TAX FOUNDATION WORKING PAPER

Mar. 2014
No. 10

Tax Foundation State-Local Tax Burden Estimates: An Overview of Methodology

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Section A
Methodological Overview and Data Sources

A state's state-local tax burden, in general, is the total amount residents of that state pay in state and local taxes (even if some of those payments go to out-of-state jurisdictions). Our measure expresses this tax burden as a proportion of total state income. This means that two broad statistics are needed to make the calculation for each state: total state and local taxes paid by state residents (what we call the tax burden) and total state income.

For the tax portion, the first step is to convert tax collections by state, as reported by the U.S. Census Bureau's Government Finance Division,1 to total state and local taxes paid by residents of each state, even if those taxes are paid to out-of-state jurisdictions. Each tax collection amount from the Census Bureau is first narrowed 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) to ensure the most accurate final tax burden estimates can be calculated. 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. For a detailed overview of what types of taxes are included in the total taxes paid measure, in addition to detailed descriptions of incidence assumptions and allocation methods for each tax subcomponent, see Section B.

A similar procedure is completed for the income portion. National totals are taken from the Bureau of Economic Analysis (BEA) and then allocated to states based on some allocator. For the definition of income used in this study, in addition to descriptions of incidence assumptions and allocation methods for each subcomponent of income, see Section C.

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.

Further, an ideal tax burden study would include compliance costs and economic efficiency losses associated with taxation. Neither is included here. As a result, this study assumes

1 The U.S. Census Bureau's Government Finance Division encompasses four separate data sources: *State Government Finances* (http://www.census.gov/govs/state/); *State Government Tax Collections* (http://www.census.gov/govs/statetax/), *State & Local Government Finance* (https://www.census.gov/govs/local/), and *Quarterly Summary of State & Local Taxes* (http://www.census.gov/govs/qtax/).

that total economic cost of taxation is equal to tax burden. In a perfect measure, full costs would include compliance and efficiency costs. Further, the tax burden estimates presented here do not weigh the value of the government services provided with tax revenue. This is the norm in such studies.

Each year, state and local governments and federal agencies publish more complete data on public finances. Each year, the Tax Foundation updates any historical revised data. For this reason, the entire historical series of state-local burden estimates is revised each year using the most recent data available.

The time frame for the estimates is the standard state fiscal year, and collection figures for those few states that do not operate on the standard July 1 to June 30 fiscal year have been adjusted accordingly to correspond to that time frame.2

A full list of data sources is listed in order of importance in Table 1 below.

Table 1: Data Sources Used in State-Local Tax Burden Estimates

Data Source	Series
Bureau of Economic Analysis	National Income and Product Accounts Tables1
	Regional Economic Accounts2
	Satellite Industry Accounts Data3
	Annual Industry Accounts4
U.S. Census Bureau	State Government Finances5
	State Government Tax Collections6
	State & Local Government Finance7
	Quarterly Summary of State & Local Taxes8
	American Community Survey9
	Population Estimates (data downloaded via Bureau of Economic Analysis)10
	Housing11
	Commodity Flow Survey12
	Economic Census13
	Current Population Survey14 (joint project with Bureau of Labor Statistics)
	Statistical Abstract of the United States15
	Economic Indicators16
	Commuting (Journey to Work)17
Urban Institute-Brookings Institution Tax Policy Center	State and Local Finance Data Query System18
The Nelson A. Rockefeller Institute of Government	State Revenue Reports19
Council on State Taxation	Total state and local business taxes20
Internal Revenue Service	Statistics of Income21
U.S. Energy Information Administration	State Energy Data System22
U.S. Travel Association	The Impact of Travel on State Economies (payment required)23
Bureau of Transportation Statistics	American Travel Survey (ATS) 199524
Centers for Disease Control and Prevention	Behavioral Risk and Factor Surveillance System25
Beer Institute	Brewers Almanac26
Orzechowski and Walker	The Tax Burden on Tobacco (2011)27
State Departments of Revenue (or equivalent)	Data on resident versus non-resident income tax filers

2 Only four states do not have a standard fiscal year. The Alabama and New York fiscal year ends September 30, the New York fiscal year ends March 31, and the Texas fiscal year ends August 31. See National Conference of State Legislatures, "State Fiscal Years," *Quick Reference Fiscal Table*, http://www.ncsl.org/research/fiscal-policy/basic-information-about-which-states-have-major-ta.aspx#fyrs.

Commerce Clearing House	State Personal Income Tax Reciprocal Agreements via State Tax Smart Charts
Congressional Budget Office	The Budget and Economic Outlook28
	Historical Budget Data29
	Budget Projections30
	Individual Income Tax Receipts and the Individual Tax Base31

Section B
Tax Definition, Incidence Assumptions, and Allocation Methods in Tax Foundation State-Local Tax Burden Estimates

In this report, state-local tax burden is defined as the Census Bureau's definition of a tax plus special assessments. Note that this includes license taxes such as occupational and business license taxes and motor vehicle license taxes. Non-tax revenue items are not included in this paper's estimates (such as lotteries and liquor store revenues). For a full list of what is included, in addition to the Census code for each tax, see Table 2 below.

Table 2: Taxes Included in Tax Foundation State-Local Tax Burden Estimates

Tax Subcomponent	Census Code[3]2
Property Taxes	T01
General Sales Taxes	T09
Alcoholic Beverages Sales Taxes	T10
Amusements Sales Taxes	T11
Insurance Premiums Sales Taxes	T12
Motor Fuels Sales Taxes	T13
Pari-mutuels Sales Taxes	T14
Public Utilities Sales Taxes	T15
Tobacco Products Sales Taxes	T16
Other Selective Sales Taxes	T19
Alcoholic Beverages License Taxes	T20
Amusements License Taxes	T21
Corporations License Taxes	T22
Hunting and Fishing License Taxes	T23
Motor Vehicles License Taxes	T24
Motor Vehicle Operators License Taxes	T25
Public Utilities License Taxes	T27
Occupation and Businesses Licenses Taxes NEC (Not Elsewhere Classified)	T28
Other License Taxes	T29
Individual Income Taxes	T40
Corporation Net Income Taxes (henceforth Corporate Income Taxes)	T41
Death and Gift Taxes	T50
Documentary and Stock Transfer Taxes	T51
Severance Taxes	T53
Other Taxes NEC	T99
Special Assessments for Property Improvements	U01

The time frame for the estimates is the standard state fiscal year of July 1 through June 30. Data from the few states that use a different fiscal calendar have been adjusted to the standard state fiscal year.[3]

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 by how much. Once the incidence assumptions have 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 (in this case, the state of residence).

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 a perfect measure as the true incidence share (whether it's borne by factors of production or consumers) will vary by the type of product being sold and that product's elasticity of demand.

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 (this is the assumption that taxes on business are borne equally by capital and labor). Share of capital income in each state is defined as each state's share of the national total of capital gains realizations plus dividends plus interest income. The remaining 50 percent (wage-earners nationwide) is allocated to U.S. residents based upon their share of the nation's wage and salary income.

