

Personal Consumption Expenditures by State for 1997–2014

By Christian Awuku-Budu, Mahsa Agha Gholizadeh, Ledia Guci, and Christopher A. Lucas

IN DECEMBER 2015, the Bureau of Economic Analysis (BEA) released official statistics on personal consumption expenditures (PCE) by state for 1997–2014.¹ PCE by state is a comprehensive measure of household consumption at the state level and reflects the value of the goods and services purchased by, or on behalf of, households by state of residence.

PCE by state statistics are available for 16 expenditure categories: eight categories of goods, seven categories of services, and the net expenditures of nonprofit institutions serving households. The statistics are reported in current dollars and reflect regional variation in both prices and quantities. Because current-dollar statistics reflect changes in population, per capita PCE statistics are also available.

These statistics complement other regional statistics produced by BEA to present a more complete picture of regional economies. They provide a general indication of the economic well-being of households in a state. In addition, they provide information on household consumption patterns across states and over time—for instance, how individual households allocate their spending among necessities and more discretionary-type items and how they adjust their spending in light of changes in economic conditions.

Highlights from the newly released statistics for 2014 include the following:

- Across all states, total PCE grew 4.2 percent. This growth ranged from 2.1 percent in West Virginia to 7.4 percent in North Dakota.
- Across all states, the largest contributors to the growth in total PCE were housing and utilities as well as health care.
- Across all states, housing and utilities expenditures grew 4.1 percent. They grew fastest in North Dakota (8.0 percent) and the District of Columbia (6.3 percent) and contributed 1.0 percentage point or more to the total PCE growth in these states.

1. Prototype PCE by state statistics for 1997–2012 were released last year for evaluation and comment by data users.

- Across all states, health care expenditures grew 3.9 percent. These expenditures grew fastest in Delaware (7.5 percent) and the District of Columbia (7.1 percent) and contributed 1.4 percentage points to the total PCE growth in these states.

- Across all states, per capita total PCE was \$37,196. It ranged from a high of \$48,020 in Massachusetts to a low of \$29,386 in Mississippi. Per capita total PCE in the District of Columbia was \$55,141.

This article describes in detail the most recent PCE by state statistics and the data and methodology used to produce the statistics.

Selected Results

PCE by state statistics provide a wealth of information for analysis of household consumption patterns and trends. The richness of these statistics and various ways to examine the data were illustrated in previous articles.² This section focuses on the latest snapshot of consumer spending across states for 2014.

Growth in PCE by state

Across all states, the growth in total PCE by state accelerated to 4.2 percent in 2014 from 3.1 percent in 2013 (table 1). Total PCE grew faster in 2014 than in 2013 in more than 40 states. Total PCE growth was generally higher in the states in the Rocky Mountain and Far West regions and lower in the Southeast region (chart 1). Outside these two regions, growth was concentrated in North Dakota, Texas, New York, the District of Columbia, and Florida.

Total PCE growth in 2014 ranged from 2.1 percent in West Virginia to 7.4 percent in North Dakota. After North Dakota, the states with the highest growth in total PCE were Colorado (5.7 percent) and Texas (5.7

2. Christian Awuku-Budu, Ledia Guci, Christopher A. Lucas, and Charles Ian Mead, “Prototype Personal Consumption Expenditures by State for 1997–2012,” SURVEY OF CURRENT BUSINESS 94 (September 2014); Christian Awuku-Budu, Ledia Guci, Christopher A. Lucas, and Carol A. Robbins, “A First Look at Experimental Personal Consumption Expenditures by State,” SURVEY 93 (August 2013).

percent). After West Virginia, the states with the slowest growth in total PCE were Missouri (2.3 percent) and Kentucky (2.4 percent).

The largest contributors to the growth in total PCE across all states were housing and utilities as well as health care followed by other services and other non-durable goods. Each of these categories contributed 0.5 percentage point or more to the growth in total PCE and collectively accounted for about half of the growth in total PCE by state (table 2).

With the exception of food services and accommodations as well as financial services and insurance cate-

gories, which contributed moderately to total PCE growth, durable-goods categories, clothing and footwear, and the remaining categories of services contributed little to the growth in total PCE. Food and beverages purchased for off-premises consumption, while a major component of total PCE by state, also contributed little to growth in total PCE by state. Gasoline and other energy goods was the only category that subtracted from growth in total PCE.

Expenditures on housing and utilities grew 4.1 percent across all states (table 3). They grew fastest in North Dakota (8.0 percent) and the District of Columbia (6.3 percent) and contributed 1.0 percentage point or more to the growth in these states.

Expenditures on health care grew 3.9 percent across all states. They grew fastest in Delaware (7.5 percent) and the District of Columbia (7.1 percent) and contributed 1.4 percentage points to the growth in total PCE in these states.

