Tax Foundation State and Local Tax Burden Estimates for 2008: An In-Depth Analysis and Methodological Overview

By

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ABSTRACT

Since 1990, the Tax Foundation has been producing state-by-state estimates of state and local tax burdens. Throughout that period, the study has received a great deal of attention from state legislators and the media and in the process, also some critiques from those who either do not like the results or have questions (some valid, some absurd) concerning the methodology. Given the advancements in data availability and computing power, as well as the fact that certain aspects of the methodology regarding state and local burdens have been questioned, it was decided that for 2008, a revision and a detailed discussion of the methodology were in order, in addition to fully separating it from another annual Tax Foundation publication, *Tax Freedom*

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Day. This paper provides a detailed description of the new methodology in the context of presenting advanced state-by-state estimates for fiscal year 2008 (July 1, 2007 – June 30, 2008). The methodology details the income concept, the tax measure chosen, the incidence assumptions made, the allocation of the tax burden given those incidence assumptions and data sources available, and how the results are affected by alternative methodological decisions.

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Introduction and Overview

This working paper discusses the results and methodology of this year's Tax Foundation State and Local Tax Burdens project. The theme of this year's publication, which reflects a revised methodology, is the degree to which each state is able to raise revenues to finance spending mostly for the benefits of own-state residents while exporting the burden of taxation to residents of other states. Such an analysis done every year by the Tax Foundation is value added to the state and local tax burden debate, allowing policymakers, researchers, media, and citizens to go beyond the mere question of where and how much tax dollars flow to governments in each state, but who really pays the taxes to finance state and local government in the United States.

When organizations analyzing federal tax burdens like the Congressional Budget Office and the Urban-Brookings Tax Policy Center measure tax burdens by income group, they go beyond measuring the legal incidence of a tax (who writes the check to the government) and account for the fact that taxes legally imposed on a given person in one income group (such as employers via the payroll tax) can be shifted to a different person in another income group (like employees). Similarly, the Tax Foundation's state and local tax burden estimates account for the shifting of taxes from one group to another under merely a different variable by which households are organized: by state of residence instead of by income level.

While tax collections figures put forth by the Census Bureau's Government Finances Division are useful for some purposes and are cited frequently, dividing total taxes collected by governments in a state and dividing that figure by the state's total income is not a measure of the average effective tax rate imposed on that state's residents. Such a statistic is almost useless from a traditional tax burden perspective because for a given state's income level, the tax collections figure used to calculate (incorrectly) the average effective tax rate (taxes divided by income) does not reflect the taxes that are actually paid out of that given income. For example, one cannot deny the fact that the taxes paid to Alaskan governments are paid not merely out of the income that is earned by Alaskan residents.

The remainder of this paper is outlined as follows. Section I presents state-by-state tax burden (advanced) estimates for Fiscal Year 2008, as well as for other recent years. Furthermore, as a new feature in this year's publication, also presented is a more in-depth look explaining how each state's tax burden includes taxes paid by a given state's residents to its own state and local governments as well as to state and local governments in other states. Then in section II, estimates are shown under alternative scenarios, such as different tax measures, different tax incidence, and different income measures than the ones used in the main burden estimates. Finally, section III provides an in-depth look at the methodology of the state and local tax burden estimates. Section IV concludes.

Are State and Local Tax Burdens Increasing?

Fiscal Year 2008 has just wrapped up for most states, and while overall tax revenues appear to be increasing, they are rising at a much slower rate than the previous few years. And not every state

is the same. Some states' early estimates of FY 2008 collections show a typical annual increase in overall collections, while other states are showing significantly lower revenue growth for FY 2008, including many declines in nominal revenue. Given the decline in nationwide corporate profits, corporate income tax revenue at the state government level is witnessing the sharpest decrease among major tax categories. On the other hand, severance taxes, whose importance varies widely across states, is the fastest growing tax, due largely to the booming petroleum sector. As Table 1 shows, nationwide collections for FY 2008 are projected to fall fastest for corporate income taxes, among major tax sources, while others are projected to grow, albeit at a much slower pace than in previous years. Total state and local tax collections, are projected to grow at a mere 2.4 percent, which is less than half the growth rate from FY 2006 to FY 2007, which was 5.9 percent. It's also down considerably from the 8.9 percent growth rate from FY 2005 to FY 2006.

Table 1: U.S. Total State and Local Tax Collections by Major Tax Source, FY 2004 – 2008*

S&L Tax	FY 2004 Collections	FY 2005 Collections	FY 2006 Collections	FY 2007* Collections	FY 2008* Collections
Property Taxes	317.8 billion	333.6 billion	356.7 billion	381.2 billion	397.3 billion
Sales Taxes (General and Selective)	360.1 billion	383.4 billion	411 billion	428.8 billion	436.2 billion
Individual Income Taxes	216.3 billion	241.7 billion	269.6 billion	290.1 billion	298.0 billion
Corporate Income Taxes	34.1 billion	43.6 billion	53.3 billion	59.2 billion	55.3 billion
Total Taxes	$1,017.5 billion	1,102.0 billion	1,200 billion	1,270.9 billion	1,301.3 billion

Sources: Census Bureau, state government websites, Rockefeller Institute, and Tax Foundation calculations.
Note: Tax collection figures for FY 2008 and FY 2007 (local portion only) rely on projections.

Note that while final revenue statistics from the Census Bureau for FY 2008 are not yet available at the time of this paper's publication, the state and local tax burden estimates for fiscal year 2008 presented in this paper use the most up-to-date data provided by the Census Bureau, the Bureau of Economic Analysis, state government websites, and other sources. It is worth nothing that for all major tax and income categories (except local property taxes), data was available on a state-by-state basis through the first quarter of calendar year 2008. For transparency purposes, however, we use BEA timing terminology and refer to the FY 2008 figures presented here as "advanced estimates," and the FY 2007 figures as "preliminary estimates."

I. Which States' Residents Pay the Most in State and Local Taxes?

This section analyzes which state's residents pay the most and least in taxes to state and local governments across the United States, both in pure dollar amounts and as a percentage of income. This section also discusses the major ways in which taxes can be shifted from one state to another, and how this report accounts for that shifting.

When answering the question of which state's residents pay the most in state and local taxes, it should be made clear that such tax burden measures are not measures of the size of government in a state, nor are they technically measures of the complete burden of taxation faced by a given state's residents. (Compliance costs and economic efficiency losses are not included.) Furthermore, the tax burden estimates presented here do not take into account the fact that the return to that taxation (in the form of government spending) is not measured. These drawbacks, however, are not unique to the Tax Foundation state and local tax burden estimates. No organization that regularly estimates tax burdens at either the federal or state/local level attempts to account for the compliance and economic costs (i.e. deadweight loss or excess burden) of taxation, or the value of government services provided that are financed by those tax dollars.

In rare cases, it is possible for a tax rate cut that actually lowers the economic "burden" of taxation to actually raise revenue or a tax rate increase to actually decrease revenue; and thereby cause the change in tax "burden" as measured via this study's methodology to be in the wrong direction. This is due to the so called Laffer Curve effect, which would theoretically be greater at the state or local levels compared to the federal level due to greater factor mobility within the United States as opposed to between the U.S. and foreign countries, although any mobility is also affected by the change in government services provided (both quantity and quality) to those factors from a given revenue increase.

Table 2 presents a detailed look at the FY 2008 state and local tax burden advanced estimates, indicating the estimated tax collections per capita for FY 2008, as well as how the tax burden is shifted from a collecting state to another state's residents. As one can see from the table, New Jersey, New York, and Connecticut top the lists in terms of state and local tax burdens. There are two reasons for this. First, New Jersey, New York, and Connecticut do have high levels of government spending, which translates into higher necessary tax revenues. And second, each of the states in that Tri-State region have very high incomes compared to the national average, which means that residents tend to import a large amount of other states' taxes, most notably as it relates to capital income and the importation of taxes on capital. At the bottom are states that export a significant amount of taxes: Alaska, Nevada, Wyoming, and Florida.

In terms of tax exporting, the table shows what most would expect. First, states with heavy tourism industries are able to export a large fraction of their sales tax burdens, Nevada being the most notable example. Maine and Vermont, due to the large number of homes that are vacation in the two states, are able to export a large fraction of their property taxes to other states, mostly other New England states such as Connecticut and Massachusetts. Sales taxes in the District of Columbia are another example, a large fraction of which are paid by Marylanders and Virginians where a large fraction of residents work in and live near the nation's capital. This is the primary

reason why Maryland has a much higher ranking in this year's methodology compared to last year. Note that this only applies to sales taxes because the District is prohibited by Congress from taxing the wages of nonresident commuters.

Another major factor in determining the degree to which a state's tax burden is exported is the degree to which businesses initially pay the tax. (All taxes are eventually borne by individuals.) States whose general sales taxes are levied on business-to-business transactions are more likely to have their tax burdens paid by out-of-state residents, although it does depend upon the industry profile of a state. Under the assumption that such taxes on business inputs are passed onto consumers (which is the assumption made in the estimates presented in this paper), business inputs on manufacturing are more likely to be consumed by out-of-state residents whereas taxes on retail businesses are more likely to be borne by domestic residents. Using data on sales taxes paid by businesses from the annual study of business taxation from the Council on State Taxation (COST) along with GDP by State data from BEA, the estimates in this paper account for the varying degree of sales taxation of business inputs across states, especially states like Washington which levy a specific tax on gross receipts. Similar to sales and gross receipts taxes paid by businesses are severance taxes imposed on companies who extract natural resources from property located in a state. The most notable is taxes imposed on resource extraction by Alaska, Wyoming and Louisiana, which allow these states to export much of their tax burdens to energy consumers throughout the United States (under the assumption that energy consumers bear the full burden of the tax). Using Department of Energy Data, this project allocates those severance taxes imposed on energy using energy consumption data by state by sector.
Similar to the sales taxes paid by business, a large portion of property taxes are paid by businesses as well, while the remainder are paid by homeowners. States that raise a large fraction of their property taxes via business property are more likely to export their tax burdens as opposed to those that raise the bulk of their property taxes via owner-occupied housing.

