	37	CA	4.5	25
CO	3.8	41	CO	3.7	44	CO	4.0	43
CT	4.1	36	CT	4.3	31	CT	4.5	28
DE	6.1	4	DE	5.9	7	DE	6.0	9
FL	4.3	28	FL	4.4	24	FL	4.5	27
GA	4.0	39	GA	3.9	40	GA	4.1	42
HI	4.5	23	HI	4.8	18	HI	4.6	23
ID	4.0	38	ID	4.1	38	ID	4.4	29
IL	5.0	17	IL	4.8	17	IL	4.7	21
IN	3.7	46	IN	3.6	46	IN	4.4	35
IA	4.4	26	IA	4.5	23	IA	4.3	38
KS	4.4	27	KS	4.4	25	KS	4.5	24
KY	4.3	33	KY	4.2	35	KY	4.4	32
LA	6.3	3	LA	6.1	5	LA	6.3	6
ME	5.9	5	ME	6.1	6	ME	5.9	10
MD	3.2	50	MD	3.2	50	MD	3.4	50
MA	3.8	43	MA	3.7	43	MA	3.7	47
MI	4.5	21	MI	4.4	27	MI	4.3	36
MN	4.2	34	MN	4.4	28	MN	4.4	34
MS	4.7	19	MS	4.8	20	MS	5.0	19
MO	3.7	45	MO	3.7	45	MO	3.9	46
MT	5.6	8	MT	5.8	8	MT	5.9	11
NE	4.5	22	NE	4.6	22	NE	4.6	22
NV	4.7	20	NV	4.7	21	NV	5.0	18
NH	5.5	11	NH	5.0	16	NH	4.7	20
NJ	4.5	24	NJ	4.2	33	NJ	4.4	30
NM	5.5	10	NM	6.3	3	NM	6.1	7
NY	5.6	9	NY	5.4	12	NY	6.0	8
NC	3.6	47	NC	3.5	48	NC	3.7	48
ND	5.8	6	ND	6.2	4	ND	7.1	4
OH	4.3	30	OH	4.2	34	OH	5.1	17
OK	4.5	25	OK	4.4	26	OK	4.3	39
OR	3.3	49	OR	3.6	47	OR	4.5	26
PA	4.1	35	PA	4.3	29	PA	4.2	40
RI	5.4	13	RI	5.5	10	RI	5.1	16
SC	3.9	40	SC	3.9	39	SC	4.4	31
SD	5.3	14	SD	5.2	13	SD	5.2	15
TN	4.3	29	TN	4.3	30	TN	4.2	41
TX	5.3	15	TX	5.1	15	TX	5.4	13
UT	3.8	44	UT	3.8	42	UT	4.4	33
VT	5.2	16	VT	5.1	14	VT	5.3	14
VA	3.4	48	VA	3.4	49	VA	3.7	49
WA	5.7	7	WA	5.8	9	WA	6.8	5
WV	5.5	12	WV	5.5	11	WV	7.2	3
WI	4.3	31	WI	4.2	32	WI	4.3	37
WY	7.9	2	WY	7.4	2	WY	7.9	2

Note: see appendix for methodological details.

Sources: Author's calculations, Census Bureau, Bureau of Economic Analysis, and Cline et al. (2003).