Expenditures on food and beverages for off-premises consumption grew 2.4 percent across all states. They grew fastest in the District of Columbia (6.9 percent) and North Dakota (6.7 percent) and contributed 0.5 percentage point to the growth in total PCE in these states.

Expenditures on gasoline and other energy goods declined 2.9 percent across all states. They declined for most states, but contributed to the growth in total PCE in North Dakota and Texas, where expenditures grew 4.4 percent and 1.8 percent, respectively.

Per capita PCE by state

PCE by state estimates show significant variation in per capita spending across states (chart 2 and table 4). In 2014, per capita total PCE across all states was \$37,196 and ranged from a high of \$48,020 in Massachusetts to a low of \$29,386 in Mississippi. Per capita total PCE in the District of Columbia was \$55,141.

Per capita PCE on housing and utilities across all states was \$6,720 and ranged from a high of \$9,146 in Maryland to a low of \$4,391 in West Virginia. Per capita PCE on health care across all states was \$6,128 and ranged from a high of \$9,303 in Alaska to a low of \$4,498 in Utah. For more than half of the states, per capita health care expenditures were higher than the per capita expenditures on housing and utilities. These states are located mainly in the Great Lakes, Plains, and Southeast regions.

Food and beverages for off-premises consumption and gasoline and other energy goods expenditures collectively make up a smaller share of total PCE, compared with either housing and utilities or health care. Per capita PCE on food and beverages purchased for off-premises consumption across all states was \$2,780

Table 1. Total Personal Consumption Expenditures by State, 2012–2014

	Millions of dollars			Percent change	
	2012	2013	2014	2013	2014
United States¹	11,044,057	11,386,572	11,860,250	3.1	4.2
New England	631,834	648,864	675,424	2.7	4.1
Connecticut	155,206	158,937	164,885	2.4	3.7
Maine	51,591	52,855	54,730	2.4	3.5
Massachusetts	301,676	310,105	323,916	2.8	4.5
New Hampshire	57,679	59,373	61,874	2.9	4.2
Rhode Island	39,632	40,584	41,969	2.4	3.4
Vermont	26,050	27,010	28,050	3.7	3.9
Mideast	1,948,041	2,005,264	2,086,931	2.9	4.1
Delaware	36,357	37,402	39,016	2.9	4.3
District of Columbia	33,161	34,560	36,332	4.2	5.1
Maryland	233,002	239,485	247,780	2.8	3.5
New Jersey	382,966	392,593	406,652	2.5	3.6
New York	794,283	822,169	863,447	3.5	5.0
Pennsylvania	468,272	479,054	493,704	2.3	3.1
Great Lakes	1,598,201	1,638,705	1,696,519	2.5	3.5
Illinois	467,555	479,123	496,313	2.5	3.6
Indiana	211,216	215,961	222,696	2.2	3.1
Michigan	336,987	345,440	358,916	2.5	3.9
Ohio	385,974	396,012	409,653	2.6	3.4
Wisconsin	196,469	202,169	208,940	2.9	3.3
Plains	732,178	754,871	781,803	3.1	3.6
Iowa	103,090	105,680	109,551	2.5	3.7
Kansas	94,223	97,132	100,659	3.1	3.6
Minnesota	207,189	214,284	222,922	3.4	4.0
Missouri	203,229	207,766	212,542	2.2	2.3
Nebraska	64,694	66,840	69,346	3.3	3.7
North Dakota	30,471	32,855	35,302	7.8	7.4
South Dakota	29,283	30,314	31,481	3.5	3.9
Southeast	2,555,684	2,639,438	2,741,732	3.3	3.9
Alabama	140,053	143,914	147,879	2.8	2.8
Arkansas	82,705	84,888	87,300	2.6	2.8
Florida	665,308	690,076	724,066	3.7	4.9
Georgia	305,898	317,246	331,348	3.7	4.4
Kentucky	134,138	136,953	140,240	2.1	2.4
Louisiana	143,522	148,398	153,342	3.4	3.3
Mississippi	83,130	85,543	87,985	2.9	2.9
North Carolina	294,126	305,556	318,760	3.9	4.3
South Carolina	145,501	150,894	155,991	3.7	3.4
Tennessee	199,180	204,537	211,871	2.7	3.6
Virginia	304,866	312,884	323,164	2.6	3.3
West Virginia	57,257	58,548	59,785	2.3	2.1
Southwest	1,236,775	1,287,371	1,353,920	4.1	5.2
Arizona	211,372	218,585	228,423	3.4	4.5
New Mexico	66,724	68,393	70,790	2.5	3.5
Oklahoma	116,950	120,691	125,131	3.2	3.7
Texas	841,728	879,703	929,576	4.5	5.7
Rocky Mountain	383,955	399,927	420,864	4.2	5.2
Colorado	191,213	198,751	210,037	3.9	5.7
Idaho	49,065	51,011	53,206	4.0	4.3
Montana	35,981	37,628	39,426	4.6	4.8
Utah	86,407	90,599	95,369	4.9	5.3
Wyoming	21,289	21,938	22,826	3.0	4.0
Far West	1,957,390	2,012,130	2,103,057	2.8	4.5
Alaska	31,852	32,985	34,059	3.6	3.3
California	1,386,209	1,419,344	1,482,477	2.4	4.4
Hawaii	53,545	55,701	58,232	4.0	4.5
Nevada	90,780	93,985	97,860	3.5	4.1
Oregon	133,872	138,574	145,973	3.5	5.3
Washington	261,132	271,542	284,456	4.0	4.8