Finally, individual income taxes are another major tax source that is often paid by out-of-state residents, although the extent to which can vary considerably across states. Beginning in this year's tax burdens project, data from the Census Bureau, BEA, and individual state revenue departments is used to estimate that portion of income taxes within each state that is paid by out-of-state income earners (and which states they reside), under the economic assumption that income taxes are borne by the tax filers themselves. (This is the same assumption used by every federal tax burden study with respect to federal income taxes.) This is especially important for states where a large portion of wage income is earned by commuters from other states such as New York (e.g. New Jersey and Connecticut residents commuting into New York City). Note that some states have reciprocity agreements with other states whereby neither taxes the wage income earned by residents of that other state, and the estimates presented in this paper take these agreements into account.

Table 2: Detailed Analysis of State and Local Tax Burdens, FY 2008 (Advanced Estimates)

State	S&L Tax Collections per capita	Collections Paid by Out-of-State Residents per capita)	Taxes Paid to Other States per capita	Taxes Paid per capita	Income per capita	Avg. Eff. S&L Tax Rate	Rank
U.S.	4,294	1,370	1,358	4,283	44,254	9.7%	0
AL	2,949	972	1,168	3,144	36,372	8.6%	38
AK	7,864	6,431	1,438	2,871	44,872	6.4%	50
AZ	3,286	1,116	1,074	3,244	38,174	8.5%	41
AR	3,284	969	1,036	3,351	33,395	10.0%	14
CA	4,752	1,069	1,345	5,028	47,706	10.5%	6
CO	3,989	1,305	1,675	4,359	48,300	9.0%	34
CT	6,081	1,583	2,509	7,007	63,160	11.1%	3
DE	4,670	2,306	1,889	4,253	44,889	9.5%	24
FL	3,613	1,230	1,057	3,441	46,293	7.4%	47
GA	3,612	1,033	1,156	3,735	37,850	9.9%	16
HI	5,284	1,585	1,221	4,920	46,512	10.6%	5
ID	3,400	1,026	1,296	3,670	36,492	10.1%	13
IL	4,428	1,479	1,398	4,346	46,693	9.3%	30
IN	3,459	1,110	1,154	3,502	37,279	9.4%	28
IA	3,763	1,500	1,327	3,589	38,636	9.3%	31
KS	4,185	1,725	1,451	3,911	40,784	9.6%	21
KY	3,205	1,004	1,042	3,243	34,339	9.4%	25
LA	4,374	2,281	1,193	3,286	39,116	8.4%	42
ME	4,543	1,842	1,135	3,835	38,309	10.0%	15
MD	4,945	883	1,607	5,669	52,709	10.8%	4
MA	5,227	1,617	1,768	5,377	56,661	9.5%	23
MI	3,751	1,215	1,158	3,694	39,273	9.4%	27
MN	4,623	1,295	1,360	4,688	46,106	10.2%	12
MS	3,076	1,303	1,061	2,834	31,836	8.9%	36
MO	3,327	1,066	1,248	3,508	38,084	9.2%	32
MT	3,670	1,710	1,199	3,158	36,793	8.6%	40
NE	4,144	1,532	1,371	3,983	40,499	9.8%	17
NV	4,023	2,071	1,293	3,245	49,371	6.6%	49
NH	3,747	1,923	1,818	3,642	48,033	7.6%	46
NJ	6,127	1,752	2,234	6,610	56,116	11.8%	1
NM	3,890	1,839	1,063	3,114	36,031	8.6%	39
NY	7,206	2,361	1,573	6,419	55,032	11.7%	2
NC	3,570	973	1,066	3,663	37,508	9.8%	20
ND	4,618	2,451	1,470	3,637	39,612	9.2%	33
OH	4,084	1,147	1,112	4,049	38,925	10.4%	7
OK	3,620	1,340	1,481	3,761	38,415	9.8%	19

OR	3,525	987	1,181	3,719	39,444	9.4%	26
PA	4,303	1,249	1,409	4,463	43,796	10.2%	11
RI	4,586	1,685	1,633	4,533	44,463	10.2%	10
SC	3,133	1,085	1,079	3,127	35,419	8.8%	37
SD	3,209	1,563	1,434	3,079	39,103	7.9%	45
TN	3,033	1,254	1,382	3,160	38,090	8.3%	44
TX	3,502	1,420	1,498	3,580	42,796	8.4%	43
UT	3,354	1,048	1,140	3,446	35,971	9.6%	22
VT	4,852	1,780	1,337	4,410	42,626	10.3%	8
VA	4,345	1,063	1,388	4,669	47,666	9.8%	18
WA	4,331	1,374	1,377	4,334	48,574	8.9%	35
WV	3,596	1,614	1,018	3,000	32,145	9.3%	29
WI	4,270	1,223	1,147	4,194	40,953	10.2%	9
WY	6,947	5,022	1,788	3,714	53,163	7.0%	48
DC	8,316	3,972	2,964	7,308	70,730	10.3%	(8)

Sources: Tax Foundation calculations using data from multiple sources, primarily Census Bureau, Rockefeller Institute, Bureau of Economic Analysis, Council on State Taxation, and Travel Industry Association. Notes: U.S. column is U.S. average. D.C. not included in rankings, but figure in ( ) indicates what rank D.C. would have if ranked.

The next two tables, Tables 3 and 4, show how state and local tax burdens (as measured via average effective tax rates) have varied over the past thirty years. State and local tax burdens, on average for the nation, have grown slightly from the mid 1990s to the present, while federal tax burdens have fallen (not discussed in this paper). States vary across time for a variety of reasons, including policy changes, shifts in state economies and the macroeconomy, population and demographic shifts, etc. Readers should also note that just because some individual may have held an elected office during a period of time in which a state's state and local tax burden estimate changed does not warrant credit or blame to that given elected official for that change.

Table 3: State and Local Tax Burden Estimates by State, Selected Years FY 1977 – FY 2008

State	1977	1980	1985	1990	1995	2000	2005	2006	2007	2008
U.S.	10.3%	9.5%	9.7%	9.9%	10.2%	9.5%	9.8%	9.9%	9.9%	9.7%
AL	8.9%	8.6%	8.8%	8.9%	8.8%	8.6%	8.6%	8.7%	8.8%	8.6%
AK	12.8%	8.9%	7.0%	6.7%	6.3%	5.8%	5.7%	6.4%	6.5%	6.4%
AZ	10.4%	9.4%	9.3%	9.5%	9.5%	8.7%	8.9%	8.8%	8.7%	8.5%
AR	9.7%	9.2%	9.3%	9.3%	9.8%	9.6%	10.1%	10.2%	10.3%	10.0%
CA	11.6%	10.1%	10.1%	10.4%	10.7%	10.5%	10.5%	10.8%	10.8%	10.5%
CO	10.5%	9.6%	9.7%	9.9%	9.7%	9.1%	9.1%	9.4%	9.3%	9.0%
CT	10.2%	9.1%	9.6%	9.9%	11.8%	10.9%	11.5%	11.4%	11.3%	11.1%
DE	9.7%	9.3%	9.1%	8.6%	9.0%	8.5%	9.5%	9.9%	9.7%	9.5%
FL	8.4%	7.7%	7.8%	8.1%	8.6%	7.9%	8.0%	8.0%	7.9%	7.4%
GA	9.6%	9.2%	9.3%	9.9%	9.9%	9.5%	9.4%	9.9%	10.1%	9.9%
HI	10.6%	10.7%	10.1%	10.8%	11.0%	10.3%	10.2%	10.4%	10.6%	10.6%
ID	10.8%	9.8%	10.2%	11.0%	10.9%	10.4%	10.3%	10.0%	10.2%	10.1%
IL	9.9%	9.4%	9.4%	9.7%	9.7%	8.9%	9.3%	9.5%	9.4%	9.3%
IN	9.4%	8.3%	9.2%	9.3%	9.4%	8.9%	9.2%	9.4%	9.5%	9.4%
IA	10.4%	9.6%	9.9%	10.3%	10.5%	9.3%	9.7%	9.6%	9.4%	9.3%
KS	9.8%	9.0%	9.2%	9.6%	9.9%	9.3%	9.9%	10.0%	9.9%	9.6%
KY	10.0%	9.2%	9.4%	9.6%	10.5%	9.8%	9.8%	9.7%	9.6%	9.4%
LA	7.9%	7.6%	8.2%	8.1%	8.1%	8.3%	8.2%	9.6%	8.7%	8.4%
ME	9.6%	9.4%	9.8%	10.3%	10.4%	10.3%	11.0%	10.8%	10.3%	10.0%
MD	11.1%	10.5%	10.3%	10.6%	10.8%	10.2%	10.5%	10.6%	10.8%	10.8%
MA	11.4%	10.7%	9.9%	10.2%	10.6%	9.3%	9.9%	9.9%	9.8%	9.5%
MI	10.0%	9.8%	10.3%	9.8%	9.6%	9.4%	9.7%	9.6%	9.5%	9.4%
MN	11.5%	10.4%	11.1%	10.9%	11.0%	10.2%	9.9%	10.5%	10.4%	10.2%
MS	10.3%	9.2%	9.1%	9.0%	9.5%	9.2%	9.3%	9.3%	9.2%	8.9%
MO	9.3%	8.8%	8.7%	9.2%	9.7%	9.2%	9.5%	9.5%	9.4%	9.2%
MT	10.4%	9.1%	9.1%	9.8%	9.5%	8.7%	8.8%	8.7%	8.6%	8.6%
NE	10.9%	10.0%	9.6%	10.1%	10.2%	9.4%	10.4%	10.2%	10.1%	9.8%
NV	7.9%	6.7%	6.9%	7.1%	7.5%	6.8%	7.1%	6.9%	6.9%	6.6%
NH	8.7%	7.8%	7.7%	8.2%	8.8%	7.3%	7.8%	7.8%	7.7%	7.6%
NJ	11.1%	10.1%	10.1%	10.5%	11.5%	10.4%	11.4%	11.8%	11.9%	11.8%
NM	8.7%	8.3%	8.2%	9.5%	9.5%	9.3%	9.0%	9.0%	8.8%	8.6%
NY	12.8%	12.2%	12.1%	12.2%	12.4%	11.2%	11.9%	11.8%	11.7%	11.7%
NC	10.0%	9.4%	9.5%	9.9%	10.2%	9.5%	9.8%	10.1%	10.0%	9.8%
ND	10.2%	8.7%	8.9%	9.2%	9.8%	9.2%	9.0%	8.9%	9.0%	9.2%
OH	8.7%	8.2%	9.3%	9.6%	10.2%	9.9%	10.3%	10.5%	10.5%	10.4%
OK	8.9%	8.6%	9.0%	9.8%	9.9%	9.7%	9.6%	9.8%	10.0%	9.8%
OR	11.0%	10.2%	10.7%	10.6%	10.4%	9.6%	9.6%	9.9%	9.6%	9.4%
PA	10.2%	9.8%	9.8%	9.8%	10.4%	9.6%	10.3%	10.4%	10.3%	10.2%
RI	10.2%	9.7%	9.8%	10.0%	10.7%	10.2%	11.2%	10.9%	10.5%	10.2%
SC	9.4%	9.2%	9.3%	9.5%	9.2%	9.1%	9.1%	9.0%	9.2%	8.8%