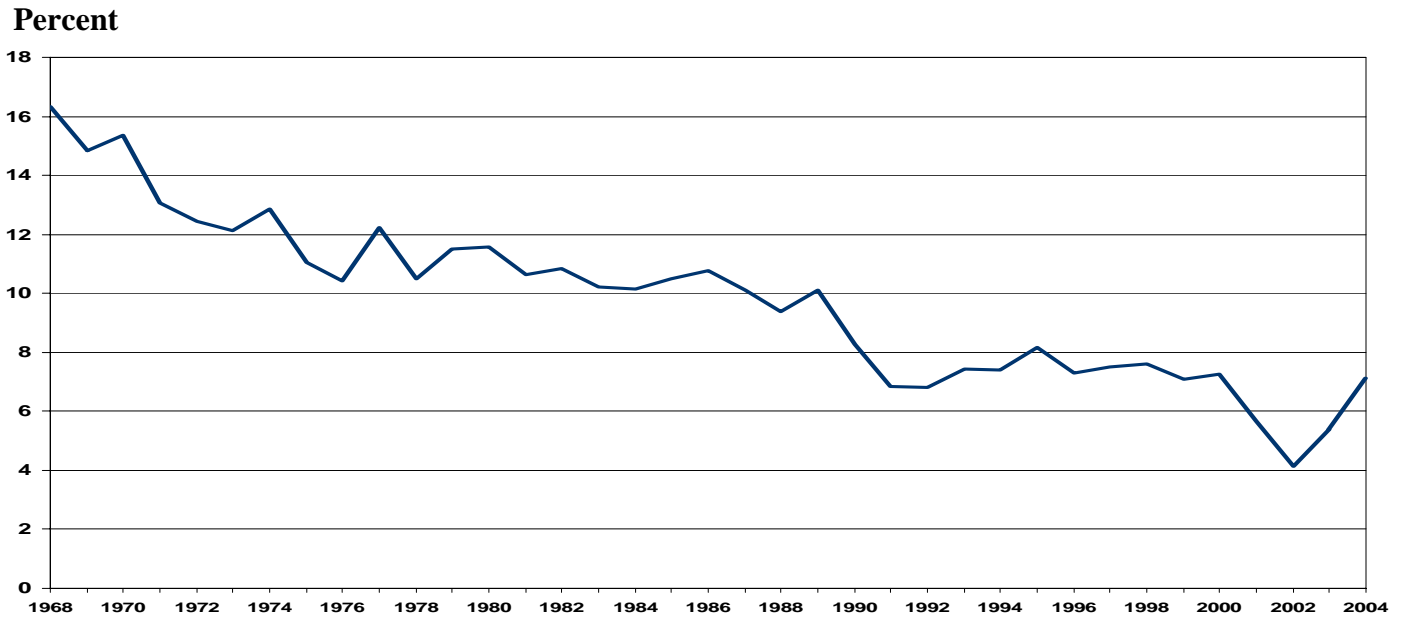
Table 3
Business Taxes as a Percent of Business Profits
and Personal Income, FY2000

Business Taxes as a Percent of Business Profits			Business Taxes as a Percent of Personal Income				
(1)		(2)	(3)		(4)		
Estimates based on Ernst and Young figures for Business Taxes		Author's Estimate	Estimates based on Ernst and Young figures for Business Taxes		Author's Estimate		
	Rank		Rank		Rank		
US	33.7	US	35.8	US	4.4	US	4.7
AL	32.3	AL	32.8	AL	3.8	AL	3.9
AK	84.4	AK	82.3	AK	10.6	AK	10.4
AZ	39.6	AZ	45.3	AZ	4.8	AZ	5.5
AR	32.1	AR	29.9	AR	4.2	AR	3.9
CA	31.3	CA	33.7	CA	4.2	CA	4.5
CO	26.0	CO	28.0	CO	3.7	CO	4.0
CT	31.5	CT	32.5	CT	4.3	CT	4.5
DE	27.7	DE	27.9	DE	5.9	DE	6.0
FL	39.8	FL	40.1	FL	4.4	FL	4.5
GA	28.8	GA	30.7	GA	3.9	GA	4.1
HI	40.5	HI	38.7	HI	4.8	HI	4.6
ID	35.4	ID	38.5	ID	4.1	ID	4.4
IL	35.6	IL	34.5	IL	4.8	IL	4.7
IN	27.8	IN	33.3	IN	3.6	IN	4.4
IA	33.7	IA	32.5	IA	4.5	IA	4.3
KS	34.3	KS	35.0	KS	4.4	KS	4.5
KY	32.9	KY	34.2	KY	4.2	KY	4.4
LA	45.7	LA	47.3	LA	6.1	LA	6.3
ME	41.7	ME	40.5	ME	6.1	ME	5.9
MD	32.8	MD	35.1	MD	3.2	MD	3.4
MA	27.6	MA	27.5	MA	3.7	MA	3.7
MI	35.0	MI	34.4	MI	4.4	MI	4.3
MN	31.6	MN	31.5	MN	4.4	MN	4.4
MS	39.1	MS	40.9	MS	4.8	MS	5.0
MO	27.0	MO	28.6	MO	3.7	MO	3.9
MT	51.3	MT	52.1	MT	5.8	MT	5.9
NE	36.4	NE	36.7	NE	4.6	NE	4.6
NV	33.9	NV	36.5	NV	4.7	NV	5.0
NH	38.5	NH	35.9	NH	5.0	NH	4.7
NJ	35.3	NJ	36.6	NJ	4.2	NJ	4.4
NM	64.3	NM	63.1	NM	6.3	NM	6.1
NY	34.8	NY	38.8	NY	5.4	NY	6.0
NC	25.5	NC	26.9	NC	3.5	NC	3.7
ND	50.9	ND	58.6	ND	6.2	ND	7.1
OH	31.9	OH	38.5	OH	4.2	OH	5.1
OK	39.2	OK	37.7	OK	4.4	OK	4.3
OR	28.1	OR	35.3	OR	3.6	OR	4.5
PA	33.2	PA	32.5	PA	4.3	PA	4.2
RI	46.0	RI	43.2	RI	5.5	RI	5.1
SC	31.6	SC	35.1	SC	3.9	SC	4.4
SD	38.2	SD	38.4	SD	5.2	SD	5.2
TN	31.6	TN	30.4	TN	4.3	TN	4.2
TX	36.3	TX	38.1	TX	5.1	TX	5.4
UT	28.8	UT	33.4	UT	3.8	UT	4.4
VT	41.1	VT	42.5	VT	5.1	VT	5.3
VA	29.0	VA	31.0	VA	3.4	VA	3.7
WA	47.5	WA	56.1	WA	5.8	WA	6.8
WV	47.5	WV	63.1	WV	5.5	WV	7.2
WI	32.3	WI	32.9	WI	4.2	WI	4.3
WY	62.1	WY	66.5	WY	7.4	WY	7.9