We allocate all consumption taxes to residents based on disposable income rather than personal income.[4] Some subcomponents of income are allocated in this manner, as well (see Table 3 in Section C).

In general, this portion of the model functions in the following manner. First, total state collections as indicated by the Census Government Finance Division[5] are divided into subgroups (if necessary). Then incidence assumptions are made based on economic theory and empirical literature and then an allocation method is used to allocate the initial Census collections amount for the state to states across the nation (in some cases, however, the tax may be assumed to be borne by residents of the collecting state).

The following section describes the data sources, incidence assumptions, and methods of allocation for each of the taxes and license taxes listed in Table 2.

Property Taxes

Property tax collections, as reported by the Census Bureau, are split first into property taxes

3 Only four states do not have a standard fiscal year. The Alabama and Michigan fiscal year ends September 30, the New York fiscal year ends March 31, and the Texas fiscal year ends August 31. *See* National Conference of State Legislatures, *Quick Reference Fiscal Table*, *State Fiscal Years*, http://www.ncsl.org/research/fiscal-policy/basic-information-about-which-states-have-major-ta.aspx#fyrs.

4 Disposable personal income is calculated as personal income less federal income taxes paid, state and local income taxes paid, and all other personal income taxes paid. Any reference to "disposable personal income" in this report uses this definition.

5 The U.S. Census Bureau's Government Finance Division encompasses four separate data sources: *State Government Finances* (http://www.census.gov/govs/state/); *State Government Tax Collections* (http://www.census.gov/govs/statetax/), *State & Local Government Finance* (https://www.census.gov/govs/local/), and *Quarterly Summary of State & Local Taxes* (http://www.census.gov/govs/qtax/).

on business property and property taxes on non-business property. This split is made using estimates provided by the annual publication by the Council on State Taxation (COST), *Total State and Local Business Taxes*,[6] which estimates the total property taxes paid by businesses each year by state. The remainder is then assumed to be paid by non-business entities.

The business portion is then further split into two categories: property taxes on real estate and property taxes on non-real estate using the Bureau of Economic Analysis (BEA) Regional Economic Accounts data on Gross Domestic Product by State.[7]

- The real estate portion is further split into property taxes on residential real estate (rental units) and property taxes on non-residential real estate (commercial leasing) using rental property business data from the Economic Census.[8] The residential portion is assumed to be borne by residents of the collecting state and thus allocated fully to the collecting state. The non-residential portion is assumed to be borne equally between capital and labor nationwide. It is allocated to states based on share of capital income (capital gains realizations plus dividends plus interest income) and net earnings (a 50/50 split). Data on capital gains is from the IRS Statistics of Income,[9] while data on dividends and interest income and net earnings are from BEA Regional Economic Accounts.[10]

- The non-real estate portion is assumed to be borne equally between capital and labor nationwide and is again allocated to states based on share of capital income (50 percent) and net earnings (remaining 50 percent).[11]

The non-business portion of property taxes is divided into three categories: taxes on personal property, taxes on owner-occupied housing, and taxes on seasonal homes.

- The amount that is devoted to personal property is taken from BEA Regional Economic Accounts[12] (specifically, state and local personal property tax from Annual State Personal Income) and are assumed to be borne by residents of the collecting state.

- The residual is then assumed to be borne by owner-occupied housing and seasonal homes with the relative share going to owner-occupied housing versus seasonal homes determined by the proportion of the total number of housing units in a state

6 Council on State Taxation, *Total state and local business taxes*, *State-by-state estimates for fiscal year 2012*, http://www.cost.org/WorkArea/DownloadAsset.aspx?id=84767 (old editions can be found at http://www.cost.org/search.aspx?searchtext=state%20and%20local%20business%20tax%20study).

7 Bureau of Economic Analysis, *Regional Economic Accounts*, http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1 (includes *Gross Domestic Product by State*, *Quarterly State Personal Income*, and *Annual State Personal Income*).

8 U.S. Census Bureau, *Economic Census* via *American FactFinder*, http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t. *See also* U.S. Census Bureau, *2007 Economic Census*, http://www.census.gov/econ/census07/index.html.

9 Internal Revenue Service, *SOI [Statistics of Income] Tax Stats – Historic Table 2*, http://www.irs.gov/uac/SOI-Tax-Stats---Historic-Table-2.

10 Bureau of Economic Analysis, *Regional Economic Accounts*, http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1 (includes *Gross Domestic Product by State*, *Quarterly State Personal Income*, and *Annual State Personal Income*).

11 See notes 40 and 41 for data sources.

12 Bureau of Economic Analysis, *Regional Economic Accounts*, http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1 (includes *Gross Domestic Product by State*, *Quarterly State Personal Income*, and *Annual State Personal Income*).

that are owner-occupied housing versus the proportion that are seasonal homes, as estimated by the Census Bureau.13 The owner-occupied portion is assumed to be borne by residents of the collecting state, while the seasonal homes portion is allocated to states using 1995 American Travel Survey14 data on owned vacation homes by state with the figures adjusted using population growth and estimates of ownership by non-tourists (data obtained from American Community Survey).15

General and Other Selective Sales Taxes[16]

Sales tax collections are divided into three groups initially: sales taxes on business inputs (amount estimated using COST business tax study statistics on general sales tax),[17] sales taxes paid by tourists, and sales taxes paid by non-tourists on personal consumption.

The portion paid by business is assumed to be passed forward to consumers on the basis of their estimated consumption from each industry category.[18] This is done using BEA Regional Economic Accounts Gross Domestic Product by State data[19] to estimate that fraction of sales taxes on business inputs that is paid by each industry. Then depending upon the industry, the tax is assumed to be either borne fully by residents of the collecting state, or 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 are allocated on the basis of a state's share of the nation's disposable personal income[20] under the assumption that taxes on manufacturing are borne by nationwide consumers. Sales taxes paid by the mining industry are allocated similarly to severance taxes (incidence assumptions for severance taxes and method of allocation are discussed below). Sales taxes paid by the retail and wholesale trade are 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-tourist out of state travelers (such as daily commuters who travel from state A to state B for work). Ultimately, however, all sales taxes paid by business are assumed to be borne by end-use personal consumers in the form of higher prices.

For those sales taxes that are borne by tourists, the total tax collected is broken down into four subcategories: food services, retail trade, accommodation, and other tourist purchases.