SD	10.3%	9.2%	8.9%	8.9%	8.6%	7.8%	7.8%	7.8%	7.7%	7.9%
TN	9.2%	8.2%	8.4%	8.2%	8.3%	7.8%	8.3%	8.5%	8.4%	8.3%
TX	8.1%	7.4%	7.7%	8.5%	8.9%	8.0%	8.2%	8.2%	8.3%	8.4%
UT	10.7%	10.2%	10.3%	10.3%	10.5%	10.3%	10.2%	10.3%	10.1%	9.6%
VT	11.0%	9.6%	9.8%	10.0%	10.0%	9.5%	10.5%	10.9%	10.6%	10.3%
VA	9.7%	9.2%	9.2%	9.4%	9.7%	9.4%	9.7%	9.7%	10.0%	9.8%
WA	10.0%	9.2%	9.4%	9.9%	10.3%	8.5%	9.0%	9.2%	9.1%	8.9%
WV	9.9%	9.7%	10.4%	9.4%	9.1%	9.2%	9.5%	9.5%	9.4%	9.3%
WI	11.9%	10.7%	11.3%	11.1%	11.4%	10.9%	10.7%	10.7%	10.4%	10.2%
WY	9.1%	8.3%	8.8%	7.7%	7.3%	6.9%	6.6%	7.3%	7.0%	7.0%
DC	10.9%	11.5%	11.3%	11.4%	11.1%	11.2%	10.9%	11.2%	10.8%	10.3%

Sources: Tax Foundation calculations using data from multiple sources, primarily Census Bureau, Rockefeller Institute, Bureau of Economic Analysis, Council on State Taxation, and Travel Industry Association. Note: Fiscal Year 2008 figures are advanced estimates, while FY 2007 figures are preliminary estimates.

II. Alternative Presentations of the Results

In this section, advanced estimates for state and local tax burdens for 2008 are shown under various alternative scenarios, including two modified income concepts, an alternative assumption as it relates to the economic incidence of taxes on capital, and alternative definitions of tax, that are broader and includes items that are not labeled as taxes by BEA or Census such as lotteries, toll roads, and the net financing of intergovernmental transfers from the federal government.

In table 4 below, columns 2 and 3 show the rates (and rank) under the current methodology, while columns 4 through 9 (Alts. #1, #2, and #3) show the results when three alternative income measures are used, two narrower and one broader. The narrowest definition (Alt. 1) is merely personal income by state. The other narrow definition (Alt. 2) is the previous income measure used by the Tax Foundation's state and local tax burden estimates, which was Net National Product allocated to states using personal income. The third alternative definition of income (Alt. 3), the broader definition, follows closely to that used by CBO as part of its annual Effective Federal Tax Rates study. The difference between the broader income measure and the income measure used in this study is that the broader income measure includes many of the major components of current year contributions for government social insurance, and it does not subtract current year employer contributions for pension and life insurance. This broader income measure was not chosen because it tends to double-count significant amounts of income over time, but there are other plusses to using it, largely depending upon one's view towards Social Security and Medicare contributions and benefits. For a more detailed discussion, see the methodology section.

In columns 10 and 11 (Alt. #4) is a presentation of the results under an alternative assumption as it relates to taxes on capital, specifically corporate income taxes and property taxes paid by business. This alternative presentation shows how the results change when such taxes are fully allocated on the basis of capital income as opposed to a 50/50 split of earnings share and capital income share.

Table 4: Advanced Estimates of FY 2008 State and Local Burdens, Alternative Income Concepts and Tax Incidence Assumptions *(Full Table Results Forthcoming)*

State	Rate T.F.	Rank T.F.	Rate Alt. 1	Rank Alt. 1	Rate Alt. 2	Rank Alt. 2	Rate Alt. 3	Rank Alt. 3	Rate Alt. 4	Rank Alt. 4
U.S.	9.7%	N/A	10.9%	N/A	10.3%	N/A		N/A		N/A
AL	8.6%	38	9.5%	41	9.1%	41				
AK	6.4%	50	6.9%	50	6.6%	50				
AZ	8.5%	41	9.7%	37	9.3%	37				
AR	10.0%	14	10.8%	17	10.3%	17				
CA	10.5%	6	11.8%	6	11.3%	6				
CO	9.0%	34	10.3%	29	9.9%	29				
CT	11.1%	3	12.7%	3	12.1%	3				
DE	9.5%	24	10.4%	27	9.9%	27				
FL	7.4%	47	8.8%	46	8.4%	46				
GA	9.9%	16	11.1%	16	10.5%	16				

HI	10.6%	5	12.3%	4	11.7%	4				
ID	10.1%	13	11.6%	8	11.0%	8				
IL	9.3%	30	10.5%	23	10.0%	23				
IN	9.4%	28	10.2%	30	9.8%	30				
IA	9.3%	31	10.0%	33	9.5%	33				
KS	9.6%	21	10.4%	28	9.9%	28				
KY	9.4%	25	10.2%	31	9.7%	31				
LA	8.4%	42	9.1%	44	8.7%	44				
ME	10.0%	15	11.2%	13	10.7%	13				
MD	10.8%	4	12.1%	5	11.5%	5				
MA	9.5%	23	10.7%	21	10.2%	21				
MI	9.4%	27	10.4%	25	9.9%	25				
MN	10.2%	12	11.2%	14	10.7%	14				
MS	8.9%	36	9.6%	39	9.1%	39				
MO	9.2%	32	10.0%	32	9.5%	32				
MT	8.6%	40	9.6%	40	9.1%	40				
NE	9.8%	17	10.6%	22	10.1%	22				
NV	6.6%	49	7.8%	49	7.4%	49				
NH	7.6%	46	8.6%	47	8.2%	47				
NJ	11.8%	1	13.2%	2	12.5%	2				
NM	8.6%	39	9.6%	38	9.2%	38				
NY	11.7%	2	13.2%	1	12.6%	1				
NC	9.8%	20	10.7%	19	10.2%	19				
ND	9.2%	33	9.9%	35	9.4%	35				
OH	10.4%	7	11.4%	10	10.9%	10				
OK	9.8%	19	10.7%	20	10.2%	20				
OR	9.4%	26	10.5%	24	10.0%	24				
PA	10.2%	11	11.3%	12	10.7%	12				
RI	10.2%	10	11.3%	11	10.8%	11				
SC	8.8%	37	9.9%	36	9.4%	36				
SD	7.9%	45	8.8%	45	8.4%	45				
TN	8.3%	44	9.3%	43	8.8%	43				
TX	8.4%	43	9.4%	42	8.9%	42				
UT	9.6%	22	10.8%	18	10.3%	18				
VT	10.3%	8	11.8%	7	11.2%	7				
VA	9.8%	18	11.1%	15	10.6%	15				
WA	8.9%	35	10.4%	26	9.9%	26				
WV	9.3%	29	10.0%	34	9.5%	34				
WI	10.2%	9	11.4%	9	10.9%	9				
WY	7.0%	48	8.3%	48	7.9%	48				
DC	10.3%	(8)	11.7%	(8)	11.1%	0				

Sources: Tax Foundation calculations using data from multiple sources, primarily Census Bureau, Rockefeller Institute, Bureau of Economic Analysis, Council on State Taxation, and Travel Industry Association. Note: D.C. not included in rankings, but figure in ( ) indicates what rank D.C. would have if ranked.