Note: see appendix for methodological details.

Sources: Author's calculations, Census Bureau, Cline et al. (2004), and Bureau of Economic Analysis.

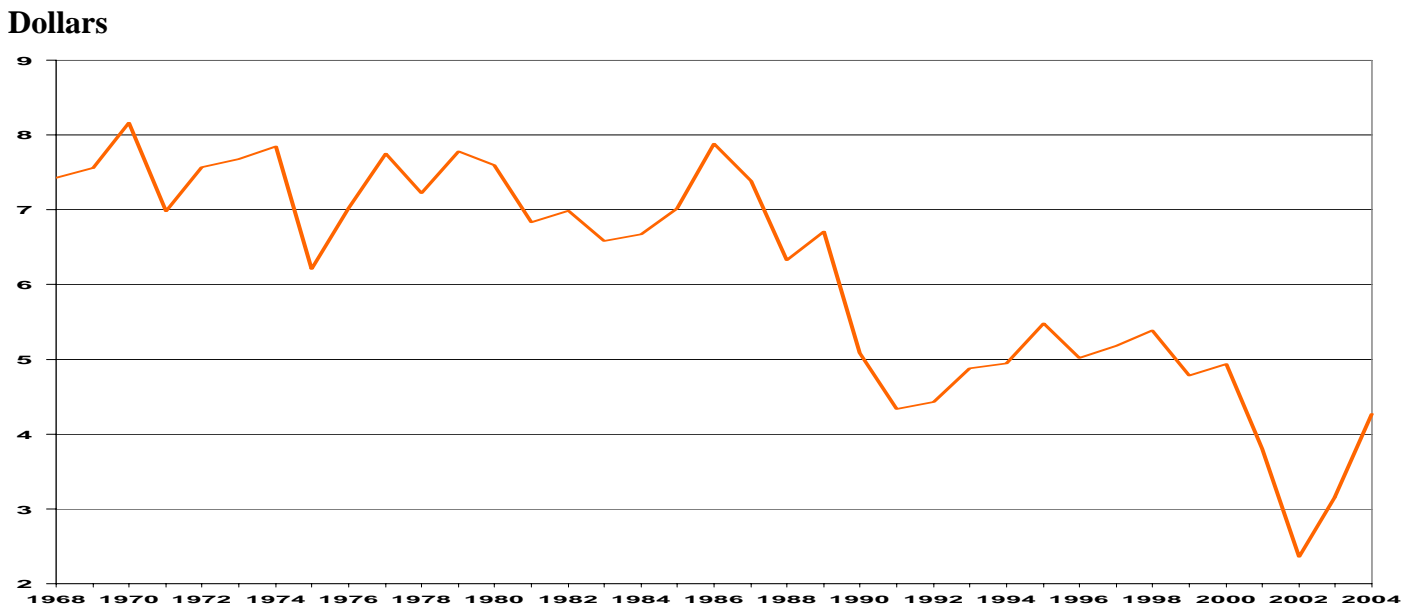
Figure 1
Corporate Excise Share, Massachusetts, FY1968-FY2004*



Fiscal Years

*Value for FY2004 is estimated. The rate of growth for corporate excise tax collections through the first eight months of FY2004 was assumed to be equal to the rate of growth for the whole fiscal year.
 Source: Massachusetts Department of Revenue.