1. The U.S. values reported differ from the PCE values in the national accounts because PCE by state excludes net expenditures abroad by U.S. residents, which consist of government and private employees' expenditures abroad less personal remittances in kind to nonresidents.

NOTE: Percent change from preceding period was calculated from unrounded data. Expenditures may not sum to higher-level aggregates because of rounding.

Source: U.S. Bureau of Economic Analysis

Chart 1. Percent Change in Total Personal Consumption Expenditures by State, 2013–2014

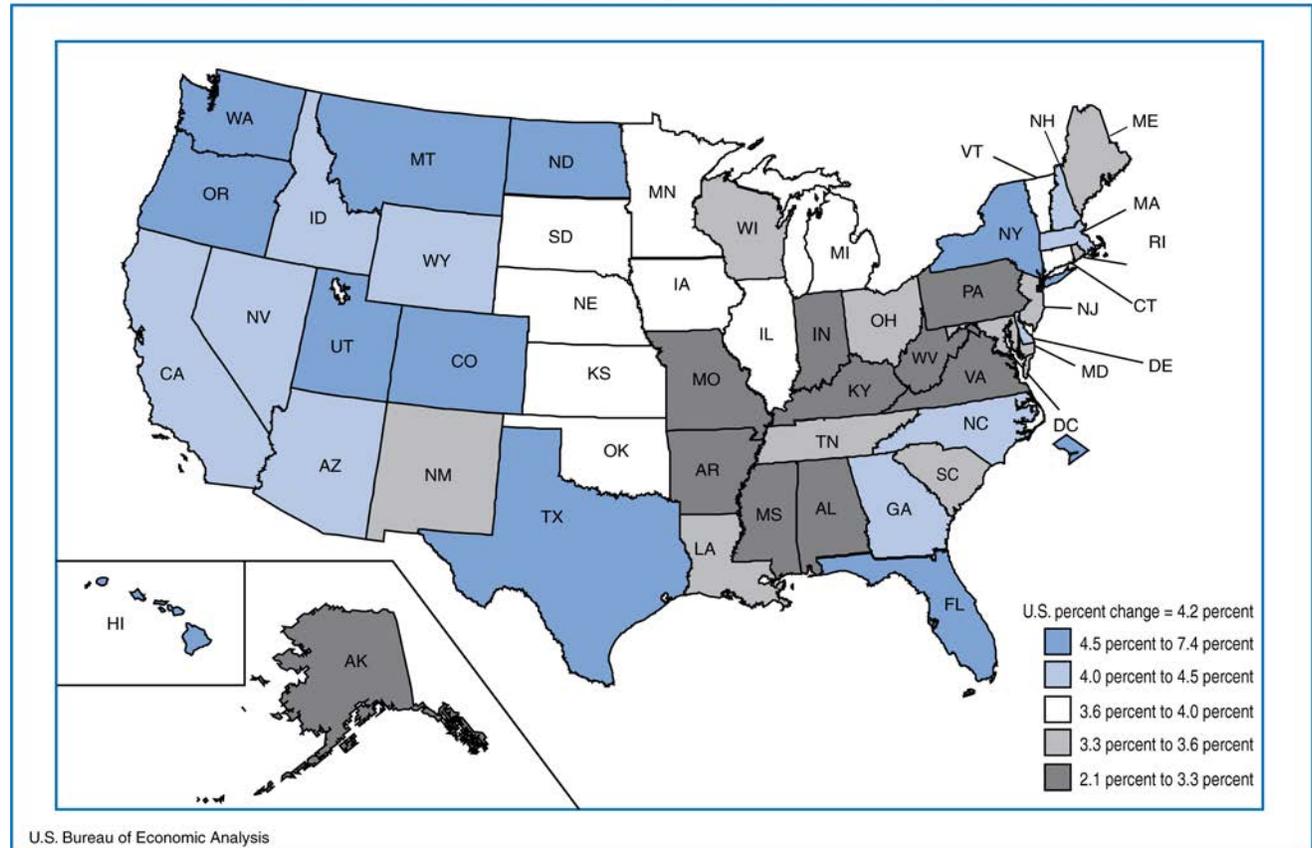
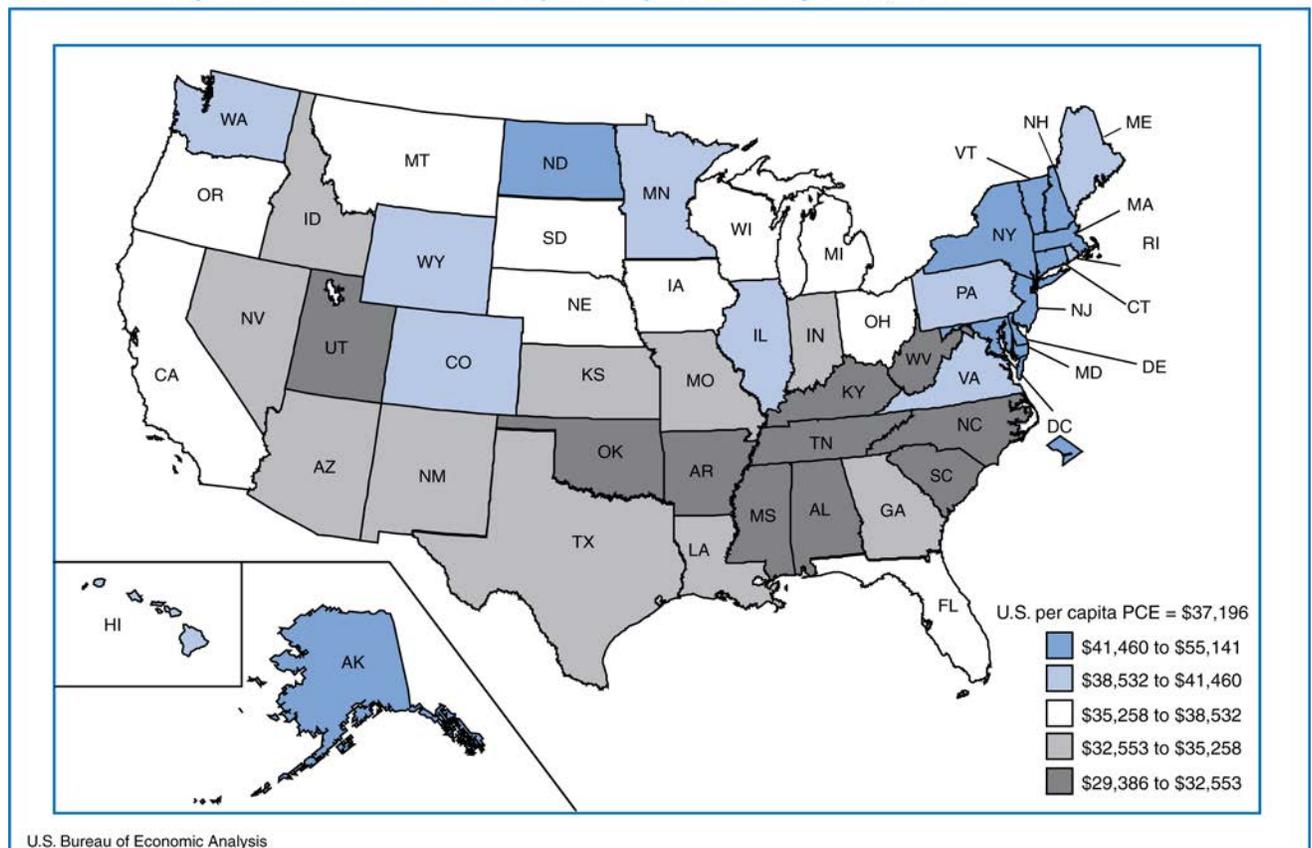


Chart 2. Per Capita Total Personal Consumption Expenditures by State, 2014



and ranged from a high of \$4,104 in Vermont to a low of \$2,289 in Oklahoma. Per capita PCE on gasoline and other energy goods across all states was \$1,258 and ranged from a high of \$4,124 in North Dakota to a low of \$710 in Hawaii.

Data and Methodology

This section discusses concepts and definitions related to PCE by state, the data and methods used for the annual estimates, and major improvements that have been made since the release of the prototype statistics in 2014.

Concepts and definitions

PCE by state measures the goods and services purchased by, and on behalf of, households and the net expenditures of nonprofit institutions serving households (NPISHs) by state of residence in the 50 states and the District of Columbia. Health care services paid for by Medicare and Medicaid and education services paid for by NPISHs and government are examples of expenditures made on behalf of households.