Next, comparisons are presented for FY 2006 using different scenarios of what is included in the tax measure. The measure of tax used in the state and local estimates presented thus far in this paper only includes those revenue items at the state and local level that are defined as a tax by the Bureau of Economic Analysis. In the table below (Table 5), we show how the tax rates and rankings change when other revenue items are added to the tax measure, such as lotteries and toll roads. It should be noted that just as the previous tax measure accounted for the fact that nonresidents pay some fraction of taxes to any given state, the alternative revenue sources counted as a tax in this presentation are also adjusted for payments by nonresidents.

Under the first alternative presentation in Table 5, (Alt. 5), the state and local revenue components that BEA considers a "government enterprise" are added to the current tax measure, except for public transit and housing/urban renewal as they are almost always net subsidies. (We don't count them as a negative tax.) In the next alternative (Alt. 6), we add the total state and local deficit (or surplus) for a state to the tax total and distribute it to states under the Alt. 5 distribution of taxes (most of it being borne by the own state). This Ricardian equivalence assumption assumes that the entire deficit is borne by present-day taxpayers with no affect on spending. This alternative definition of tax changes the rankings somewhat, but not by much due to most states having a balanced budget requirement.

In the final alternative tax measure (Alt. 7), we add to the Alt. 6 measure the implicit tax charged to a state's residents by the federal government's role in intergovernmental transfers. Specifically, using estimates of each state's share of total federal taxes paid by state, we allocate the federal tax burden imposed on each state to finance all federal to state-local intergovernmental transfers less that state's federal intergovernmental receipts. (For some states, that figure will be negative; others, positive. Nationwide, it sums to zero.) While this Alt. 7 measure does include the implicit deficit tax from Alt. 6, each state's deficit tax is reallocated using the new distribution of state and local taxes that includes the federal component. Overall, one should note that this federal adjustment is far from perfect as there is a high degree of arbitrariness, and it suffers from problems of fungibility, including that of federal deficit-financing.

Table 5: Estimates of FY 2006 State and Local Tax Burdens, Alternative Definitions of Tax
(Full Table Results Forthcoming)

State	Rate T.F.	Rank T.F.	Rate Alt. 5	Rank Alt. 5	Rate Alt. 6	Rank Alt. 6	Rate Alt. 7	Rank Alt. 7
U.S.	9.9%	N/A		N/A		N/A		N/A
AL	8.7%	42						
AK	6.4%	50						
AZ	8.8%	40						
AR	10.2%	16						
CA	10.8%	6						
CO	9.4%	34						
CT	11.4%	3						
DE	9.9%	22						

FL	8.0%	45						
GA	9.9%	20						
HI	10.4%	12						
ID	10.0%	18						
IL	9.5%	32						
IN	9.4%	33						
IA	9.6%	28						
KS	10.0%	19						
KY	9.7%	25						
LA	9.6%	29						
ME	10.8%	7						
MD	10.6%	9						
MA	9.9%	23						
MI	9.6%	27						
MN	10.5%	11						
MS	9.3%	35						
MO	9.5%	30						
MT	8.7%	41						
NE	10.2%	15						
NV	6.9%	49						
NH	7.8%	46						
NJ	11.8%	1						
NM	9.0%	37						
NY	11.8%	2						
NC	10.1%	17						
ND	8.9%	39						
OH	10.5%	10						
OK	9.8%	24						
OR	9.9%	21						
PA	10.4%	13						
RI	10.9%	5						
SC	9.0%	38						
SD	7.8%	47						
TN	8.5%	43						
TX	8.2%	44						
UT	10.3%	14						
VT	10.9%	4						
VA	9.7%	26						
WA	9.2%	36						
WV	9.5%	31						
WI	10.7%	8						
WY	7.3%	48						
DC	11.2%	(4)						

Sources: Tax Foundation calculations using data from multiple sources, primarily Census Bureau, Rockefeller Institute, Bureau of Economic Analysis, Council on State Taxation, and

Travel Industry Association. Note: D.C. not included in rankings, but figure in ( ) indicates what rank D.C. would have if ranked.

Collections vs. Economic Incidence

Table 6 below shows how the Tax Foundation estimates of state and local tax burdens differ from other supposed "tax burden" measures that are frequently cited. The most popular such estimate of tax burdens comes from the Federation of Tax Administrators (FTA), which takes tax collections for a state and divides that number by the state's personal income (BEA measure), labeling such a calculated figure the state's "tax burden." As explained earlier, these statistics are essentially useless from the traditional average effective tax rate framework. Nevertheless, we felt it was necessary to present this comparison given that these figures are often used to criticize the Tax Foundation's estimates by those who either deliberately ignore or do not understand the concept of tax exporting. Note that the table shows the "collections divided by income method" using two definitions of income: personal income, as FTA uses, and the income measure used for the estimates presented in this paper (T.F.I.).

Table 6: Advanced Estimates of FY 2008 State and Local Burdens, Incidence vs. Collections

State	Rate T.F.	Rank T.F.	Rate Coll. / P.I.	Rank	Rate Coll. / T.F.I.	Rank
U.S.	9.7%	0	10.9%	0	9.7%	0
AL	8.6%	38	8.9%	48	8.1%	47
AK	6.4%	50	19.0%	1	17.5%	1
AZ	8.5%	41	9.9%	41	8.6%	42
AR	10.0%	14	10.6%	26	9.8%	21
CA	10.5%	6	11.2%	16	10.0%	20
CO	9.0%	34	9.5%	43	8.3%	43
CT	11.1%	3	11.0%	21	9.6%	25
DE	9.5%	24	11.5%	14	10.4%	14
FL	7.4%	47	9.3%	45	7.8%	49
GA	9.9%	16	10.7%	25	9.5%	27
HI	10.6%	5	13.2%	5	11.4%	7
ID	10.1%	13	10.7%	24	9.3%	34
IL	9.3%	30	10.7%	23	9.5%	29
IN	9.4%	28	10.1%	37	9.3%	35
IA	9.3%	31	10.5%	30	9.7%	23
KS	9.6%	21	11.1%	18	10.3%	16
KY	9.4%	25	10.1%	38	9.3%	32
LA	8.4%	42	12.1%	9	11.2%	9
ME	10.0%	15	13.3%	4	11.9%	4
MD	10.8%	4	10.5%	28	9.4%	31
MA	9.5%	23	10.4%	34	9.2%	36
MI	9.4%	27	10.6%	27	9.6%	26
MN	10.2%	12	11.0%	20	10.0%	18

MS	8.9%	36	10.4%	33	9.7%	24
MO	9.2%	32	9.5%	44	8.7%	41
MT	8.6%	40	11.1%	17	10.0%	19
NE	9.8%	17	11.1%	19	10.2%	17
NV	6.6%	49	9.7%	42	8.1%	46
NH	7.6%	46	8.9%	50	7.8%	50
NJ	11.8%	1	12.2%	8	10.9%	10
NM	8.6%	39	12.0%	10	10.8%	11
NY	11.7%	2	14.8%	3	13.1%	2
NC	9.8%	20	10.4%	31	9.5%	28
ND	9.2%	33	12.6%	7	11.7%	5
OH	10.4%	7	11.5%	13	10.5%	12
OK	9.8%	19	10.3%	36	9.4%	30
OR	9.4%	26	9.9%	39	8.9%	38
PA	10.2%	11	10.9%	22	9.8%	22
RI	10.2%	10	11.4%	15	10.3%	15
SC	8.8%	37	9.9%	40	8.8%	40
SD	7.9%	45	9.2%	46	8.2%	44
TN	8.3%	44	8.9%	49	8.0%	48
TX	8.4%	43	9.2%	47	8.2%	45
UT	9.6%	22	10.5%	29	9.3%	33
VT	10.3%	8	13.0%	6	11.4%	6
VA	9.8%	18	10.4%	35	9.1%	37
WA	8.9%	35	10.4%	32	8.9%	39
WV	9.3%	29	11.9%	11	11.2%	8
WI	10.2%	9	11.6%	12	10.4%	13
WY	7.0%	48	15.5%	2	13.1%	3
DC	10.3%	(8)	13.3%	(4)	11.8%	(5)

Sources: Tax Foundation calculations using data from multiple sources, primarily Census Bureau, Rockefeller Institute, Bureau of Economic Analysis, Council on State Taxation, and Travel Industry Association. Note: D.C. not included in rankings, but figure in ( ) indicates what rank D.C. would have if ranked. P.I. stands for Personal Income. T.F.I. refers to the Tax Foundation income measure used to calculate state and local tax burdens.

As the last column of table 5 shows, for some states, tax collections can differ significantly from the taxes paid by their own residents. The rates and rankings differ significantly in some cases because of the fact that the economic burden of a tax imposed by a government in one state actually falls on a resident of another state. And while policymakers in one state may have little control over the fact that their residents are paying taxes levied by other states, the reality is that they are paying those taxes, regardless of which state is collecting them and who is to blame (or credit) for the high (or low) tax burden.