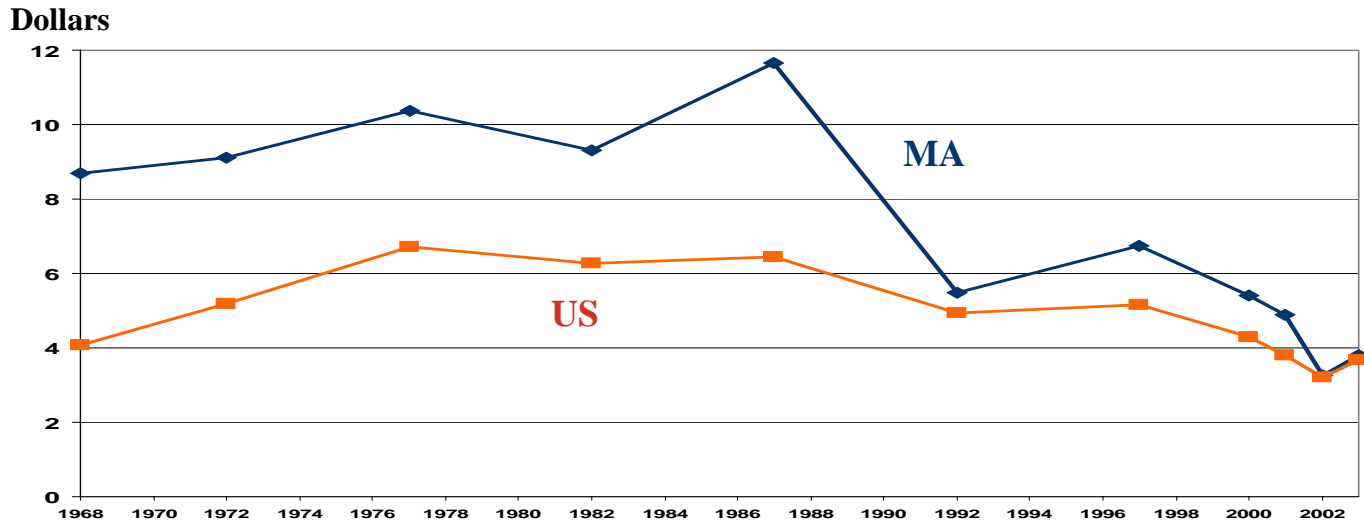
Figure 2
Corporate Excise Burden, Massachusetts, FY1968-FY2004*



Fiscal Years

*Value for FY2004 is estimated. See notes to Figure 1 for method used to estimate FY2004 corporate excise tax receipts. See appendix for methodology used to estimate Massachusetts personal income.
 Sources: Census Bureau, Bureau of Economic Analysis, and Massachusetts Department of Revenue.

Figure 3
Corporate Income Tax Burden, Massachusetts and the United States,
FY1968-FY2003,* selected years