PCE by state also includes imputations for the consumption of goods and services without market transactions. The two main imputations in PCE by state are

Table 2. Category Contributions to Percent Change in Total Personal Consumption Expenditures by State, 2014

[Percentage points]

	Total PCE by state	Durable goods				Nondurable goods				Services							
		Motor vehicles and parts	Furnishings and durable household equipment	Recreational goods and vehicles	Other durable goods	Off-premises food and beverages	Clothing and footwear	Gasoline and other energy goods	Other nondurable goods	Housing and utilities	Health care	Transportation services	Recreation services	Food services and accommodations	Financial services and insurance	Other services	Final consumption expenditures of NPISHs
United States¹	4.2	0.2	0.1	0.1	0.0	0.2	0.1	-0.1	0.5	0.7	0.6	0.2	0.2	0.4	0.4	0.5	0.2
New England	4.1	0.2	0.0	0.1	0.0	0.2	0.0	0.0	0.4	0.6	0.7	0.2	0.2	0.3	0.4	0.6	0.2
Connecticut.....	3.7	0.1	0.1	0.1	0.0	0.2	0.0	0.0	0.3	0.6	0.5	0.1	0.2	0.2	0.4	0.4	0.3
Maine.....	3.5	0.2	0.0	0.0	0.0	0.3	0.0	-0.1	0.4	0.5	0.7	0.1	0.1	0.3	0.3	0.4	0.2
Massachusetts.....	4.5	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.4	0.7	0.8	0.2	0.2	0.3	0.4	0.7	0.2
New Hampshire.....	4.2	0.2	0.1	0.1	0.0	0.1	0.0	0.0	0.6	0.6	0.7	0.2	0.1	0.3	0.4	0.6	0.3
Rhode Island.....	3.4	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.2	0.6	0.5	0.1	0.2	0.4	0.4	0.6	0.0
Vermont.....	3.9	0.3	0.0	0.2	0.0	0.4	0.0	-0.1	0.4	0.2	0.5	0.1	0.1	0.3	0.3	0.8	0.2
Mideast	4.1	0.1	0.0	0.0	0.1	0.2	0.1	-0.1	0.5	0.7	0.7	0.2	0.2	0.3	0.4	0.5	0.2
Delaware.....	4.3	0.4	0.0	0.2	0.0	0.1	0.0	-0.1	0.2	0.3	1.4	0.1	0.2	0.3	0.4	0.7	0.2
District of Columbia.....	5.1	0.1	0.1	0.0	0.0	0.5	0.1	-0.1	0.1	1.1	1.4	0.1	0.1	0.4	0.3	0.8	0.1
Maryland.....	3.5	0.1	0.0	0.0	0.0	0.1	0.0	-0.1	0.3	1.0	0.5	0.1	0.1	0.2	0.4	0.5	0.2
New Jersey.....	3.6	0.1	0.0	0.1	0.0	0.2	0.1	-0.1	0.5	0.7	0.5	0.1	0.1	0.2	0.4	0.5	0.3
New York.....	5.0	0.1	0.0	0.0	0.1	0.2	0.2	-0.1	0.7	0.7	0.8	0.3	0.2	0.5	0.3	0.7	0.2
Pennsylvania.....	3.1	0.2	0.0	0.0	0.0	0.1	0.0	-0.1	0.2	0.6	0.7	0.1	0.1	0.2	0.3	0.4	0.2
Great Lakes	3.5	0.2	0.0	0.0	0.0	0.1	0.0	-0.1	0.4	0.7	0.6	0.2	0.2	0.2	0.3	0.5	0.2
Illinois.....	3.6	0.2	0.0	0.0	0.0	0.1	0.0	-0.1	0.2	0.9	0.6	0.2	0.1	0.2	0.2	0.6	0.2
Indiana.....	3.1	0.2	0.0	0.0	0.0	0.1	0.0	-0.3	0.3	0.7	0.3	0.2	0.1	0.2	0.3	0.5	0.4
Michigan.....	3.9	0.3	0.0	0.0	0.0	0.1	0.0	-0.1	0.7	0.6	0.5	0.2	0.3	0.2	0.3	0.4	0.1
Ohio.....	3.4	0.2	0.0	0.0	0.0	0.1	0.0	-0.1	0.3	0.6	0.7	0.2	0.2	0.3	0.4	0.3	0.2
Wisconsin.....	3.3	0.2	0.1	0.2	0.0	0.1	0.0	-0.1	0.4	0.7	0.4	0.1	0.1	0.2	0.3	0.4	0.1
Plains	3.6	0.2	0.1	0.0	0.0	0.1	0.0	-0.1	0.3	0.8	0.5	0.2	0.2	0.3	0.3	0.5	0.2
Iowa.....	3.7	0.2	0.0	0.1	0.0	0.2	0.0	-0.1	0.4	0.7	0.5	0.2	0.1	0.2	0.3	0.5	0.3
Kansas.....	3.6	0.2	0.1	0.0	0.0	0.1	0.0	-0.1	0.5	0.7	0.6	0.1	0.2	0.2	0.2	0.6	0.1
Minnesota.....	4.0	0.2	0.1	0.0	0.0	0.0	0.0	-0.1	0.3	0.8	0.7	0.3	0.3	0.3	0.3	0.5	0.2