III. Methodology: What is Income, What is a Tax, and Who Pays?

This year's state and local tax burden methodology has been revised relative to previous years, and reflects an overall commitment to using the latest advances in data availability that are now available yet were not available in previous years. The basic outline of the allocation of state and local tax burdens to state residents is as follows. Each tax collection amount from the Census Bureau (or projected up by the Tax Foundation) is narrowed even further into different collection categories (such as property taxes being narrowed to personal property, property taxes on business property, seasonal homes real estate and residential real estate). Then, those collection figures are allocated to states using some allocator, or the collection amount is assumed to be borne fully by the residents of the collecting state.

What Is Income?

The definition of income used to calculate average effective tax rates in this study is a hybrid between personal income and the income concept that is used by the Congressional Budget Office in its annual "Effective Federal Tax Rates" study. This measure differs somewhat from Tax Freedom Day, which is merely tax collections divided by Net National Product (similar to GDP). Specifically, the income measure used here adds to personal income the following: capital gains realizations, pension and life insurance distributions, corporate income taxes paid, and taxes on production and imports less subsidies. It subtracts from personal income the non-fungible portion of Medicare and Medicaid, as well as the estimated Medicare benefits that are provided via supplementary contributions (the same for veterans' life insurance). This measure also subtracts the initial contributions to pension income and life insurance from employers, as well as the annual investment income of life insurance carriers and pensions (much of which is imputed by BEA) that is included in personal income. Note that some small fraction of income is still double-counted over a lifetime, most notably the contributions of individual employees to pension and life insurance funds. Also, there is a timing problem with respect to the corporate income taxes paid that is included in the income concept here and the fact that capital gains realizations are used as opposed to retained earnings (accrued capital gains). In Tax Freedom Day, we used the latter; but in this paper, due to the fact that there are systematic movements across geographies over life-cycles (e.g. Arizona, Florida, etc.) and the fact that we are only analyzing state and local taxes where the corporate income tax is relatively minor compared to the federal government, we use capital gains realizations. Overall, the income concept used here is realizations based, and could almost be interpreted as being on a cash-flow basis. However, some non-cash items are included in the income measure, most notably net imputed rental income and in-kind government transfers.

To determine the amount of income within each state for a fiscal year, national quarterly totals for each income category were taken from BEA's National Income and Product Account (NIPA) tables and allocated to states using an allocator series that was created using state-by-state income data from two sources: Regional Economic Accounts via BEA and the IRS Statistics of Income Division (state-by-state data from Table 2). Note that the income amounts are on a July-June basis, and are thereby not equivalent to calendar year. When possible, quarterly data from BEA was used to allocate income on the state fiscal year basis. When annual data was only available, the fiscal year total is assumed to be half calendar year one and half calendar year two.

The biggest income variable in our measure, personal income, was allocated perfectly as quarterly data is available at both the national level and regional level from BEA. For other variables like capital gains and pensions, IRS data that is only available on a tax year (calendar year) basis was used and the fiscal year split was made. Some other BEA items that are included in the income measure used in this study are also only available annually on a state-by-state basis from BEA, and again, the fiscal year split was made. Such was the case with the state-by-state data used to subtract initially the full amount and then re-allocate the national total of Medicare and Medicaid benefits after the non-fungible portion was removed. The Current Population Survey was the source of the fungibility fraction, and was assumed to be constant for all states. Due to the fact that the CPS historically underreports health insurance and program participation, adjustments were made (upwards) to the CPS aggregate data to reflect the underreporting as measured by an Urban Institute study (Wheaton, 2007).

Overall, because state and local governments rely heavily on taxes that are ultimately borne by consumers, the income measure used in this study is an improvement to the income concept which had been used in previous Tax Foundation state and local estimates (which was more of an accrued measure). And while it is less accrual based than the previous measure, it is still more reflective of true Haig-Simons income than merely using personal income as some studies do when making state-by-state comparisons of state and local finances.

What is a Tax?

Just as defining what income is can be difficult and never perfect; defining what exactly should count as a tax in an effective tax rate estimate is also difficult and always subject to questioning. The tax burden measure used in this study's estimates includes those items defined as a state and local tax by the Bureau of Economic Analysis, which is essentially equivalent to the Census Bureau's definition of a tax (codes T01, T09, etc.) plus special assessments. Note that this includes licenses such as occupational and business licenses, as well as motor vehicle licenses. Non-tax revenue items are not included in this paper's estimates (except in the alternative presentations section). Economists and other public policy scholars have long debated the various purposes of taxation. Foremost is raising revenue for government. However, tax policy has been used for other means as well, including indirect spending policy, redistribution, externalities, and even paternalism. Given that other tax policies are often put in place in lieu of spending or regulatory policies in order to achieve these goals, the relevant question is to what extent are non-tax means to achieve an end that can also be done by tax policy really just implicit taxes? Isn't the minimum wage similar to an implicit tax on consumers and employers designed to redistribute income to low-skilled workers? Suppose a state government imposed a cap and trade system for carbon emissions and auctioned off the initial rights to emit. That auction revenue may not be classified legally as a tax, but economically, it is nearly equivalent to a carbon tax. Regulatory policies that impose fines on individuals for engaging in certain activity (with some probability of getting caught) are economically similar to that activity having a statutory tax imposed on it. Yet one is legally classified as a fine, the other a tax.

There are numerous other examples, some of which are actually captured in this paper's alternative presentation section. Lotteries and liquor stores earn economic rents (also known as

windfall profits, economic profits, etc.) that are economically equivalent to taxes due to the government's legal monopoly. Under one set of alternatives, we count the excess return that government receives from operating the lottery (and liquor stores) as a tax. Note that we do not attempt to quantify the efficiency losses that may occur from government operation of the lottery (or other government enterprises) relative to those states where a private company (likely more efficient) operates the lottery via a leasing agreement. We perform the same economic rent calculation for all other government sponsored enterprises (as defined by BEA), and that is the portion which is counted as a tax in the alternative presentation, except for mass transit and housing/urban renewal, which are excluded from the estimates as they are almost always net subsidies.

Like almost all tax burden studies, this study does not take into account what government does with the money, i.e. spending. The net return to taxpayers that results from their tax dollars is the primary measure by which government is and should be measured. That is the true 'burden' or 'benefit' imposed by the fiscal system as a whole, and because taxes and spending can be used interchangeably, it can often be difficult to properly interpret what a tax burden is actually measuring. For example, on-budget policies designed to redistribute from one group to another (often from rich to poor or from young to old), where young and high-income individuals are taxed to finance redistribution to the old and lower-income population. However, there are various ways to do such policies. Government could impose a flat income tax on all wages and then redistribute using spending policy. Or government could lower taxes on some and raise taxes on others in order to merely redistribute through the tax system. The former method would have an overall higher tax burden than the latter when measured in the standard way, but the two would likely have very similar final outcomes. Separating government spending from tax policy when analyzing how various sub-groups of the population are affected by those policies can sometimes lead to misleading results. (For more, see Chamberlain and Prante, 2007)
That being said, tax burden measures rarely take into account the full fiscal system, and thereby implicitly assume that taxpayers understand what they are actually receiving for their tax dollars, including being able to understand that what constitutes a tax in that burden measure is not merely a fee tied to a specific government service (that is contingent upon that fee). Although such non-tax revenues are often partially implicit taxes, as shown in Table 5, they are not legally classified as a tax by Census because they are primarily linked to being provided a specific government service that is conditional upon that payment (similar to a consumer purchase in the private marketplace).

Economic Incidence and Allocating Tax Burdens and Income to States

When moving beyond the legal incidence of a tax, assumptions must be made using both economic theory and empirical economic literature to determine what parties bear the economic burden of a tax and how much. Once the incidence assumption has been made, however, one must also determine a method (given that incidence assumption) by which to allocate the total tax burden to the respective subgroups whose tax burdens are being compared. Ideally, one would use the incidence assumptions made to determine the total burden of taxation (including the excess burden) and find the appropriate allocator. Unfortunately, however, it is typically difficult to measure the excess burden of a tax. Therefore, almost all mainstream tax burden studies assume that the tax burden is equal to the revenue collected. This is especially

troublesome for highly distortive taxes and for taxes that can actually improve economic welfare such as Pigouvian taxes. A true tax burden measure that used the average effective tax rate framework would account for the lost income imposed by that given tax in addition to the revenue transfer portion. When computing such an average effective tax rate, the income measure (the denominator) would also have to be adjusted to reflect that foregone income relative to the world under which no tax was imposed (call this "potential income"). Specifically,

$$\text{Average Effective Tax Rate (incl. DWL)} = \frac{\text{(Actual Income – Potential Income)}}{\text{(Potential Income)}}$$

Note that the ideal income measures (both actual and potential) would have to be sufficiently broad, thereby including all sources of income, including those not measured by GDP such as imputed income from domestic production, imputed income from environmental quality, etc. To say that such a calculation would be difficult is an understatement. It also shows why the average effective tax rate concept, however popular and mainstream it may be (it's the tax burden measure used in this study), is highly theoretical at its core, largely because income is such a nebulous concept.

Despite the difficulties of measuring excess burdens, as well as some controversial questions of tax incidence that permeate the economic literature, this study uses what are relatively mainstream assumptions regarding the incidence of most taxes. By mainstream, we are referring to the fact that the incidence assumptions made in this study are similar to those used by other tax burden studies at the federal and state/local levels.

For most taxes, we assume that the tax is fully shifted forward to final product consumers, even those paid by businesses. Of course this is not 100 percent correct as the true incidence share (whether it's borne by factors of production or consumers) will vary by the type of product being sold. However, most studies assume that taxes levied on consumption are assumed to be borne by the end-use consumer, and we follow their lead.