13 U.S. Census Bureau, *Housing*, http://www.census.gov/housing/.
14 Bureau of Transportation Statistics, *American Travel Survey (ATS) 1995*, http://www.transtats.bts.gov/Tables.asp?DB_ID=505&DB_Name=American+Travel+Survey+(ATS)+1995&DB_Short_Name=ATS.
15 U.S. Census Bureau, *American Community Survey*, http://www.census.gov/acs/.
16 Census codes T09 and T19, respectively.
17 Council on State Taxation, *Total state and local business taxes*, *State-by-state estimates for fiscal year 2012*, http://www.cost.org/WorkArea/DownloadAsset.aspx?id=84767 (old editions can be found at http://www.cost.org/search.aspx?searchtext=state%20and%20local%20business%20tax%20study).
18 Industries categories, as designated by BEA, include: all industry total; agriculture, forestry, fishing, and hunting; mining; utilities; construction; manufacturing; wholesale trade; retail trade; transportation and warehousing, excluding Postal Service; information; finance and insurance; insurance carriers and related activities; real estate and rental and leasing; professional and technical services; management of companies and enterprises; administrative and waste services; educational services; health care and social assistance; arts, entertainment, and recreation; accommodation; food service and drinking places; and other services, except government.
19 Bureau of Economic Analysis, *Regional Economic Accounts*, http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1 (includes *Gross Domestic Product by State*, *Quarterly State Personal Income*, and *Annual State Personal Income*).
20 See note 35 for definition of disposable personal income.

The estimated split between these four categories is made using sales tax rates for general sales and meals, in addition to domestic travel expenditures data provided by the U.S. Travel Association (USTA) annual publication *The Impact of Travel on State Economies*.[21]

Adjustments are made to account for business travelers, whose travel consumption taxes are assumed to be borne by consumers nationwide and are allocated to states based on share of disposable personal income.[22] Sales taxes paid by foreign tourists are estimated using a combination of the BEA Satellite Industry Accounts Data[23] and state-by-state data from USTA[24]. Business tourist expenditures portion not included in this category (but this is part of COST business tax study estimate). It is assumed to be borne by consumers nationwide and is allocated to states based on share of disposable personal income.[25]

In terms of incidence and allocation of sales taxes paid by tourists, the following assumptions are made:

- For the food services category as defined by the USTA study,[26] each state's meals tax rate is applied to those expenditures as opposed to the general sales tax rate, thus giving us the sales taxes paid by tourists on food services.
- For lodging, state-by-state data on accommodations sector GDP (from BEA Regional Economic Accounts[27]) is used to approximate the amount of general sales taxes that were paid for lodging, all of which is assumed to be borne by tourists.
- Tourist expenditures on food, retail sales, and lodging are allocated to states 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,28 and this data is then extrapolated using travel industry growth data and population growth.

Fraction of total local sales taxes (general and selective) that is paid by tourists is assumed to follow the same breakdown as state-level sales taxes.

Sales taxes paid by non-tourist personal consumers is assumed to be the residual of the above two categories. This is allocated to states based partially upon state of residence (that is, borne by residents of the collecting state) and partially upon place of work (50/50 split for general sales tax and 30/70 split for food services). Data on place of work comes from

21 U.S. Travel Association, *The Impact of Travel on State Economies 2013*, 2013 Research Report, https://www.ustravel.org/research/economic-research/publications (payment required; past editions also used).
22 See note 35 for definition of disposable personal income.
23 Bureau of Economic Analysis, *Satellite Industry Accounts Data*, http://www.bea.gov/industry/tourism_data.htm (includes *Tourism Satellite Accounts* and *Transportation Satellite Accounts*).
24 U.S. Travel Association, *The Impact of Travel on State Economies 2013*, 2013 Research Report, https://www.ustravel.org/research/economic-research/publications (payment required; past editions also used).
25 See note 35 for definition of disposable personal income.
26 U.S. Travel Association, *The Impact of Travel on State Economies 2013*, 2013 Research Report, https://www.ustravel.org/research/economic-research/publications (payment required; past editions also used).
27 Bureau of Economic Analysis, *Regional Economic Accounts*, http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1 (includes *Gross Domestic Product by State*, *Quarterly State Personal Income*, and *Annual State Personal Income*).
28 Bureau of Transportation Statistics, *American Travel Survey (ATS) 1995*, http://www.transtats.bts.gov/Tables.asp?DB_ID=505&DB_Name=American+Travel+Survey+(ATS)+1995&DB_Short_Name=ATS.

BEA Regional Economic Accounts[29] and Census Journey to Work[30] data.

Alcoholic Beverages Sales Taxes

This portion of the model attempts to account for smuggling across state lines by assuming that a state is either solely an importer or solely an exporter of alcoholic beverages. This assumption is determined by comparing state sales data with state consumption data. If a state's sales exceeded its consumption, it is deemed an exporter. If a state's consumption exceeds its sales, it is deemed an importer.

State-by-state sales data (on alcohol shipments) is taken from the Beer Institute's annual publication, the *Brewers Almanac*.[31] Consumption data for each state is taken from the Centers for Disease Control and Prevention's (CDC) Behavioral Risk Factor Surveillance System (data on number of drinks consumed by state).[32]

If the state is deemed an exporter, total sales multiplied by one minus the ratio of consumption sales is used as the collections associated with that state. Then, the collections from all states that are deemed exporter states are aggregated into a pool of national exported taxes and then allocated to consumers nationwide based on share of disposable personal income and based also upon estimated importation of alcohol by state. If a state is deemed an importer, taxes are assumed to be borne by residents of the collecting state.

Amusements and Pari-Mutuels Sales Taxes[33]

Each state's collections are divided into two categories: tax collections from tourists and tax collections from non-tourists.

- The tourist portion is estimated using recreation expenditure data from the USTA Impact of Travel on State Economies.[34] The tourist portion is assumed to all be personal and not business-related. This tourist portion is allocated to states using data from the 1995 American Travel Survey,[35] which was extrapolated using population growth.
- The non-tourist portion is assumed to be remainder and is allocated via state of residence and wages by place of work (a 30/70 split, where data is from BEA Regional Economic Accounts[36] and Census Journey to Work[37] data).

29 Bureau of Economic Analysis, *Regional Economic Accounts*, http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1 (includes *Gross Domestic Product by State*, *Quarterly State Personal Income*, and *Annual State Personal Income*).
30 U.S. Census Bureau, *Commuting (Journey to Work)*, http://www.census.gov/hhes/commuting/data/.
31 Beer Institute, *Brewers Almanac 2013*, http://www.beerinstitute.org/assets/uploads/Brewers_Almanac-_20131.xlsx (older editions also used).
32 Centers for Disease Control and Prevention, *Behavioral Risk Factor Surveillance System* via *WEAT: Web Enabled Analysis Tool*, http://apps.nccd.cdc.gov/s_broker/WEATSQL.exe/weat/freq_Year.hsql.
33 Census codes T11 and T14, respectively.
34 U.S. Travel Association, *The Impact of Travel on State Economies 2013*, 2013 Research Report, https://www.ustravel.org/research/economic-research/publications (payment required; past editions also used).
35 Bureau of Transportation Statistics, *American Travel Survey (ATS) 1995*, http://www.transtats.bts.gov/Tables.asp?DB_ID=505&DB_Name=American+Travel+Survey+(ATS)+1995&DB_Short_Name=ATS.
36 Bureau of Economic Analysis, *Regional Economic Accounts*, http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1 (includes *Gross Domestic Product by State*, *Quarterly State Personal Income*, and *Annual State Personal Income*).
37 U.S. Census Bureau, *Commuting (Journey to Work)*, http://www.census.gov/hhes/commuting/data/.