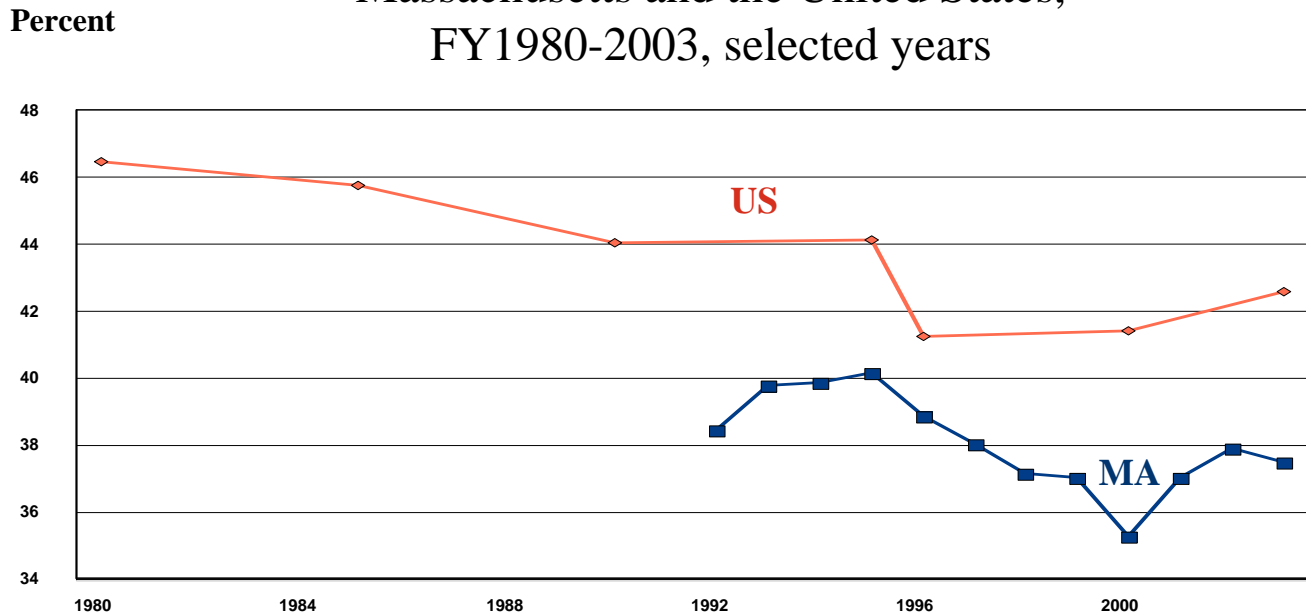


Fiscal Years

*Values for FY2001 are estimated. See methodological appendix for details. See text for definition of corporate income tax burden.

Sources: Census Bureau, Bureau of Economic Analysis, and Massachusetts Department of Revenue.

Figure 4
Business Share of State and Local Taxes (BSH),
Massachusetts and the United States,
FY1980-2003, selected years



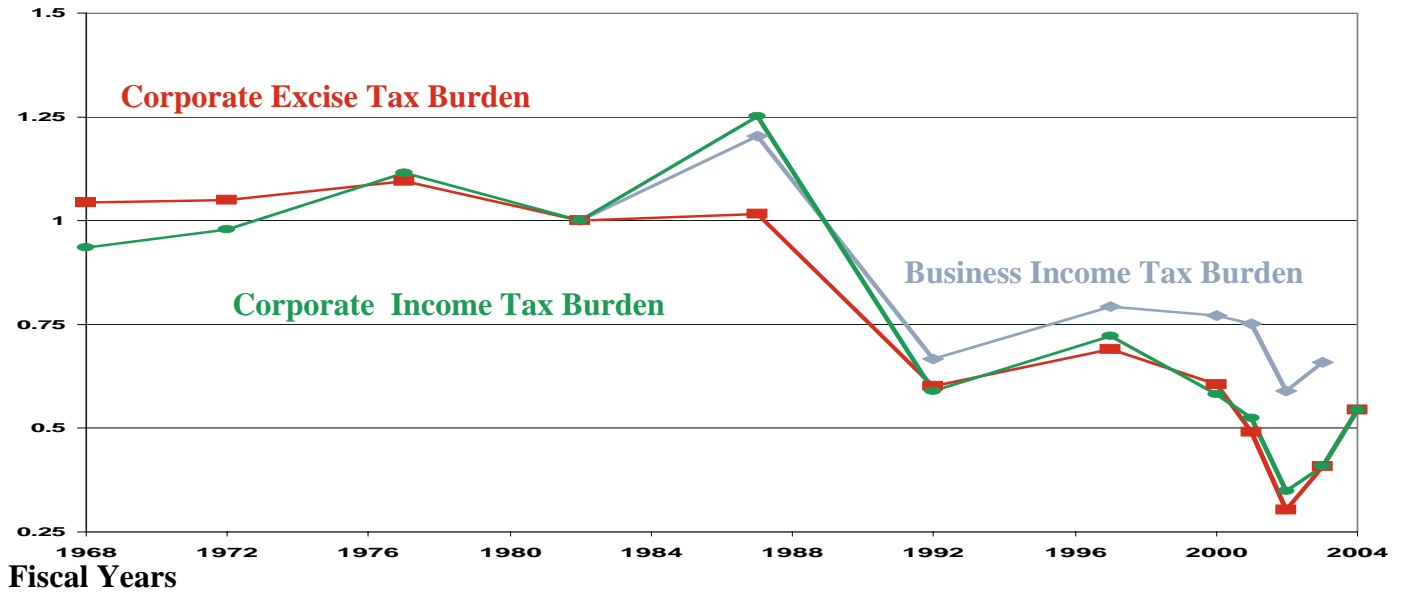
Fiscal Years

Note: see text for definition of business share.