With regards to corporate income taxes, property taxes on business property (non-residential) and insurance taxes paid by businesses, we assume that the taxes are borne by all owners of capital nationwide and all workers nationwide, using a 50/50 split. No tax incidence question is more controversial than that of who bears the burden of the corporate income tax, although the property tax is not far behind in terms of its uncertainty. The literature is split between the benefit view of property taxes (see the work of Oates, Fisher, and Tiebout) and the new view (see the work Zodrow and Mieszkowski).

In this paper's treatment of the property tax, it was split first into business property and non-business property using estimates provided by the annual publication from the Council on State Taxation (COST) entitled "Total State and Local Business Taxes." The business portion is then split into real estate versus non real-estate using GDP by state data with the non real-estate tax portion allocated nationwide on the basis of capital income and net earnings (50/50 split). And then the real estate portion was further split into residential (i.e. rental units) versus non-residential (i.e. commercial leasing) using data from the economic census on sales by business type. The non-residential portion was allocated nationwide on the basis of capital income and net

earnings (50/50 split), while the residential real estate (paid by businesses such as rental units) was assumed to be borne by own-state residents. The non-business portion of property taxes was divided into three categories: personal property, owner-occupied housing, and seasonal homes. Personal property figures were taken from BEA Regional Economic Accounts tables, and the residual was then assumed to be borne by occupied housing and seasonal homes with the relative share going to owner-occupied housing versus seasonal homes determined by the ratio of the number of housing units in a state that were owner-occupied housing versus seasonal homes, as estimated by the Census Bureau. The owner-occupied portion was assumed to be borne by own-state residents only, while the seasonal homes portion was allocated using 1995 American Travel Survey data on owned vacation homes by state with the figures adjusted using population data.

The next big tax category at the state and local level is sales taxes, both general and selective as categorized by Census. For general sales taxes, the COST study of business taxes was used once again to determine that portion of the tax which was paid by business inputs. That portion which was paid by business inputs was then assumed to be passed forward to consumers on the basis of their estimated consumption from that industry. Using state-by-state GDP data, that fraction of sales taxes on business inputs that were paid by each industry were estimated. And then depending upon the industry, the tax was assumed to be either borne fully by own-state residents or was allocated using some other method (with some portion going to out-of-state consumers). For example, sales taxes paid by manufacturing firms within a state were allocated on the basis of a state's share of the nation's after-tax income. Sales taxes paid by the mining industry were allocated similarly to severance taxes. Sales taxes paid by the retail and wholesale trade were assumed to be borne by consumers purchasing products within that state, most of which is own-state residents but some of which is tourists and non-tourists, out-of-state travelers (such as daily commuters who travel from state A to state B for work).

For those sales taxes that were borne by tourists, estimates were made using sales tax rates and domestic travel expenditures data provided by the Travel Industry Association's annual publication "The Impact of Travel on State Economies." Adjustments were made to account for business travelers, whose travel consumption taxes were assumed to be borne by consumers nationwide. For the category "food services" as defined by the TIA study, the meals tax rate was applied to those expenditures as opposed to the general sales tax rate. For lodging, state-by-state data on accommodations sector GDP was used to approximate the amount of general sales taxes (T01 + T19) that were paid for lodging, all of which was assumed to be borne by tourists. Tourists expenditures on food, retail sales, and lodging were allocated on the basis of the number of person trip days that one state's residents spent as 'tourists' in that given state. The source of this data was the 1995 American Travel Survey, and data was grown up using travel industry growth data and population growth.

For tobacco and alcohol excise taxes, each state was assumed to be either solely an importer or solely an exporter of the given product. State-by-state sales data (by place of sale) was provided by industry publications, and state-by-state consumption data (by place of resident consumption) was estimated using data from the CDC's Behavior Risk Factor Surveillance System (BRFSS). If a state's sales exceeded its consumption, it was deemed an exporter; and total sales multiplied by one minus the ratio of consumption to sales was thrown into an exported tax pool. Then states

whose consumption exceeded sales imported from that tax pool based on their relative share of imports of the given commodity (either alcohol or cigarettes).

Insurance receipts taxes were assumed to be borne by three parties: owners of housing, owners of all capital, and other insurance consumers, in proportion to the estimated share of insurance premiums that were of each type in a given state. Those levied on housing were assumed to be borne by the home-owner whereas those levied on businesses were assumed to be borne by owners of capital nationwide. The remainder, those that were paid for other personal insurance (like automobile) were assumed to be borne by the consumer, and for this study's purposes were allocated to own-state residents only.

Public utility taxes were assumed to be borne by the consumers of final products, whether directly through personal energy consumption or indirectly through the consumption of other products whose producer paid public utility taxes. First, public utility taxes were split into electricity (primary), telephone, water, and television. Public utility taxes on electricity were allocated initially based upon electricity consumption by state by sector from the Energy Information Agency (EIA). The taxes imbedded in electricity that were consumed by the commercial sector of a given state were allocated to states using the same as the distribution of the retail sales tax in a state (or its proxy). On the taxes imbedded in electricity consumed by the industrial sector of a given state, they were allocated nationwide using disposable personal income. For the small fraction of electricity that was consumed by the transportation sector, those taxes were assumed to fall on domestic residents. The same own-state resident incidence assumption was made for the large fraction of electricity consumed directly by the residential sector. Note that adjustments were made for the exporting and importing of electricity between states per EIA data. With regards to the public utility taxes levied on telephone and water, the fraction that were paid by businesses was allocated nationwide to states on the basis of disposable income, while those borne by households directly were allocated solely to the collecting state.

Motor fuel sales taxes, as classified by the Census Bureau, include the taxes imposed on three main motor fuels: aviation fuel, motor gasoline, and diesel fuel. Taxes paid on aviation fuel were assumed to be borne by travelers to the United States worldwide, with a double weight applied to U.S. travelers (relative to foreign travelers). Taxes paid for diesel fuel were assumed to be borne by consumers nationwide in proportion to their disposable income share. Finally, motor fuel taxes were assumed to be borne by domestic residents and tourists driving in the state. The amount of fuel consumed by tourists in a state was estimated using data from the Travel Industry Association. Note that for most states, a large fraction of "tourists" were actually in-state residents driving long-trips.

While on the subject of taxes relating to energy, severance taxes are a major contributor to the state and local tax burden rankings, especially at the extremes. Alaska, Wyoming, and Louisiana export a very large fraction of their tax burdens due to severance taxes that are assumed to be borne by consumers of energy. Specifically, severance taxes are first divided into energy and non-energy (such as timber) using GDP by State data from BEA. Then using EIA data on production by state, the energy portion of severance taxes are divided into three products based upon their share of energy production in a state: coal, natural gas, and crude oil. Then the

imbedded severance taxes in the coal production of a given state (or natural gas/crude oil) was initially allocated on the basis of a state's share of coal consumption. Finally, the imbedded tax in the coal that is consumed by a state is divided into sectors (transportation, industrial, electricity, commercial, residential). From each sector is the final severance tax then allocated, which includes the possibility of another state's residents bearing the burden of severance taxes that are imbedded in final products of commercial or industrial businesses, as well as transportation (e.g. distillate/residual fuel).

A common misinterpretation of the Tax Foundation's state and local tax burden estimates is that they do not include licenses imposed by state and local governments and are therefore misleading for comparison purposes. That myth is just that – a myth. The Tax Foundation estimates have always county as taxes the licenses paid for motor vehicles, hunting and fishing, occupational, corporate, and others. This is because the Census classifies these items as taxes. The appendix provides all the necessary information regarding the methodology that goes into determining who bears the burden of the license taxes. Also detailed in the appendix is how two other relatively minor sources of tax revenue, taxes imposed on stock and real estate transfers and special assessments, are allocated.

Individual income taxes are a major source of revenue for most states, although eight states raise zero or very little (New Hampshire, Tennessee) revenue from individual income taxes. In all states besides those eight, income derived from earnings raises the bulk of the income tax revenue. One consequence of this is that the income tax can legally be imposed on non-residents who work in a state, yet live in another state. Some states have reciprocal agreements with other states which prohibit each from taxing one another's non-resident worker's wages. For the estimates calculated in this study, information provided on the fraction of income taxes paid that were from non-residents was taken from each state's statistics division from the Department of Revenue (or equivalent) if made available. If not available, estimates were made using Census Journey to Work data. Adjustments were also made for proprietor income based upon BEA Regional Economic Accounts data as proprietor income (businesses) is subject to tax by a taxing jurisdiction even under a reciprocal agreement. A given state's non-resident portion was allocated to other states using mostly Journey to Work data provided by Census/BEA unless a state-by-state breakdown was provided by a state's revenue department (rare cases – only New Jersey, New Mexico, New York, and Oregon). Previous year's editions of the Tax Foundation state and local tax burden estimates did not account for non-resident income taxes, which can be significant as work/residency locations are not random. It is one of the reasons that New Jersey is now first as opposed to being merely in the top 10 as it had been under the previous methodology.

