This memo is preliminary in nature and subject to revision and review. Any views expressed are not necessarily those of the Federal Reserve Bank of Boston or the Federal Reserve System.

To: David Emer, Office of Massachusetts Representative James B. Eldridge
From: Matthew P. Nagowski, Research Assistant
Re: Measures of state and local tax burden
Date: July 13, 2006

Summary

This memo is in response to your inquiry regarding measures of state and local tax burden. In general, the concept of tax burden refers to revenues raised relative to state residents' ability to pay for the revenues. Although several measures are commonly used and every approach has strengths and weaknesses, the best simple measure of tax burden is widely considered to be total own-source revenue as a share of personal income. According to this measure, Massachusetts ranked 43rd in the nation for state and local tax burden.

Measures of revenues raised

The two most common measures of revenues raised are: (1) total state and local taxes, and (2) total state and local own-source revenue. Own-source revenue includes revenues from taxes as well as income from charges, fees, interest, and other miscellaneous revenue sources like the one-time sale of property. It excludes income from the federal government.

Data for both of these measures are available from the U.S. Census Bureau. The Census Bureau conducts a Census of Governments in years ending in 2 and 7. In the intervening years, the Census conducts a random-sample survey of state and some local governments, collecting much the same information. The data are released annually with a two-year lag; the most recent data available are from fiscal year 2004. Summary tables from the Census of Government's State and Local Finance series are available from the Census's website.[1]

Because total state and local own-source revenue includes all possible revenue sources stemming from states and localities, it is probably the best measure of revenues raised for the purpose of calculating a state's tax burden. This is especially true when considering the fact that states and localities are increasingly imposing charges and fees upon their residents.

[1] http://www.census.gov/govs/www/estimate.html

Measures of ability to pay

Researchers commonly use three different measures of ability to pay: state personal income, total taxable resources, and gross state product.

State personal income is the sum of all sources of income (such as wages and salaries, rental income, dividends and interest, and transfer payments) received by or on behalf of persons within a state. It provides a broad measure of individuals' economic well-being. Most often state personal income is used over a calendar year; however, researchers will sometimes average state personal income for the two calendar years spanned by a given fiscal year to better estimate a state's ability to pay over a fiscal year. These data are estimated on both a quarterly and annual basis by the Bureau of Economic Analysis.[2]

State personal income, however, does not take into account the fact that some states raise a sizable portion of their revenues by "exporting" their taxes onto nonresidents. For instance, states like Nevada and Florida are able to raise a sizeable amount of revenue off of nonresident tourists. In these states, nonresidents pay a significant portion of taxes, so state personal income may not be the most relevant measure of the state's ability to pay for its taxes. As a result, two other measures of a state's ability to pay for taxes, total taxable resources and gross state product, attempt to address these problems.

Total taxable resources measures all the resources that a state has at its disposal to tax. This is a broader measure than state personal income because it also includes corporate profits retained for investment purposes, business income received by nonresidents, and resident wage, salary, dividend, and interest income earned out of state. It best reflects the degree to which a state is leveraging all of its possible tax resources. The U.S. Treasury publishes estimates of total taxable resources; the most recent data available are from 2003.[3]

Gross state product is an estimate of the total amount of economic activity in a state. It is calculated as gross economic output (such as sales, receipts, and inventory) minus intermediate inputs (such as consumption of goods and services). It also includes economic activity created through the government purchase of private services. This measure also captures economic activity by nonresidents, and its data are estimated annually by the Bureau of Economic Analysis.[4]

Of the three measures mentioned above, personal income best reflects state residents' ability to pay for state and local government and their resulting tax burden. The problem in using the other two measures in such a calculation is that, for most states, they less effectively reflect the actual tax burden felt by a state's actual residents.

[2] http://www.bea.gov/bea/regional/statelocal.htm
[3] http://www.ustreas.gov/offices/economic-policy/resources/index.shtml
[4] http://www.bea.gov/bea/regional/gsp.htm

What do the data show?

I have attached two tables showing state and local tax burdens for the 50 states and the District of Columbia in fiscal year 2004. The first measures revenues raised as total state and local taxes; the second as total state and local own-source revenues. Both show these measures as a share of state personal income, total taxable resources, and gross state product. As you can see, state tax burden rankings vary widely depending on the data chosen. For instance, Massachusetts ranks anywhere from 24th to 43rd in 2004.

Similar to the case of tourism, some energy-rich states, like Alaska or Wyoming, depend heavily upon royalties and interest payment charges within the energy sector for their revenues. This effectively allows the state to export its tax burden onto nonresidents while providing its residents with a significant financial savings. So even though Alaska appears to have a high own-source revenue burden across all three measures of a state's ability to pay, the actual "tax burden" experienced by the state's residents is quite low.

Further measures

Besides the measures listed above, another tax burden ranking that may be of interest is a study put out by the District of Columbia, ranking tax burdens for a hypothetical family of four across different income levels for the largest city in each state.[5] This study is able to effectively assess the tax burden felt by residents and families—and not private businesses, tourists, or energy companies.