Sources: Census Bureau, Bureau of Economic Analysis, Massachusetts Department of Revenue, Cline et al. (2003), and Savino and Cline (2003).

Figure 5
 Indexes of Tax Burdens, Massachusetts, FY1968-FY2004,*
 selected years

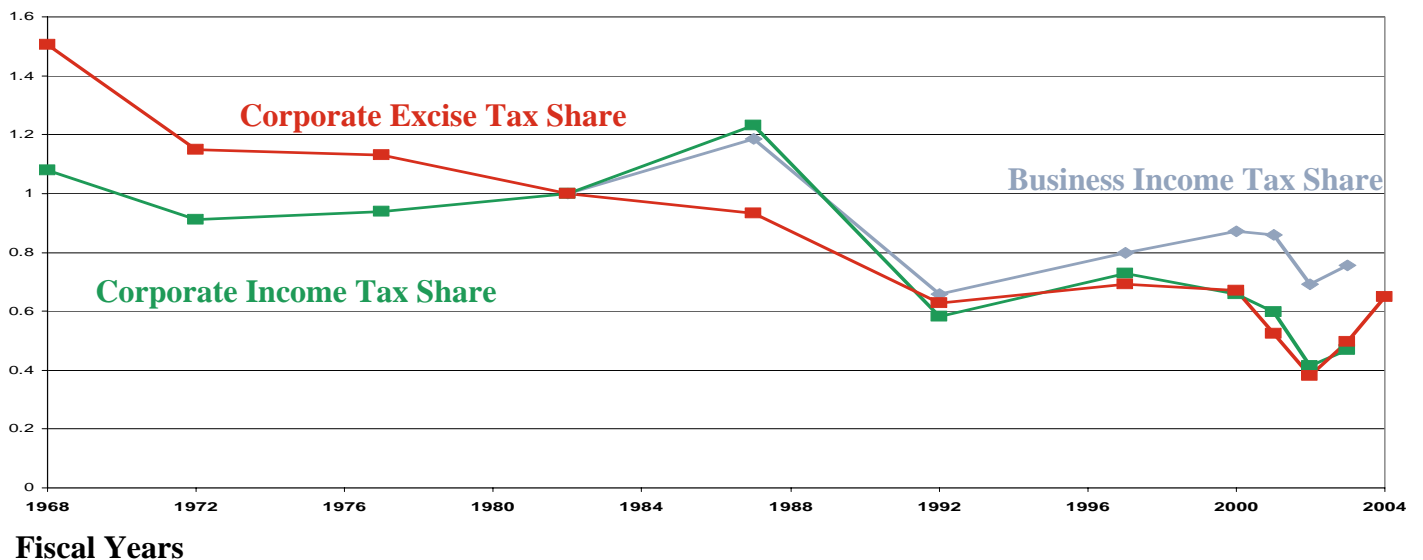
1982=1



*Values for FY2002-FY2004 are estimated. See methodological appendix for details.
 Sources: Massachusetts Department of Revenue, Census Bureau, Bureau of Economic Analysis, and Savino and Cline (2003).