Insurance Premiums Sales Taxes

Collections are divided into three categories using Gross Domestic Product by state from BEA Regional Economic Accounts.[38] These categories are insurance taxes for real estate (housing), insurance taxes paid by businesses, and non-housing or non-business insurance taxes (automobiles, for example).

- Taxes levied on housing are assumed to be borne by the homeowner and are allocated fully to the collecting state.
- Those levied on businesses are assumed to be borne by owners of capital nationwide and allocated to states based on share of capital income (capital gains realizations plus dividends plus interest income). Data on capital gains is from the IRS Statistics of Income,[39] while data on dividends and interest income and net earnings are from BEA Regional Economic Accounts.[40]
- The remainder, those taxes that are paid for other personal insurance (like automobiles) are assumed to be borne by the consumer (this time within the state itself, not nationwide) and are allocated fully to the collecting state.

Motor Fuels Sales Taxes

Motor fuel sales taxes, as classified by the Census Bureau, include the taxes imposed on three main motor fuels: aviation fuel, diesel fuel, and motor gasoline.

- Taxes paid on aviation fuel are assumed to be borne by travelers to the United States worldwide, with a double weight applied to U.S. travelers (relative to foreign travelers). These are allocated in the same manner as the Federal Air Transport Tax (see Table 3 in Section C).
- Taxes paid for diesel fuel are assumed to be borne by consumers nationwide and allocated to states based on their share of disposable personal income.[41]
- Motor fuel taxes are divided into two groups: those borne by domestic residents and those borne by tourists driving in the state. The amount of fuel consumed by tourists in a state is estimated using data from the USTA[42] and is allocated to states using data from the American Travel Survey[43] which was extrapolated using population growth. The non-tourist portion (the remainder) is allocated to residents of the collecting state (80 percent) and a small fraction on the basis of wages by place of work (20 percent). This data is from BEA Regional Economic

38 Bureau of Economic Analysis, *Regional Economic Accounts*, http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1 (includes *Gross Domestic Product by State*, *Quarterly State Personal Income*, and *Annual State Personal Income*).
39 Internal Revenue Service, *SOI [Statistics of Income] Tax Stats – Historic Table 2*, http://www.irs.gov/uac/SOI-Tax-Stats---Historic-Table-2.
40 Bureau of Economic Analysis, *Regional Economic Accounts*, http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1 (includes *Gross Domestic Product by State*, *Quarterly State Personal Income*, and *Annual State Personal Income*).
41 See note 35 for definition of disposable personal income.
42 U.S. Travel Association, *The Impact of Travel on State Economies 2013*, 2013 Research Report, https://www.ustravel.org/research/economic-research/publications (payment required; past editions also used).
43 Bureau of Transportation Statistics, *American Travel Survey (ATS) 1995*, http://www.transtats.bts.gov/Tables.asp?DB_ID=505&DB_Name=American+Travel+Survey+(ATS)+1995&DB_Short_Name=ATS.

Accounts44 and Census Journey to Work.[45] (Note that for most states, a large fraction of "tourists" are actually in-state residents driving long-trips.)

Public Utilities Sales Taxes

Public utility taxes are 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 tax collections are split into electricity taxes, telephone taxes, water taxes, and television taxes. The largest and primary category are public utility taxes on electricity.

Public utility taxes on electricity are allocated initially to states based upon electricity consumption by state by sector from the Energy Information Agency (EIA).[46] Then, these taxes are further divided within states into five sector-specific categories based on end use: electricity used in the transportation sector, the industrial sector, the residential sector, the commercial sector, and electricity exported to other states. This is done using EIA data, as well.

- Taxes on the transportation sector are assumed to be borne by the entire nation and allocated to states based on their share of disposable personal income.[47]
- Industrial sector taxes are also borne by entire national and allocated via disposable personal income.[48]
- Residential electricity taxes are assumed to be fully borne by residents of the collecting state.
- Commercial sector electricity taxes are allocated in the same manner as retail sales taxes using (see General and Selective Sales Taxes).
- Adjustments are made for the important and exporting of electricity across state lines (states importing taxed electricity's collections are allocated from nationwide pool of exporting state collections).

Note that adjustments are made for the exporting and importing of electricity between states using EIA data.[49]

Public utility taxes on telephone are divided into two subgroups: taxes paid by businesses and taxes paid by non-business (households). Taxes paid by businesses are assumed to be borne by consumers nationwide and are allocated to states based on their share of

44 Bureau of Economic Analysis, *Regional Economic Accounts*, http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1 (includes *Gross Domestic Product by State*, *Quarterly State Personal Income*, and *Annual State Personal Income*).
45 U.S. Census Bureau, *Commuting (Journey to Work)*, http://www.census.gov/hhes/commuting/data/.
46 U.S. Energy Information Administration, *State Energy Data System (SEDS)*, http://www.eia.gov/state/seds/ (includes both production and consumption data).
47 See note 35 for definition of disposable personal income.
48 *Id.*
49 U.S. Energy Information Administration, *State Energy Data System (SEDS)*, http://www.eia.gov/state/seds/ (includes both production and consumption data).

disposable personal income.[50] Those taxes paid by households are assumed to be borne by residents of the collecting state. The same procedure is done for public utility taxes on water. Public utility taxes on television are assumed to be entirely from personal consumption and are thus assumed to be borne by residents of the collecting state.

Tobacco Products Sales Taxes

This portion of the model, similar to the portion addressing Alcoholic Beverages Sales Taxes, attempts to account for smuggling across state lines by assuming that a state is either solely an importer or solely an exporter of alcoholic beverages. This assumption is determined by comparing state sales data with state consumption data. If a state's sales exceeded its consumption, it is deemed an exporter. If a state's consumption exceeds its sales, it is deemed an importer.

State-by-state sales data (by place of sale) is taken from the Orzechowski and Walker' *Tax Burden on Tobacco*[51] (allocation uses this data series, as well). Consumption data for each state (by place of resident consumption) is taken from the Centers for Disease Control and Prevention's (CDC) Behavioral Risk Factor Surveillance System.[52]

If the state is deemed an exporter, total sales multiplied by one minus the ratio of consumption sales is used as the collections associated with that state. Then, the collections from all states that are deemed exporter states are aggregated into a pool of national exported taxes and then allocated to consumers nationwide based on share of disposable personal income and based also upon estimated importation of cigarettes by state. If a state is deemed an importer, taxes are assumed to be borne by residents of the collecting state.

Alcoholic Beverages License Taxes

Total state collections are allocated based on same distribution as Alcoholic Beverages Sales Taxes.

Amusements License Taxes

Total state collections are allocated based on same distribution as Amusements and Pari-Mutuels Taxes. Please refer to Figure 3.