However, an underlying concern with all of the above measures is that they present a one-dimensional perspective of a state and local government's ability to raise revenue. Put another way, they consider all economic activities in a state to be equally valid sources of revenue. But in fact, different tax bases are subject to different levels of taxation across the states, and thus certain economic bases are more plausible sources of revenue for states than others.

Consequently, one resource that you may be interested in is the representative tax system (RTS). Studies examining representative tax systems attempt to measure the fiscal capacity of states—that is, the potential ability of each state and its local governments to raise taxes assuming a standardized tax system. The system is "representative" in that it reflects the prevailing average tax rates across a wide array of potential tax bases. As a result, it does not encounter the problem of one-dimensionality discussed above.

Robert Tannenwald, director of the New England Public Policy Center, has published a series of articles using the representative tax system to measure tax burden, the most recent from fiscal year 1999.[6] Furthermore, the New England Public Policy Center, joint with the Urban/Brookings Tax Policy Center, will be releasing a report later this year that will measure the fiscal capacity of the 50 states using the RTS framework for fiscal year 2002.

---

[5] http://cfo.dc.gov/cfo/frames.asp?doc=/cfo/lib/cfo/services/studies/City04STUDY.pdf

[6] http://www.bos.frb.org/economic/ppdp/2004/ppdp0409.pdf

Researchers at the Federal Reserve Bank of Boston have long been interested in these issues and feel that there is a greater need for public education along these lines. Any measurement and ranking of state and local tax burdens is susceptible to the data and definitions used in the calculations. Moreover, state governments and residents should understand that not all states have the same ability to raise revenues. Significant differences in fiscal endowments may motivate states to adopt different tax and revenue policies.

Table 1: Total state and local tax burden, fiscal year 2004

	As share of personal income (fiscal year 2004)		As share of total taxable resources (calendar year 2003)		As share of gross state product (fiscal year 2004)	
	Share	Rank	Share	Rank	Share	Rank
United States	10.7%		8.4%		9.0%	
Alabama	8.6%	51	7.3%	44	7.7%	44
Alaska	10.9%	19	7.2%	45	7.0%	49
Arizona	10.4%	27	8.2%	29	8.8%	27
Arkansas	10.2%	38	8.5%	23	8.8%	26
California	10.9%	15	8.7%	14	9.1%	21
Colorado	9.0%	47	7.1%	47	7.5%	46
Connecticut	**11.2%**	**12**	**8.6%**	**20**	**9.8%**	**11**
Delaware	10.5%	25	5.4%	51	6.0%	50
DC	14.4%	1	10.5%	3	5.3%	51
Florida	10.2%	37	8.3%	27	9.2%	18
Georgia	9.9%	40	7.5%	40	7.8%	43
Hawaii	12.1%	5	9.6%	5	10.0%	8
Idaho	10.5%	23	8.4%	24	9.3%	17
Illinois	10.4%	29	8.2%	28	8.7%	30
Indiana	10.2%	36	7.9%	37	8.4%	36
Iowa	10.3%	33	7.9%	36	8.5%	34
Kansas	11.1%	14	8.6%	17	9.6%	12
Kentucky	10.4%	26	8.2%	31	8.9%	25
Louisiana	10.9%	16	8.7%	15	8.5%	33
Maine	**13.0%**	**4**	**10.9%**	**2**	**11.9%**	**1**
Maryland	10.5%	24	8.5%	22	10.0%	7
Massachusetts	**10.3%**	**31**	**8.2%**	**30**	**8.9%**	**24**
Michigan	10.4%	28	8.7%	16	9.2%	19
Minnesota	10.9%	18	8.5%	21	9.0%	23
Mississippi	10.3%	34	8.7%	13	9.5%	14
Missouri	9.5%	46	7.5%	41	8.1%	40
Montana	9.8%	43	8.3%	26	9.2%	20
Nebraska	11.5%	9	8.8%	11	9.5%	13
Nevada	10.6%	22	7.8%	39	8.5%	35
New Hampshire	**8.8%**	**49**	**6.9%**	**49**	**8.1%**	**39**
New Jersey	11.2%	11	8.6%	19	9.9%	9
New Mexico	11.3%	10	8.8%	12	9.0%	22
New York	14.2%	2	11.1%	1	11.6%	2
North Carolina	10.3%	30	7.4%	43	7.9%	42
North Dakota	10.3%	32	8.0%	34	8.6%	32
Ohio	11.2%	13	8.9%	9	9.5%	16
Oklahoma	9.9%	41	8.4%	25	8.7%	28