Figure 6
 Indexes of Tax Shares, Massachusetts, FY1968-FY2004,*
 selected years

1982=1

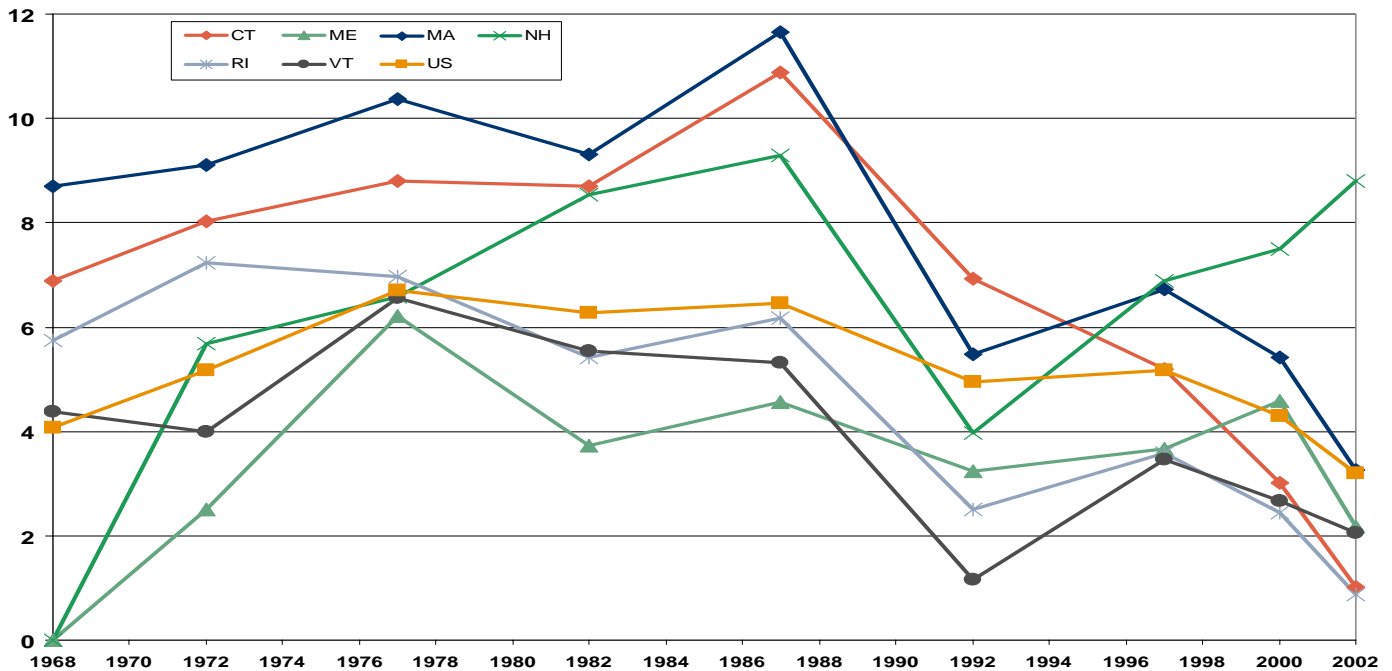


*Values for FY2003-FY2004 are estimated. See methodological appendix for details. See text for definition of corporate income tax share and business income tax share.
 Sources: Census Bureau, Bureau of Economic Analysis, and Massachusetts Department of Revenue.

Figure 7

Corporate Income Tax Burden, the New England States and the United States, FY1968-FY2002, selected years