Corporations License Taxes

Total state collections are allocated based on same distribution as Corporate Income Taxes (discussed in subsequent section).

50 See note 35 for definition of disposable personal income.
51 Orzechowski and Walker, *The Tax Burden on Tobacco*, *Historical Compilation*, Vol. 46 (2011), http://www.taxadmin.org/fta/tobacco/papers/Tax_Burden_2011.pdf (older editions also used).
52 Centers for Disease Control and Prevention, *Behavioral Risk Factor Surveillance System* via *WEAT: Web Enabled Analysis Tool*, http://apps.nccd.cdc.gov/s_broker/WEATSQL.exe/weat/freq_Year.hsql.

Hunting and Fishing License Taxes and Other License Taxes[53]

Total state collections are first divided into two categories: personal license taxes and business license taxes. The amount estimated to be personal is equal to the minimum of BEA's "Other Personal Taxes" category from the Annual State Personal Income data (Regional Economic Accounts),[54] or the "Hunting and Fishing Licenses" plus "Other Licenses" from Census Government Finances Division.[55] The business amount is assumed to be the remainder. The personal portion is assumed to be borne by residents of the collections state, while the business portion is assumed to be borne by consumers nationwide and allocated to states using share of disposable personal income.[56]

Motor Vehicles License Taxes and Motor Vehicle Operators License Taxes[57]

Total state collections are initially divided into two categories: personal license taxes and business license taxes. The personal amount equals the BEA Regional Economic Accounts estimate of motor vehicle licenses from Annual State Personal Income data.[58] The business amount is assumed to be the remainder. The personal portion is assumed to be borne of residents of the collecting state. The business portion is assumed to be borne by consumers nationwide and is allocated to states based on their share of disposable personal income.[59]

Public Utilities License Taxes

Total state collections are allocated based on same distribution as Public Utilities Sales Taxes. Please refer to Figure 6.

Occupation and Business License Taxes NEC (Not Elsewhere Classified)

Total state collections are allocated to states based on share of gross earnings (from BEA Regional Economic Accounts) and includes adjustment for commuters.

Individual Income Taxes

In all states besides the eight that do not tax ordinary income, 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.

53 Census codes T23 and T29, respectively.
54 Bureau of Economic Analysis, *Regional Economic Accounts*, http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1 (includes *Gross Domestic Product by State*, *Quarterly State Personal Income*, and *Annual State Personal Income*).
55 The U.S. Census Bureau's Government Finance Division encompasses four separate data sources: *State Government Finances* (http://www.census.gov/govs/state/); *State Government Tax Collections* (http://www.census.gov/govs/statetax/), *State & Local Government Finance* (https://www.census.gov/govs/local/), and *Quarterly Summary of State & Local Taxes* (http://www.census.gov/govs/qtax/).
56 See note 35 for definition of disposable personal income.
57 Census codes T24 and T25, respectively.
58 Bureau of Economic Analysis, *Regional Economic Accounts*, http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1 (includes *Gross Domestic Product by State*, *Quarterly State Personal Income*, and *Annual State Personal Income*).
59 See note 35 for definition of disposable personal income.

Total state collections are divided into two categories: income taxes paid by residents and income taxes paid by nonresidents. The portion that is paid by nonresidents is separated out based on each state's Department of Revenue data (if available). If this data is unavailable, amount paid nonresidents is estimated using Census Journey to Work data. Income taxes paid by residents are borne fully by the collecting state, and income taxes paid by nonresidents are allocated to their state or residence based on state Department of Revenue or Census Journey to Work[60] data.

Adjustments are made for reciprocity agreements between states,[61] proprietor income (using BEA Regional Economic Accounts data[62]) since some business income is subject to tax by a taxing jurisdiction even under a reciprocal agreement, and residents of other countries. The share of local income taxes borne by residents versus nonresidents is assumed to follow the same breakdown as state-level income taxes.

Corporate Income Taxes

In this study, we assume that corporate income taxes are borne equally by capital and labor. In other words, we assume that 50 percent of each state's corporate income tax collections are paid by U.S. residents based upon their share of capital income (as defined by dividends plus interest income plus capital gains realizations. Data on capital gains is from the IRS Statistics of Income,[63] while data on dividends and interest income are from BEA Regional Economic Accounts.[64] The remaining 50 percent is allocated to U.S. residents based upon their share of the nation's wage and salary income using data from BEA Regional Economic Accounts.[65]

Death and Gift Taxes

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. Collections are allocated entirely to residents of the collecting state. The same applies for gift taxes.

Documentary and Stock Transfer Taxes

Total state collections allocated based on same distribution as Property Taxes, less personal property taxes.[66] Please refer to Figure 1.

60 U.S. Census Bureau, *Commuting (Journey to Work)*, http://www.census.gov/hhes/commuting/data/.
61 As reported by Commerce Clearing House.
62 Bureau of Economic Analysis, *Regional Economic Accounts*, http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1 (includes *Gross Domestic Product by State*, *Quarterly State Personal Income*, and *Annual State Personal Income*).
63 Internal Revenue Service, *SOI [Statistics of Income] Tax Stats – Historic Table 2*, http://www.irs.gov/uac/SOI-Tax-Stats---Historic-Table-2.
64 Bureau of Economic Analysis, *Regional Economic Accounts*, http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1 (includes *Gross Domestic Product by State*, *Quarterly State Personal Income*, and *Annual State Personal Income*).
65 Bureau of Economic Analysis, *Regional Economic Accounts*, http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1 (includes *Gross Domestic Product by State*, *Quarterly State Personal Income*, and *Annual State Personal Income*).
66 Bureau of Economic Analysis, *Regional Economic Accounts*, http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1 (includes *Gross Domestic Product by State*, *Quarterly State Personal Income*, and *Annual State Personal Income*).

Severance Taxes

Severance tax collections are first divided into taxes on energy and taxes on non-energy (timber, for example) using GDP by State data from BEA Regional Economic Accounts.[67] Then using Energy Information Administration[68] data on production by state, the energy portion of severance taxes are divided into further into three categories based upon their share of energy production in a state: coal, natural gas, and crude oil. Then these three categories of imbedded severance taxes are initially allocated to states based on that state's share of coal, natural gas, or crude oil consumption.

Each of these three consumption categories (coal, natural gas, or crude oil) in each state is divided further into five sectors (residential sector, electricity sector, commercial sector, industrial sector, and transportation sector).