Missouri.....	2.3	0.2	0.0	0.0	0.0	0.0	0.0	-0.2	0.1	0.7	0.2	0.1	0.1	0.3	0.3	0.3	0.1
Nebraska.....	3.7	0.3	0.1	0.1	0.0	0.3	0.1	-0.2	0.4	0.8	0.3	0.2	0.2	0.3	0.4	0.7	0.1
North Dakota.....	7.4	0.3	0.1	0.1	0.1	0.5	0.2	0.4	0.7	1.0	0.9	0.6	0.4	0.5	0.4	1.3	0.0
South Dakota.....	3.9	0.4	0.1	0.1	0.1	0.2	0.1	-0.1	0.3	0.5	0.8	0.1	0.1	0.3	0.2	0.5	0.1
Southeast	3.9	0.2	0.1	0.1	0.0	0.2	0.1	-0.2	0.5	0.7	0.6	0.1	0.2	0.4	0.4	0.5	0.1
Alabama.....	2.8	0.1	0.0	0.0	0.0	0.0	0.0	-0.3	0.5	0.6	0.4	0.0	0.1	0.2	0.4	0.3	0.2
Arkansas.....	2.8	0.2	0.0	0.0	0.0	0.2	0.0	-0.5	0.3	0.5	0.6	0.1	0.1	0.2	0.4	0.3	0.3
Florida.....	4.9	0.3	0.2	0.1	0.0	0.2	0.1	-0.1	0.6	0.5	0.9	0.2	0.2	0.5	0.4	0.5	0.1
Georgia.....	4.4	0.2	0.1	0.1	0.0	0.2	0.1	-0.1	0.6	0.8	0.6	0.2	0.1	0.4	0.4	0.8	0.0
Kentucky.....	2.4	0.1	0.0	0.0	0.0	0.0	0.0	-0.3	0.1	0.6	0.3	0.1	0.1	0.2	0.4	0.5	0.1
Louisiana.....	3.3	0.1	0.0	0.0	0.0	0.1	0.0	-0.3	0.3	0.8	0.6	0.1	0.2	0.4	0.3	0.4	0.2
Mississippi.....	2.9	0.1	0.0	0.0	0.1	0.0	0.1	-0.4	0.5	0.7	0.3	0.0	0.0	0.2	0.3	0.7	0.1
North Carolina.....	4.3	0.2	0.1	0.2	0.0	0.2	0.1	-0.1	0.7	0.8	0.6	0.1	0.1	0.3	0.4	0.5	0.0
South Carolina.....	3.4	0.2	0.1	0.1	0.0	0.2	0.1	-0.2	0.4	0.7	0.4	0.1	0.2	0.3	0.4	0.5	0.0
Tennessee.....	3.6	0.3	0.1	0.0	0.0	0.1	0.0	0.0	0.4	0.8	0.5	0.1	0.3	0.2	0.4	0.4	0.0
Virginia.....	3.3	0.1	0.0	0.0	0.0	0.1	0.0	-0.2	0.3	1.0	0.4	0.1	0.1	0.2	0.4	0.6	0.1
West Virginia.....	2.1	0.0	0.0	0.0	0.0	0.1	0.0	-0.2	0.4	0.4	0.9	0.0	0.0	0.1	0.3	0.2	-0.1
Southwest	5.2	0.3	0.1	0.0	0.0	0.3	0.0	0.0	0.7	0.9	0.8	0.2	0.2	0.4	0.5	0.5	0.1
Arizona.....	4.5	0.2	0.1	0.1	0.0	0.3	0.0	-0.1	0.7	0.9	0.5	0.1	0.2	0.4	0.4	0.5	0.2
New Mexico.....	3.5	0.2	0.0	0.0	0.0	0.1	0.0	-0.1	0.5	0.5	0.6	0.0	0.1	0.4	0.4	0.5	0.1
Oklahoma.....	3.7	0.1	0.1	0.0	0.0	0.3	0.0	-0.1	0.3	0.7	0.7	0.1	0.1	0.4	0.5	0.6	-0.1
Texas.....	5.7	0.4	0.1	0.0	0.0	0.3	0.0	0.1	0.8	0.9	0.9	0.2	0.2	0.5	0.6	0.5	0.1
Rocky Mountain	5.2	0.2	0.1	0.1	0.0	0.3	0.1	-0.1	0.7	0.8	0.7	0.2	0.3	0.4	0.5	0.7	0.3
Colorado.....	5.7	0.2	0.1	0.0	0.0	0.3	0.0	-0.1	0.7	1.0	0.7	0.2	0.3	0.5	0.5	0.7	0.4
Idaho.....	4.3	0.3	0.1	0.1	0.0	0.4	0.1	-0.1	0.7	0.4	0.6	0.2	0.2	0.3	0.4	0.5	0.2
Montana.....	4.8	0.3	0.2	0.3	0.0	0.4	0.0	0.0	0.5	0.8	0.7	0.2	0.2	0.3	0.3	0.4	0.1
Utah.....	5.3	0.2	0.1	0.3	0.0	0.3	0.1	-0.1	0.8	0.7	0.7	0.2	0.3	0.4	0.4	0.7	0.1
Wyoming.....	4.0	0.2	0.1	0.0	0.0	0.2	0.0	-0.5	0.3	0.8	0.6	0.2	0.2	0.4	0.5	0.8	0.2
Far West	4.5	0.2	0.1	0.1	0.0	0.2	0.1	-0.1	0.4	0.8	0.7	0.2	0.2	0.5	0.4	0.5	0.2
Alaska.....	3.3	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.5	0.6	0.7	0.1	0.3	0.3	0.5	0.1	0.2
California.....	4.4	0.2	0.0	0.1	0.0	0.2	0.1	-0.1	0.4	0.8	0.6	0.2	0.2	0.6	0.4	0.4	0.2
Hawaii.....	4.5	0.1	0.1	0.1	0.0	0.2	0.0	-0.1	0.5	0.7	0.9	0.1	0.1	0.3	0.4	0.8	0.3
Nevada.....	4.1	0.2	0.1	0.1	0.1	0.2	0.1	-0.1	0.8	0.4	0.6	0.1	0.2	0.3	0.5	0.5	0.1
Oregon.....	5.3	0.2	0.2	0.2	0.0	0.3	0.1	-0.1	0.6	0.9	0.8	0.2	0.3	0.4	0.4	0.5	0.4
Washington.....	4.8	0.1	0.1	0.3	0.0	0.2	0.0	0.0	0.5	0.8	0.8	0.2	0.3	0.3	0.5	0.7	0.0