Dollars



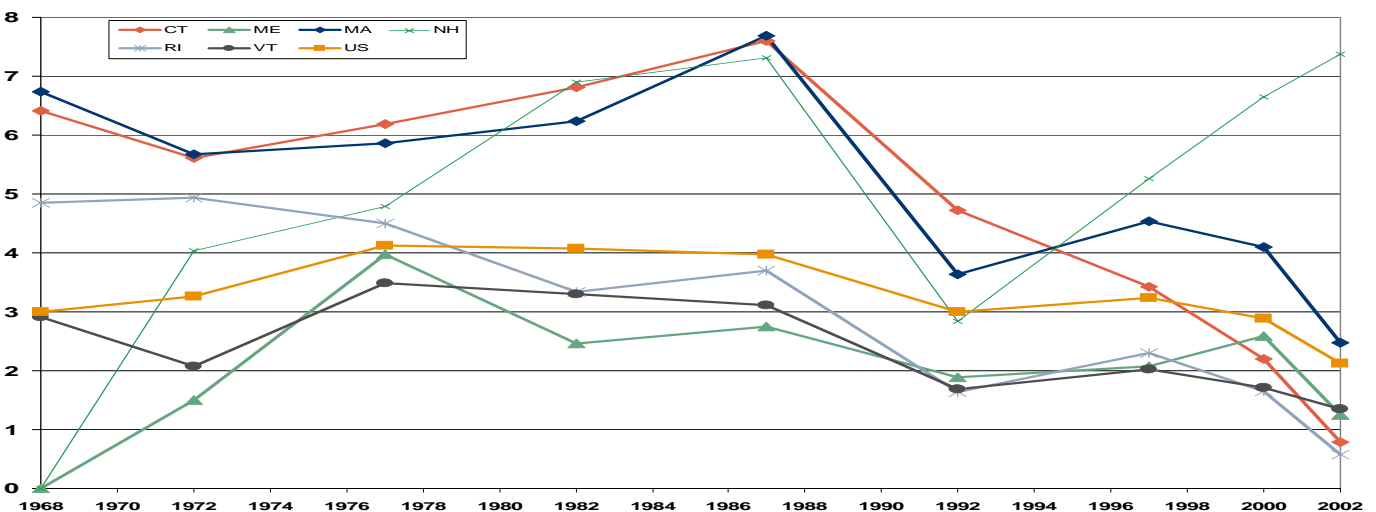
Fiscal Years

Note: see text for definition of corporate income tax burden.
Sources: Census Bureau and Bureau of Economic Analysis.

Figure 8

Corporate Income Tax Share, the New England States and the United States, FY1968-FY2002, selected years

Percent

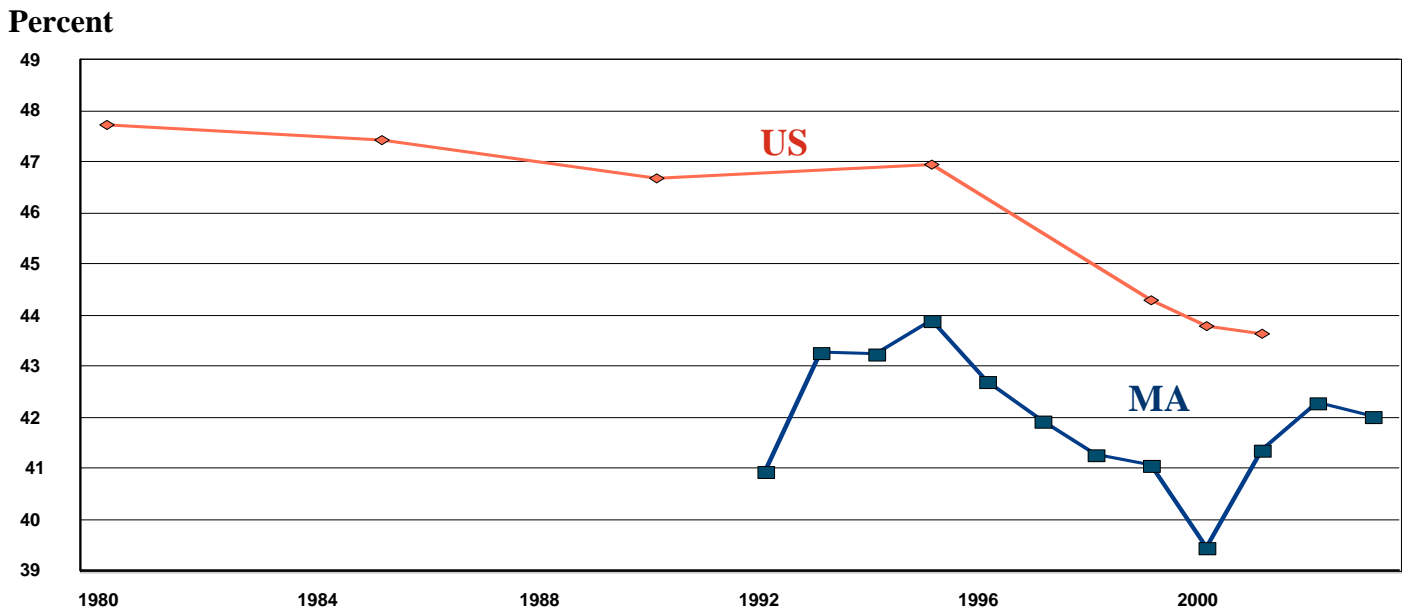


Fiscal Years

Note: see text for definition of corporate income tax share.
Source: Census Bureau.

Figure 9

Expanded Business Share (EBSH), Massachusetts and the United States, FY1980-FY2003,* selected years



Fiscal Years

Value for Massachusetts, FY2003, is estimated. See methodological appendix for details. See text for definition of expanded business share.

Sources: Census Bureau, Bureau of Economic Analysis, Massachusetts Department of Revenue, Cline et al. (2003), and Saviano and Cline (2003).