- Residential sector taxes are assumed to be borne by residents of the collecting state for all three consumption categories (coal, natural gas, and crude oil).
- Electricity sector severance taxes follow the same distribution as electricity Public Utilities Sales Taxes in a state (see electricity portion of Public Utilities Sales Taxes) for all three consumption categories (coal, natural gas, and crude oil).
- Severance taxes paid on energy use by the commercial sector are allocated in the same manner as the retail trade sales taxes (see General and Selective Sales Taxes) for all three consumption categories (coal, natural gas, and crude oil).
- Industrial sector taxes are assumed to be borne by consumers nationwide and are allocated to states based on share of disposable personal income[69] for all three consumption categories (coal, natural gas, and crude oil).
- Transportation sector severance taxes in the coal and natural gas consumption categories are assumed to be borne by residents of the collection state. Transportation sector taxes in the crude oil consumption category are further divided into three categories: aviation fuel, motor gasoline, and other (residual and distillate fuel, for example). Aviation fuel follows the same allocation as the Federal Air Transport Tax (see Table 3 in Section C). Motor gasoline follows same allocation as Motor Fuels Sales Taxes. The final category, "other," is assumed to be borne by consumers nationwide and is allocated to states based on share of disposable personal income.[70]

This method includes the possibility that another state's residents bear the burden of severance taxes that are imbedded in final products sold by businesses in the of commercial or industrial sector, as well as those embedded in transportation prices.

Non-energy severance taxes are assumed to be borne by consumers nationwide and are

67 *Id.*
68 U.S. Energy Information Administration, *State Energy Data System (SEDS)*, http://www.eia.gov/state/seds/ (includes both production and consumption data).
69 See note 35 for definition of disposable personal income.
70 *Id.*

allocated to states based on share of disposable personal income.[71]

Other NEC (Not Elsewhere Classified) Taxes

Total state collections are allocated entirely to residents of collecting state.

Special Assessments

Total state collections are allocated based on same distribution of Property Taxes, less personal property taxes.[72] Please refer to Figure 1.

Section C
Income Definition, Incidence Assumptions, and Allocation Methods in Tax Foundation State-Local Tax Burden Estimates

The definition of income used in this study is a hybrid between the Bureau of Economic Analysis's calculation of "personal income"[73] and the income concept used by the Congressional Budget Office in its annual study of effective federal tax rates.[74]

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 nonfungible portion of Medicare and Medicaid, initial contributions to pensions from employers, and imputed personal interest. See Table 3 at the end of this Appendix for detailed information on each subcomponent of income and the allocation method of attributing each national measure to the states.

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. There is also a timing problem with respect to the corporate income taxes paid and the fact that capital gains realizations are used as opposed to retained earnings (accrued capital gains). In this study, due to systematic movements across geographies over life cycles (such as movements to Arizona or Florida, for example) and the fact that we are only looking at state and local taxes where the corporate income tax is relatively minor, capital gains realizations are used.

71 *Id.*
72 Bureau of Economic Analysis, *Regional Economic Accounts*, http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1 (includes *Gross Domestic Product by State*, *Quarterly State Personal Income*, and *Annual State Personal Income*).
73 The Bureau of Economic Analysis defines personal income as "[t]he income that persons receive in return for their provision of labor, land, and capital used in current production, plus current transfer receipts less contributions for government social insurance (domestic). Personal income arising from current production consists of compensation of employees, proprietors' income with inventory valuation adjustment and capital consumption adjustment (CCAdj), rental income of persons with CCAdj, and personal income receipts on assets (personal interest income and personal dividend income)." *See* Bureau of Economic Analysis, *Glossary: National Income and Product Accounts*, at 23, http://www.bea.gov/national/pdf/methodology/NIPA%20Glossary%209-30-13.pdf.
74 For the Congressional Budget Office's definition of income, *see* Congressional Budget Office, *Effective Federal Tax Rates, 1979-1997* (Oct. 1, 2001), at 20, http://www.cbo.gov/sites/default/files/cbofiles/attachments/2001EffectiveTaxRate.pdf#page=44. *See also* Congressional Budget Office, *Effective Federal Tax Rates, 1997 to 2000* (Aug. 29, 2003), at 4, http://www.cbo.gov/sites/default/files/cbofiles/attachments/08-29-2003AverageTaxRates.pdf#page=14.

To determine the amount of income within each state for a fiscal year, national quarterly totals for each income category were taken from BEA National Income and Product Accounts Tables (NIPA)[75] and allocated to states using an allocator series that was created using state-by-state income data from two sources: BEA Regional Economic Accounts[76] and the Internal Revenue Service (IRS) Statistics of Income Division (state-by-state data from historic Table 2).[77]

Income amounts are on a July-June basis, and are thereby not equivalent to a calendar year. When possible, quarterly data from BEA Regional Economic Accounts[78] 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 largest portion of income in our measure, personal income, was allocated perfectly since quarterly data is available at both the national level and regional level from BEA. For other variables such as capital gains, IRS data that is only available on a tax year (calendar year) basis was used and the fiscal year split, as noted above, 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 (CPS)[79] was the source of the fungibility fraction and it was assumed to be constant for all states (but differs between Medicaid, which is not very fungible, and Medicare, which is highly fungible). Due to the fact that the CPS historically underreports health insurance and program participation, upward adjustments were made to the CPS aggregate data to reflect the underreporting as measured by an Urban Institute study from 2007.[80]

Table 3: Detailed Descriptions of Income Subcomponents, Incidence Assumptions, and Method of Allocation in Tax Foundation State-Local Tax Burden Estimates

	Income =	Incidence Assumption/Method of Allocation
1	Personal Income	National total from National Income and Product Accounts (NIPA) "Personal Income and Its Disposition" table, "Personal Income" series (Table 2.1, Line 1).[33] Allocated to states via "Personal Income" from Quarterly State Personal Income "Quarterly Income Summary" table (Table SQ4, Line 10).[34]
2	Plus Capital Gains Realizations	National total from former NIPA Table 7.19 (BEA no longer produces this table as it used to be. Old data is used and then recent years are extrapolated using population growth.) Allocated to states using "Net Capital Gain (Less Loss) in AGI" from Internal Revenue Service (IRS).[35] Recent years extrapolated using growth of "Dividends, Interest, and Rent" from Annual State Personal Income "State Economic Profiles" table (Table SA30, Line 90).[36]

75 Bureau of Economic Analysis, *National Income and Product Accounts Tables*, http://www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1#reqid=9&step=1&isuri=1.
76 Bureau of Economic Analysis, *Regional Economic Accounts*, http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1 (includes *Gross Domestic Product by State*, *Quarterly State Personal Income*, and *Annual State Personal Income*).
77 Internal Revenue Service, *SOI [Statistics of Income] Tax Stats – Historic Table 2*, http://www.irs.gov/uac/SOI-Tax-Stats---Historic-Table-2.
78 *Id.*
79 U.S. Census Bureau & Bureau of Labor Statistics, *Current Population Survey (CPS)*, http://www.census.gov/cps/.
80 The Urban Institute, Laura Wheaton, *Underreporting of Means-Tested Transfer Programs in the CPS and SIPP* (Jan. 1, 2007), http://www.urban.org/UploadedPDF/411613_transfer_programs.pdf.