The question of who bears the ultimate burden of the corporate income tax in an open economy is arguably the most debated question in public finance. From Harberger's seminal paper (1962) which assumed a closed economy to the current open economy debate featuring the work of Gravelle and Kotlikoff (1989), Hassett and Mathur (2007), Gravelle and Smetters (2001), Randolph (2005), Desai, Foley, and Hines (2007, unpublished), the short-run and long-run incidence of the corporate income tax is a controversial subject in the economics of taxation. In this study, we assumed that 50 percent of each state's corporate income tax collections were paid by U.S. residents based upon their share of capital income (as defined by dividends plus interest

income plus capital gains realizations). The remaining 50 percent was allocated to U.S. residents based upon their share of the nation's wage and salary income. For transparency purposes, however, we also showed how the results change under an assumption that 100 percent of the tax burden was borne by owners of capital.

Finally, the estate tax at the state and local level is a relatively small source of revenue; and its importance has fallen in recent years as many states' estates tax policies have followed the same course as the federal estate tax. In this paper, state and local estate taxes are assumed to be borne fully be the deceased at the time of death, and thereby are assumed to be borne by residents of the same state that collects the estate tax revenue. The same applies for gift taxes.

Other Odds and Ends

The time frame for the estimates is fiscal year, and collection figures for those few states that do not operate on the standard July 1 – June 30 fiscal year have been adjusted accordingly to correspond to that time frame.

Before interpreting the figures in this piece as definitive measures of the degree of state and local tax exporting, one should note that the estimates presented here do not account for the federal deductibility of state and local taxes paid within the federal individual and corporate tax codes. Accounting for such deductibility is a goal for future state and local tax burden estimates because the deductibility is not uniform across geographies for a variety of reasons, most notably varying state and local tax policies and the fact that itemized deductions tend to disproportionately favor high-income individuals due mostly to the progressivity of the federal individual income tax.

The Census Bureau cites Indiana's FY 2004 local property tax collection to be $6.06 billion and its FY 2005 local property tax collections as being $8.29 billion. This is a gigantic one-year increase (37 percent), and it prompted us to dig deeper by contacting Census and those in Indiana. In the end, it was decided that the Census figure was incorrect, and instead of using the Census figures for FY 2005 – FY 2006, we used figures provided to us on "net property tax collections" by the Indiana Office of Management and Budget. Note we merely used the growth rates from FY 2004 to FY 2005 provided by Indiana OMB. That growth rate was applied to the FY 2004 Census figure, which we assume is correct. The Census local growth rate from FY 2005 to FY 2006 was applied to the revised value of FY 2005.

IV. Conclusion

When measuring the burden imposed on a given state's residents by state and local taxes, one cannot merely look at collections figures for the governments located within that state. As the results in this paper show, there is a fairly significant amount of shifting of the tax burden across states, and the shifting is not uniform. This paper only attempted to measure the amount of shifting that occurs, and how it affects the distribution of state and local tax burdens across states. It is not an endorsement of policies that attempt to export tax burdens. There are myriad problems from an economic and even political efficiency standpoint when states blatantly attempt to shift tax burdens to residents of other jurisdictions despite the fact that the value of the services provided to those taxpayers by those tax-levying governments are often far below the foregone tax dollars. Finally, the methodology of this paper has been thoroughly discussed and defended, and on virtually every methodological question (income measure, tax incidence, definition of tax, etc.), this paper follows conventional methods. Furthermore, this paper is highly transparent, showing how the results change even under various alternative methodological decisions that deviate from the already mainstream assumptions made.

V. Addendum: Methodological Changes for 2009 State and Local Tax Burdens report.

In this year's study we have made a couple of modest methodological changes to better utilize the data available to us. The first is that we now allocate consumption taxes to residents based on disposable income rather than personal income as we had in the past. This is a more accurate method of allocating consumption taxes, but the difference is only slight.

The other change we have made relates to travel data that is used to allocate various taxes based on tourism. We are dedicated to using the most up to date data available, but sometimes certain data sources are not available on an annual basis. Because of this, like anyone doing detailed economic analysis, we must sometimes impute missing data using various economic tools. In this year's study we improved our method of imputing American Travel Survey data. These changes only had slight effects on most states, but those states with larger tourism industries, such as Florida and Nevada, were affected more.

Finally, we waited longer than normal to release the 2009 results. In years past we have released estimates a few months after the end of the fiscal year in question, which does not pose as many problems when revenues are fairly stable. But the 2009 fiscal year was such a unique, dynamic time. With the economy in recession in 2009, tax revenues were bound to be more volatile and difficult to predict than in more stable times. In order to achieve a more accurate estimate we waited for more final tax data to be released. This is why the 2009 State and Local Tax Burdens estimate is not being released until early 2011. Of course, tax data is never truly final. The Census Bureau regularly revises previous years' estimates as more information becomes available to them. But these revisions tend to become less substantial as more time goes by.

Appendix

The tables below summarize the income and tax measures used in the estimates provided in this paper and how the components of each were allocated to each state.

Table A: Detailed Description of the Income Components (and allocation) in State and Local Tax Burden Estimates

Income =	**Data Sources**	**Incidence Assumption/Method of Allocation**
Personal Income	BEA	NIPA Personal Income (Table 2.1) allocated via BEA State Quarterly Personal Income (SQPI)
Plus Contributions for Government Social Insurance **(Alt. 3 measure only)**	BEA	NIPA CGSI (Table 2.1) allocated via CGSI within BEA State Quarterly Personal Income, following adjustment for residence
Less PBGC Benefits **(Alt. 3 measure only)**	BEA, IRS	NIPA total (Table 3.7) allocated via taxable pension income from IRS
Less Veterans Life Insurance Benefits **(Alt. 3 measure only)**	BEA	NIPA total (Table 3.7) allocated via BEA State Annual Personal Income Transfers (SA 35)
Less Military Medical Insurance Benefits **(Alt. 3 measure only)**	BEA	NIPA total (Table 3.7) allocated via BEA State Annual Personal Income Transfers
Less Worker's Compensation Benefits **(Alt. 3 measure only)**	BEA	NIPA total (Table 3.7) allocated via BEA State Annual Personal Income Transfers
Less Supplementary Medicare Contributions **(Alt. 3 measure double factor)**	BEA	NIPA total (Table 3.6) allocated via BEA State Annual Personal Income Transfers (allocated via Medicare benefits received); subtracted twice, once to remove from CGSI and another to remove from benefits
Less Veteran's Life Insurance Contributions **(Alt. 3 measure double factor)**	BEA	BEA national total from NIPA Table 3.6 allocated to states using Veteran's Benefits in State Annual Personal Income tables
Less Nonfungible portion of Medicare	BEA, CPS, Urban Institute	BEA national total (NIPA Table 3.7) less CPS national total (adjusted for underreporting in CPS per Urban study); allocated to states using Medicare benefits received per State Annual Personal Income Transfers (SA 35)
Less Nonfungible portion of Medicaid	BEA, CPS, Urban Institute	BEA national total (NIPA Table 3.7) less CPS national total (adjusted for underreporting in CPS per Urban study); allocated to states using Medicaid benefits received per State Annual Personal Income Transfers (SA 35)

Plus Capital Gains Realizations	BEA, IRS	BEA total from NIPA Table 7.19 allocated to states using IRS Table 2 data on capital gains realizations; recent years grown up based upon CBO and state personal income component "Dividends, Interest, Rents"
Plus Pension and Life Insurance Benefits	BEA, IRS	BEA total from NIPA Table 6.11 (lines 38, 47) allocated to states based upon IRS Table 2 share of taxable pension income; recent years grown up using change in Social Security benefits
Less Pension and Life Insurance Contrib. (**T.F.I. measure only)**	BEA, IRS	Figure from Table 6.11 (lines 23, 34) allocated to states based upon supplements to wages & salaries by place of residence in BEA SQPI
Less Investment Income of Life Insurance Carriers and Pension Plans (**T.F.I. measure only)**	BEA, IRS	Figure from Table 7.19 (line 6) allocated to states based upon share of personal dividends plus personal interest income courtesy BEA SAPI; recent years grown up using quarterly data on rents, interests, and dividends
Plus Corporate Income Taxes Paid (Federal, State, Local)	BEA, IRS	National total from NIPA Table 3.5 allocated 50 percent based upon state's share of total capital income (capital gains plus dividends plus interest) and 50 percent based upon state's share of total net earnings
Less Subsidies Received	BEA	National total from NIPA Table 3.1 allocated to states based upon GDP by State component "Subsidies"
Plus Federal Gas Tax	BEA, EIA	National total from NIPA Table 3.5 allocated via motor gasoline consumption by state (via Energy Information Agency)
Plus Federal Diesel Fuels Tax	BEA, T.F. estimates	National total from NIPA Table 3.5 allocated via disposable personal income by state, as calculated by Tax Foundation: personal income less (federal income taxes paid, state and local incomes taxes paid, and other personal taxes paid)
Plus Federal Tobacco Tax	BEA, CDC (BRFSS)	National total from NIPA Table 3.5 allocated via cigarettes smoked by state, which was estimated using data from BRFSS, via CDC
Plus Federal Alcohol Tax	BEA, CDC (BRFSS)	National total from NIPA Table 3.5 allocated via drinks consumed by state, which was estimated using data from BRFSS, via CDC
Plus Federal Aviation Tax	BEA, American Travel Survey (ATS), T.F. estimates	National total from NIPA Table 3.5 allocated to states using state personal air travel data from 1995 ATS (grown up using population) after business and international travel was subtracted using Tourism Accounts data from BEA. Business travel allocated via disposable personal income by state.
Plus Federal Windfall	BEA, EIA,	N/A for recent years, but for years in 1980s, allocated