Oregon	9.8%	42	7.9%	38	8.2%	38
Pennsylvania	10.6%	21	8.6%	18	9.5%	15
Rhode Island	**11.7%**	**8**	**9.0%**	**8**	**10.4%**	**4**
South Carolina	10.1%	39	7.9%	35	8.6%	31
South Dakota	8.9%	48	6.5%	50	7.1%	48
Tennessee	8.7%	50	7.0%	48	7.1%	47
Texas	9.7%	44	7.5%	42	7.5%	45
Utah	10.6%	20	8.1%	32	8.3%	37
Vermont	**11.9%**	**6**	**9.8%**	**4**	**10.7%**	**3**
Virginia	9.6%	45	7.2%	46	8.0%	41
Washington	10.2%	35	8.1%	33	8.7%	29
West Virginia	10.9%	17	9.1%	7	10.3%	5
Wisconsin	11.9%	7	9.3%	6	10.1%	6
Wyoming	13.4%	3	8.9%	10	9.8%	10

Table 2: Total state and local own-source revenue burden, fiscal year 2004

	As share of personal income (fiscal year 2004)		As share of total taxable resources (calendar year 2003)		As share of gross state product (fiscal year 2004)	
	Share	Rank	Share	Rank	Share	Rank
United States	15.5%		12.2%		13.0%	
Alabama	15.4%	30	13.0%	13	13.8%	16
Alaska	27.9%	1	18.6%	1	18.1%	1
Arizona	14.3%	41	11.2%	36	12.0%	39
Arkansas	15.2%	32	12.7%	25	13.2%	28
California	16.1%	18	12.8%	19	13.5%	21
Colorado	14.2%	42	11.2%	39	11.7%	41
Connecticut	**13.9%**	**47**	**10.6%**	**46**	**12.1%**	**37**
Delaware	18.0%	5	9.3%	51	10.3%	50
DC	17.9%	7	13.1%	12	6.6%	51
Florida	15.8%	23	12.8%	18	14.3%	10
Georgia	14.5%	39	10.9%	45	11.4%	46
Hawaii	16.1%	19	12.7%	24	13.2%	29
Idaho	16.3%	17	13.0%	15	14.4%	9
Illinois	14.0%	46	11.0%	43	11.6%	45
Indiana	15.5%	29	12.0%	33	12.7%	35
Iowa	16.0%	20	12.3%	27	13.3%	26
Kansas	15.8%	22	12.3%	28	13.7%	18
Kentucky	15.2%	33	11.9%	34	12.9%	33
Louisiana	17.0%	10	13.4%	9	13.2%	27
Maine	**17.8%**	**8**	**14.9%**	**3**	**16.4%**	**3**
Maryland	13.8%	48	11.2%	37	13.3%	25
Massachusetts	**14.1%**	**43**	**11.3%**	**35**	**12.2%**	**36**
Michigan	15.7%	28	13.0%	14	13.8%	15
Minnesota	15.7%	27	12.3%	29	12.9%	32
Mississippi	16.3%	16	13.9%	7	15.1%	6
Missouri	14.0%	45	11.0%	42	11.9%	40
Montana	15.8%	24	13.4%	10	14.8%	8
Nebraska	16.6%	13	12.7%	22	13.8%	17
Nevada	15.1%	35	11.2%	40	12.1%	38
New Hampshire	**12.8%**	**51**	**10.0%**	**49**	**11.7%**	**43**
New Jersey	14.7%	38	11.2%	38	12.9%	34
New Mexico	18.0%	6	14.0%	6	14.3%	11
New York	18.7%	3	14.6%	4	15.2%	5
North Carolina	15.2%	34	10.9%	44	11.7%	44
North Dakota	16.4%	15	12.7%	23	13.7%	19
Ohio	16.0%	21	12.8%	20	13.5%	20
Oklahoma	15.1%	36	12.8%	21	13.4%	24

Oregon	15.8%	25	12.6%	26	13.2%	30
Pennsylvania	15.0%	37	12.2%	30	13.4%	22
Rhode Island	**15.7%**	**26**	**12.0%**	**32**	**13.9%**	**14**
South Carolina	16.7%	11	13.1%	11	14.3%	12
South Dakota	13.3%	49	9.7%	50	10.6%	48
Tennessee	12.9%	50	10.3%	48	10.6%	49
Texas	14.4%	40	11.1%	41	11.1%	47
Utah	17.0%	9	13.0%	16	13.4%	23
Vermont	**16.7%**	**12**	**13.8%**	**8**	**15.0%**	**7**
Virginia	14.1%	44	10.6%	47	11.7%	42
Washington	15.3%	31	12.1%	31	13.0%	31
West Virginia	18.6%	4	15.5%	2	17.6%	2
Wisconsin	16.4%	14	12.9%	17	14.0%	13
Wyoming	22.0%	2	14.5%	5	16.0%	4

Notes on tables

Data on personal income and gross state product for fiscal year 2004 are calculated as the average of the 2003 and 2004 calendar years.

Total taxable resources estimates were not available from the Treasury Department for calendar year 2004 (and thus fiscal year 2004) at the time of these calculations, and thus we used calendar year 2003 data.

Own-source revenue includes all taxes, charges, and fees, miscellaneous revenue sources such as lotteries, as well as one-time revenue sources like interest earnings and the sale of property.