3	Plus Pension and Life Insurance Benefits	National total from NIPA “Employer Contributions for Employee Pension and Insurance Funds by Industry and by Type” table (Table 6.11), Lines 38 (“Pension Plans”) and 42(“Group Life Insurance”).[37] Allocated to states based using “Taxable Pensions and Annuity in AGI” from IRS.[38] Recent years extrapolated using change in “Social Security Benefits” from Annual State Personal Income “Personal Current Transfer Receipts” table (SA35, Line 40).[39]
4	Plus Corporate Income Taxes (Federal, State, Local)	National total from NIPA “Federal Government Current Receipts and Expenditures” table, “Taxes on Corporate Income” series (Table 3.2, Line 7).[40] Allocated to states in the following manner: 50 percent based on state’s share of total capital income, which is defined as capital gains (“Net Capital Gain…in AGI” from IRS[41]) plus dividends (“Personal Dividend Income”, Annual State Personal Income Table SA30 “State Economic Profiles”, Line 91[42]) plus interest (“Personal Interest Income,” Annual State Personal Income Table SA30, Line 92[43]) and 50 percent based upon state’s share of total net earnings (“Net Earnings” from Annual State Personal Income Table SA30, Line 45[44]).
5	Plus Federal Gas Tax	National total from NIPA “Taxes on Production and Imports” (TOPI) table, series on Federal Gasoline Excise Tax (Table 3.5, Line 4).[45] Allocated to states using “Motor Gasoline Consumed by the Transportation Sector” (code MGACB) from Energy Information Administration (EIA) State Energy Data System.[46]
6	Plus Federal Diesel Fuel Tax	National total from NIPA TOPI table, series on Federal Diesel Fuel Excise Tax (Table 3.5, Line 7).[47] Allocated to states using disposable personal income by state, as calculated by Tax Foundation.[48]
7	Plus Federal Tobacco Tax	National total from NIPA TOPI table, series on Federal Tobacco Excise Tax (Table 3.5, Line 6).[49] Allocated to states using adult cigarette use from Centers for Disease Control And Prevention (CDC).[50]
8	Plus Federal Alcohol Tax	National total from NIPA TOPI table, series on Federal Alcohol Excise Tax (Table 3.5, Line 5).[51] Allocated to states using alcohol consumption data from CDC.[52]
9	Plus Federal Air Transport Tax	National total from NIPA TOPI table, series on Federal Air Transport Excise Tax (Table 3.5, Line 8).[53] Before allocation to states is done, business and international was first subtracted using Tourism Satellite Accounts data[54] (remainder is assumed to be personal travel). Personal portion allocated to states using state personal air travel data from 1995 American Travel Survey transportation mode data[55] (recent years were extrapolated using population growth). Business portion allocated using disposable personal income by state, as calculated by Tax Foundation.[56]
10	Plus Federal Windfall Profits Tax	Not applicable for recent years, but for 1980s, national total from NIPA TOPI table, series on Federal Air Windfall Profits Excise Tax (Table 3.5, Line 9).[57] Allocated 50 percent via disposable personal income[58] and 50 percent based on “Motor Gasoline Consumed by the Transportation Sector” (code MGACB) from EIA State Energy Data System.[59]
11	Plus Other Federal Excise Taxes	National total from NIPA TOPI table, series on Other Excise Tax (Table 3.5, Line 10).[60] Allocated using disposable personal income by state, as calculated by Tax Foundation.[61]

12	Plus Federal Customs	National total from NIPA "Federal Government Current Receipts and Expenditures" table, "Customs Duties" series (Table 3.2, Line 6).[62] Allocated using disposable personal income by state, as calculated by Tax Foundation.[63]
13	Plus State and Local Taxes on Production and Imports	National total from NIPA "State and Local Government Current Receipts and Expenditures" table, "Taxes on Production and Imports" series (Table 3.3, Line 6).[64] Allocated using 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 and gift taxes).
14	Less Subsidies Received	National total from NIPA "Federal Government Receipts and Expenditures" table, "Subsidies" series (Table 3.2, Line 32).[65] Allocated to states using "Subsides" (all industry total) from the Gross Domestic Product by State (industry code 101).[66]
15	Less Nonfungible portion of Medicare	National total from NIPA "Government and Social Benefits" table, "Medicare" series (NIPA Table 3.12, Line 6)[67] minus adjustment for underreporting in Current Population Survey as outlined in Urban Institute study[68]). Adjustment made so that only nonfungible portion is used. Allocated to states using "Medicare Benefits" from Annual State Personal Income (SA 35, Line 111).[69]
16	Less Nonfungible portion of Medicaid	National total from NIPA "Government and Social Benefits" table, "Medicaid" series (NIPA Table 3.12, Line 33)[70] minus adjustment for underreporting in Current Population Survey as outlined in Urban Institute study[71]). Adjustment made so that only nonfungible portion is used. Allocated to states using "Medicaid Benefits" from Annual State Personal Income (SA 35, Line 113).[72]
17	Less Pension and life insurance contributions	National total from NIPA "Employer Contributions for Employee Pension and Insurance Funds by Industry and by Type" table (Table 6.11),[73] summation of lines 23 and 33 ("Pension plans" and "Group life insurance" under "Employer contributions for employee pension and insurance funds." Allocated to states using "Supplements to wages and salaries by place of work" from Annual Quarterly Personal (SQ7N, Line 50).[74]
18	Less Investment income of life insurance carriers and pension plans	National total from former NIPA Table 7.19 (BEA no longer produces this table as it used to be. Old data is used and then recent years are extrapolated using population growth.) Allocated to states using "Personal dividend income" (SA30, Line 91) and "Personal interest income" (SA30, Line 92) from Annual State Personal Income.[75] Recent years, if unavailable, are extrapolated using "Dividends, interest, and rent" from Quarterly State Personal Income (SQ4, Line 47).[76]

(Table Footnotes)

1 Bureau of Economic Analysis, National Income and Product Accounts Tables, http://www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1#reqid=9&step=1&isuri=1.

2 Bureau of Economic Analysis, Regional Economic Accounts, http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1 (includes Gross Domestic Product by State, Quarterly State Personal Income, and Annual State Personal Income).

3 Bureau of Economic Analysis, Satellite Industry Accounts Data, http://www.bea.gov/industry/tourism_data.htm (includes Tourism Satellite Accounts and Transportation Satellite Accounts).

4 Bureau of Economic Analysis, Industry Economic Accounts, http://www.bea.gov/industry/ (includes Gross Domestic Product by Industry and Benchmark Input-Output Accounts).

5 U.S. Census Bureau, State Government Finances, http://www.census.gov/govs/state/.

6 U.S. Census Bureau, State Government Tax Collections, http://www.census.gov/govs/statetax/.

7 U.S. Census Bureau, State & Local Government Finance, https://www.census.gov/govs/local/.

8 U.S. Census Bureau, Quarterly Summary of State & Local Taxes, http://www.census.gov/govs/qtax/.

9 U.S. Census Bureau, American Community Survey, http://www.census.gov/acs/.

10 See note 3.

11 U.S. Census Bureau, Housing, http://www.census.gov/housing/.

12 U.S. Census Bureau, Commodity Flow Survey, http://www.census.gov/econ/cfs/.

13 U.S. Census Bureau, Economic Census via American FactFinder, http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t. See also U.S. Census Bureau, 2007 Economic Census, http://www.census.gov/econ/census07/index.html.