Profits Tax	T.F. estimates	50% via disposable personal income and 50% motor gasoline consumption
Plus Other Federal Excise Taxes	BEA, T.F. estimates	National total from NIPA Table 3.5 allocated via disposable personal income by state
Plus Federal Customs	BEA, T.F. estimates	National total from NIPA Table 3.1 allocated via disposable personal income by state
Plus State and Local Taxes on Production and Imports	BEA, Census GFD, T.F. estimates	National Total from NIPA Table 3.1 allocated via Tax Foundation state and local tax burdens (only those components counted by BEA in TOPI, which excludes items such as personal taxes, corporate income taxes, and estate/gift taxes)

Table B: Detailed Description of Tax Components (and allocation) in State and Local Tax Burden Estimates

Taxes Paid (Census code)	**Data Sources**	**Incidence Assumption/Method of Allocation**
Property Taxes (T01)	Census Government Finances Division (GFD), Council on State Taxation (COST), BEA, Economic Census, Census of Housing, American Community Survey (ACS), ATS	First, separated into two categories: business and non-business via COST study of business taxes. Business divided into two subcategories: real estate and non-real estate, and then real estate divided into residential and non-residential. Property taxes paid by businesses not in the real estate sector and those paid by commercial real estate are assume to be borne by owners of capital and wage earners nationwide (same as CIT). Taxes paid on residential rental real estate assumed to be fully paid by own state residents. Non-business property taxes put into three sub-categories: owner-occupied housing, seasonal homes real estate, and personal property. Personal property taxes assumed to equal BEA estimate and allocate fully to own-state. Owner-occupied housing and seasonal homes are divided based upon share of housing units that are owner-occupied versus seasonal (per Census data). Seasonal homes property taxes allocated using 1995 ATS state-by-state matrix, adjusted for population growth and estimates of ownership by non-tourists.
General Sales Taxes and Gross Receipts Taxes plus Other Selective Sales Taxes (T09 + T19)	Census GFD, COST, BEA, ATS, Travel Industry Association (TIA)	Separated into three main categories: sales taxes on business inputs, sales taxes paid by tourists, and sales taxes paid by non-tourists personal consumers. Amount that is business inputs taken from COST study (gen. sales only). Then sales taxes on business inputs allocated to industries based upon GDP by state by sector. Then each industry's total is allocated from each state to states across U.S. using various assumptions. For example, manufacturing is borne by nationwide consumers, while retail/wholesale trade is borne by those consuming

		products within own state. All sales taxes paid by business are assumed to be borne by end-use personal consumers. Sales taxes paid by tourists are estimated for three categories: food services, retail trade, and accommodation & other, using TIA expenditures data and sales tax rates for meals and general. Those paid by foreign tourists are estimated using a combination of BEA Satellite Account data and state-by-state data from TIA. Business tourist expenditures portion not included (it is part of COST estimate) and is assumed to be borne by personal consumers nationwide based upon disposable personal consumption. Fraction of total local sales taxes in a state (T01 + T19) that is tourists is estimated using fraction of state sales taxes that are paid by tourists (T01 + T19). Residual is assumed to be borne by non-tourists personal consumers, which are allocated based partially upon state of residence and partially upon place of work (50/50 for general sales tax items and 30/70 for food services).
Alcoholic Beverage Sales Taxes (T10)	Census GFD, Brewers' Almanac, CDC (BRFSS)	State is assumed to either be an importer or exporter of alcohol (only one). If sales > consumption, exporter. If consumption > sales, importer. Sales allocated via state-by-state data on alcohol shipments from Brewers Almanac. Consumption allocated via state-by-state data from CDC on number of drinks consumed. Exported taxes put into nationwide pool and distributed based upon estimated importation of alcohol.
Amusement and Pari-Mutuel Taxes (T11 + T14)	Census GFD, ATS, BEA, TIA	Each state's collections divided into two categories: tourists and non-tourists. Tourists' fraction estimated using recreation expenditures from TIA (assumed to all be personal). Non-tourists allocated via state of residence and wages by place of work (30/70). Tourists portion allocated to states using data from the 1995 ATS, grown up by population.
Insurance Premiums Taxes (T12)	Census GFD, BEA, T.F. estimates	Divided into three categories based upon GDP by state data: insurance taxes for real estate, insurance taxes paid by business, and non-housing/non-business insurance (such as auto).
Motor Fuels Sales Taxes (T13)	Census GFD, BEA, EIA, ATS, TIA	Divided into three categories: aviation fuel, distillate fuel, and motor gasoline. Divided based upon EIA consumption data. Aviation fuel allocated same as federal aviation tax. Distillate fuel portion allocated to all consumers nationwide on the basis of disposable personal income. Motor gasoline assumed to be borne by personal drivers, divided into two categories: tourists and non-tourists. Portion consumed by tourists estimated using TIA data, and allocated using ATS data. Non-tourists allocated to

		state own residence and a small fraction on the basis of wages by place of work (80/20).
Public Utilities Sales Taxes (T15)	Census GFD, BEA, EIA, ATS, TIA	Estimated fraction that is electricity, water, telephone, and television. Using EIA data, electricity (primary one) allocated to one of five end-uses: transportation sector, residential sector, commercial sector, industrial sector, and exported to other states. Transportation sector and industrial sector assumed to borne by entire nation per share of disposable personal income. Commercial sector follows same allocation as retail trade sales taxes (some tourists). States importing taxed electricity from nationwide pool of exporting states. Residential sector borne by residents of state only. Telephone and water public utility taxes split into business and residential; business borne by consumers nationwide per share of disposable personal income. Residential borne by residents of state only. Television is assumed all residential and borne only by residents of that taxing state.
Tobacco Sales Taxes (T16)	Census GFD, *Tax Burden on Tobacco*, CDC BRFSS	State is assumed to either be an importer or exporter of tobacco (only one). If sales > consumption, exporter. If consumption > sales, importer. Sales allocated via state-by-state data on gross tobacco tax collections from *Tax Burden on Tobacco*. Consumption allocated via state-by-state data from CDC on number of cigarettes smoked. Exported taxes put into nationwide pool and distributed based upon estimated importation of cigarettes.
Alcoholic Beverage Licenses (T20)	Census GFD, T.F. estimates	State total allocated based upon same distribution as alcoholic beverage sales tax.
Amusement Licenses (T21)	Census GFD, BEA, TIA	State total allocated based upon same distribution as amusement and pari-mutuel taxes (T11 + T14)
Corporation Licenses (T22)	Census GFD, BEA, IRS	State total allocated based upon same distribution as corporate income tax (see T41)
Hunting & Fishing Licenses and Other Licenses (T23 + T29)	Census GFD, BEA	Personal side allocated to state's own residents equals minimum of (BEA Other Personal Taxes from State Annual Personal Income, Census GFD). Remainder allocated to business, and assumed to be borne by consumers nationwide (e.g. disposable personal income)
Motor Vehicle Licenses and Motor Vehicle Oper. Licenses (T24 + T25)	Census GFD, BEA	Personal side allocated to state's own residents equals BEA estimate of motor vehicle licenses per State Annual Personal Income. Remainder allocated to business, and assumed to be borne by consumers nationwide (e.g. disposable personal income)
Public Utility Licenses (T27)	Census GFD, T.F. estimates	State total allocated based upon same distribution as public utility sales taxes (see T15).
Occupation and	Census GFD,	Collections amount for state allocated on the basis of

Business Licenses NEC (T28)	BEA	gross earnings in a state (e.g. includes adjustment for commuters)
Individual Income Taxes (T40)	Census GFD, BEA, state revenue websites	Share paid by nonresidents taken from state department of revenue, or estimated via BEA/Census Journey to Work data. Nonresident fraction allocated via JTW unless state-by-state breakdown provided by DOR with adjustment for reciprocity agreements between states for wage income. Share of local income taxes borne by nonresidents assumed to follow same share as state income taxes.
Corporate Income Taxes (T41)	Census GFD, BEA, IRS	Allocated nationwide: 50% share of capital income and 50% share of total net earnings
Death and Gift Taxes (T50)	Census GFD	Allocated 100% to residents of collecting state
Documentary and Stock Transfer Taxes (T51)	Census GFD, T.F. estimates	State total allocated based upon same distribution as property taxes (less personal property taxes)
Severance Taxes (T53)	Census GFD, BEA, EIA	Fraction severance that are energy versus non-energy using GDP by state by industry (mining vs. forestry). Severance taxes on non-energy allocated nationwide based upon disposable personal income. On energy products, fraction that is coal, natural gas, and crude oil within each state determined via EIA production data. Then allocated to states based upon EIA energy consumption data by sector by state. Residential sector borne by own-state. Electricity sector follows same distribution as electrical public utility taxes in a state. Severance taxes paid on energy use by commercial sector consumption in a state allocated via retail trade sales taxes. Industrial sector consumption allocated to states based upon disposable personal income. Transportation sector uses of natural gas and coal assumed to be borne by own-state residents. Severance taxes imbedded in the transportation sector uses of crude oil allocated to three sources: aviation fuel, motor gasoline, and other (e.g. residual/distillate fuel). Aviation fuel follows same allocation as federal aviation tax. Motor gasoline follows same allocation as motor gasoline taxes within a state. And other transportation assumed to be borne by consumers nationwide (i.e. share of nationwide disposable personal income).
NEC Taxes (T99)	Census GFD	Allocated 100% to residents of collecting state
Special Assessments (U01)	Census GFD, T.F. estimates	State total allocated based upon same distribution as property taxes (less personal property taxes)

Data Sources (in order of importance)

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