NPISHs Nonprofit institutions serving households

1. The U.S. values reported may differ from the PCE values in the national accounts because PCE by state excludes net expenditures abroad by U.S. residents, which consist of government and private employees' expenditures abroad

less personal remittances in kind to nonresidents.

NOTE: Category contributions were calculated from unrounded data and may not sum up due to rounding. Source: U.S. Bureau of Economic Analysis

owner-occupied housing and financial services with no explicit charge.

The housing imputation approximates the value of housing services provided by owner-occupied housing. This imputation ensures that the treatment of owner-occupied housing is comparable with that of tenant-occupied housing, which is valued by rent paid. Because homeowners consume the service of shelter whether or not they owe a mortgage, this imputation represents the rent that homeowners would pay if they rented the home that they own.

The financial services imputation approximates the value of financial services that households receive either without payment or for a small fee that does not reflect the full value of the service. Examples of these services include no-additional-fee checking accounts, record keeping, and safekeeping of deposits.

Finally, PCE by state includes the net expenditures of NPISHs. Since the services by NPISHs are typically provided to households for less than the cost of the service, these net expenditures represent the value of the services that is unaccounted for by households' out-of-

Table 3. Percent Change from Preceding Period of Personal Consumption Expenditures by State, 2013–2014

[Percent]