14 U.S. Census Bureau & Bureau of Labor Statistics, Current Population Survey (CPS), http://www.census.gov/cps/.

15 U.S. Census Bureau, The 2012 Statistical Abstract, http://www.census.gov/compendia/statab/ (earlier editions can be found at http://www.census.gov/compendia/statab/past_years.html).

16 U.S. Census Bureau, Economic Indicators, http://www.census.gov/cgi-bin/briefroom/BriefRm.

17 U.S. Census Bureau, Commuting (Journey to Work), http://www.census.gov/hhes/commuting/data/.

18 Urban Institute-Brookings Institution Tax Policy Center, State & Local Finance Data Query System (SLF-DQS), http://slfdqs.taxpolicycenter.org/.

19 The Nelson A. Rockefeller Institute of Government, State Revenue Reports, http://www.rockinst.org/government_finance/state_revenue_reports.aspx.

20 Council on State Taxation, Total state and local business taxes, State-by-state estimates for fiscal year 2012, http://www.cost.org/WorkArea/DownloadAsset.aspx?id=84767 (old editions can be found at http://www.cost.org/search.aspx?searchtext=state%20and%20local%20business%20tax%20study).

21 Internal Revenue Service, SOI [Statistics of Income] Tax Stats – Historic Table 2, http://www.irs.gov/uac/SOI-Tax-Stats---Historic-Table-2.

22 U.S. Energy Information Administration, State Energy Data System (SEDS), http://www.eia.gov/state/seds/ (includes both production and consumption data).

23 U.S. Travel Association, The Impact of Travel on State Economies 2013, 2013 Research Report, https://www.ustravel.org/research/economic-research/publications (payment required; past editions also used).

24 Bureau of Transportation Statistics, American Travel Survey (ATS) 1995, http://www.transtats.bts.gov/Tables.asp?DB_ID=505&DB_Name=American+Travel+Survey+(ATS)+1995&DB_Short_Name=ATS.

25 Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System via WEAT: Web Enabled Analysis Tool, http://apps.nccd.cdc.gov/s_broker/WEATSQL.exe/weat/freq_Year.hsql.

26 Beer Institute, Brewers Almanac 2013, http://www.beerinstitute.org/assets/uploads/Brewers_Almanac-_20131.xlsx (older editions also used).

27 Orzechowski and Walker, The Tax Burden on Tobacco, Historical Compilation, Vol. 46 (2011), http://www.taxadmin.org/fta/tobacco/papers/Tax_Burden_2011.pdf (older editions also used).

28 Congressional Budget Office, The Budget and Economic Outlook: Fiscal Years 2013 to 2023, http://www.cbo.gov/sites/default/files/cbofiles/attachments/43907-BudgetOutlook.pdf (new edition is used in addition to data from older versions).

29 Congressional Budget Office, Historical Budget Data—February 2013, http://www.cbo.gov/publication/43904.

30 Congressional Budget Office, Budget Projections—February 2013 Baseline Projections, http://www.cbo.gov/publication/43905.

31 Congressional Budget Office, Individual Income Tax Receipts and the Individual Tax Base—February 2013 Baseline, http://www.cbo.gov/publication/43901.

32 U.S. Census Bureau, Description of Tax Categories, in Federal, State, and Local Governments: Government Finance and Employment Classification Manual, http://www.census.gov/govs/www/class_ch7_tax.html.

33 Bureau of Economic Analysis, National Income and Product Accounts Tables, http://www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1#reqid=9&step=1&isuri=1 [hereinafter BEA NIPA Tables].

34 Bureau of Economic Analysis, Regional Economic Accounts, http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1 [hereinafter BEA Regional Tables].

35 Internal Revenue Service, SOI [Statistics of Income] Tax Stats – Historic Table 2, http://www.irs.gov/uac/SOI-Tax-Stats---Historic-Table-2 [hereinafter IRS Statistics of Income].

36 BEA Regional Tables, supra note 112.

37 BEA NIPA Tables, supra note 111.

38 Internal Revenue Service, SOI [Statistics of Income] Tax Stats – Historic Table 2, http://www.irs.gov/uac/SOI-Tax-Stats---Historic-Table-2.

39 BEA Regional Tables, supra note 112.

40 BEA NIPA Tables, supra note 111.

41 IRS Statistics of Income, supra note 113.

42 BEA Regional Tables, supra note 112.

43 Id.

44 Id.

45 BEA NIPA Tables, supra note 111.

46 U.S. Energy Information Administration, State Energy Data System (SEDS), http://www.eia.gov/state/seds/.

47 BEA NIPA Tables, supra note 111.

48 See note 35 for definition of disposable personal income.

49 BEA NIPA Tables, supra note 111.

50 Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System via WEAT: Web Enabled Analysis Tool, http://apps.nccd.cdc.gov/s_broker/WEATSQL.exe/weat/freq_Year.hsql.

51 BEA NIPA Tables, supra note 111.

52 Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System via WEAT: Web Enabled Analysis Tool, http://apps.nccd.cdc.gov/s_broker/WEATSQL.exe/weat/freq_Year.hsql.

53 BEA NIPA Tables, supra note 111.

54 "Domestic passenger air transportation services, business" and "Domestic passenger air transportation services, nonresidents" from Table 3, "Demand for Commodities by Type of Visitor" (no longer published by BEA), of Bureau of Economic Analysis, Satellite Industry Accounts Data, http://www.bea.gov/industry/tourism_data.htm.

55 "Person Trip Characteristics" section, "Principal Transportation from Origin to Destination" (specific field name is "TransportOriginDest") of Bureau of Transportation Statistics, American Travel Survey (ATS) 1995, http://www.transtats.bts.gov/Tables.asp?DB_ID=505&DB_Name=American+Travel+Survey+(ATS)+1995&DB_Short_Name=ATS.

56 See note 35 for definition of disposable personal income.

57 BEA NIPA Tables, supra note 111.

58 See note 35 for definition of disposable personal income.

59 U.S. Energy Information Administration, State Energy Data System (SEDS), http://www.eia.gov/state/seds/.

60 BEA NIPA Tables, supra note 111.

61 See note 35 for definition of disposable personal income.

62 BEA NIPA Tables, supra note 111.

63 See note 35 for definition of disposable personal income.

64 BEA NIPA Tables, supra note 111.

65 Id.

66 BEA Regional Tables, supra note 112.

67 Id.

68 The Urban Institute, Laura Wheaton, Underreporting of Means-Tested Transfer Programs in the CPS and SIPP (Jan. 1, 2007), http://www.urban.org/UploadedPDF/411613_transfer_programs.pdf.

69 BEA Regional Tables, supra note 112.

70 BEA NIPA Tables, supra note 111.

71 Id.

72 BEA Regional Tables, supra note 112.

73 Id.

74 Id.

75 Id.

76 Id.