	Total PCE by State	Durable goods				Nondurable goods						Services					
		Motor vehicles and parts	Furnishings and durable household equipment	Recreational goods and vehicles	Other durable goods	Off-premises food and beverages	Clothing and footwear	Gasoline and other energy goods	Other nondurable goods	Housing and utilities	Health care	Transportation services	Recreation services	Food services and accommodations	Financial services and insurance	Other services	Final consumption expenditures of NPISHs
United States¹	4.2	5.6	2.8	2.2	1.7	2.4	1.8	-2.9	5.7	4.1	3.9	6.2	4.8	5.7	5.4	5.8	6.1
New England	4.1	5.6	2.2	2.5	1.1	2.8	0.8	-1.4	5.0	3.5	4.0	5.9	4.6	5.2	5.3	6.1	6.7
Connecticut.....	3.7	3.8	2.3	5.3	1.7	3.3	0.4	-1.4	4.4	3.3	3.3	3.6	4.3	4.8	5.5	3.6	10.7
Maine.....	3.5	6.6	1.8	1.3	2.6	3.1	1.4	-1.2	4.8	3.5	3.7	5.6	1.8	5.3	4.2	4.7	4.1
Massachusetts.....	4.5	5.7	2.1	1.3	0.4	2.7	1.2	-1.6	5.2	3.8	4.6	7.5	5.6	5.3	5.2	7.5	6.9
New Hampshire.....	4.2	6.8	2.6	3.7	2.0	1.4	0.3	0.1	6.9	3.5	4.3	6.0	2.7	5.1	5.7	6.3	6.0
Rhode Island.....	3.4	7.6	3.0	1.0	1.3	1.5	0.2	-1.7	3.3	3.1	2.7	4.7	5.2	5.6	6.1	5.8	0.6
Vermont.....	3.9	7.2	1.4	5.7	2.5	4.9	0.2	-2.4	6.0	1.4	3.0	5.6	3.1	5.7	4.5	7.3	5.1
Mideast	4.1	4.4	1.5	1.6	2.9	2.5	2.6	-3.4	5.8	3.9	4.2	5.1	3.8	5.6	4.9	5.4	5.6
Delaware.....	4.3	8.6	1.4	5.0	0.9	1.3	1.0	-4.0	3.2	1.8	7.5	5.6	5.3	4.8	5.9	5.8	5.3
District of Columbia.....	5.1	3.7	5.8	0.3	3.0	6.9	2.1	-4.6	2.0	6.3	7.1	4.3	2.4	5.5	4.2	5.8	2.3
Maryland.....	3.5	3.7	1.1	0.6	1.3	1.7	0.7	-4.6	3.5	4.5	3.3	4.1	2.5	4.2	4.8	5.4	7.5
New Jersey.....	3.6	3.3	1.8	2.4	1.5	2.4	1.9	-3.8	6.4	3.3	3.4	4.0	1.4	4.2	6.0	4.4	6.4
New York.....	5.0	4.4	1.7	2.4	4.4	3.7	4.0	-2.6	7.8	4.0	4.9	6.2	6.4	7.5	4.6	6.6	5.1
Pennsylvania.....	3.1	5.2	1.0	0.1	2.8	1.1	0.9	-3.2	2.9	3.7	3.6	3.8	2.6	3.4	4.6	3.9	5.3
Great Lakes	3.5	6.9	1.3	1.2	1.1	1.1	0.6	-3.4	4.4	4.4	3.1	6.5	4.2	4.0	4.5	5.5	5.1
Illinois.....	3.6	6.2	1.1	0.1	1.4	0.8	0.7	-4.0	3.0	5.0	4.0	7.7	3.5	3.6	3.2	5.8	4.5
Indiana.....	3.1	6.2	0.6	1.3	2.4	0.7	0.4	-5.6	3.5	4.4	1.9	6.1	2.2	3.3	4.9	6.2	12.5
Michigan.....	3.9	9.3	1.2	0.5	0.5	1.6	0.6	-1.9	6.7	3.9	3.0	6.1	6.5	4.6	5.1	6.4	2.2
Ohio.....	3.4	6.5	1.1	0.7	0.7	1.0	0.5	-3.1	3.7	4.1	3.6	6.3	4.7	4.4	5.0	4.3	5.8
Wisconsin.....	3.3	6.4	3.4	5.3	0.5	1.3	1.1	-3.0	5.5	4.5	1.9	4.9	2.9	3.8	4.8	4.5	3.8
Plains	3.6	5.0	2.3	1.3	0.9	1.4	1.4	-2.2	3.9	4.7	2.8	6.5	4.9	4.9	4.3	6.0	5.9
Iowa.....	3.7	4.3	0.3	2.2	1.0	2.9	1.4	-2.3	4.2	4.8	2.9	7.0	3.2	4.0	4.3	6.3	9.1
Kansas.....	3.6	4.4	4.7	1.3	0.4	0.9	0.8	-1.8	5.2	4.2	3.4	4.0	4.6	4.4	2.5	7.2	6.4
Minnesota.....	4.0	5.6	2.4	0.4	0.1	0.2	1.1	-1.4	4.9	4.8	4.1	8.1	6.1	5.2	4.9	6.1	5.8
Missouri.....	2.3	4.4	1.1	1.0	1.6	0.2	0.5	-4.4	1.4	4.4	1.2	3.3	3.7	4.6	4.7	3.1	4.5
Nebraska.....	3.7	5.2	3.3	2.4	0.7	4.3	2.6	-3.6	3.9	5.3	1.6	6.2	4.1	4.9	4.5	7.6	6.6
North Dakota.....	7.4	5.8	4.6	2.8	4.6	6.7	6.4	4.4	9.3	8.0	5.5	18.8	11.5	8.8	5.4	13.5	-1.3
South Dakota.....	3.9	7.9	1.8	3.3	2.5	3.1	2.5	-0.9	3.7	3.8	3.9	4.8	4.1	4.7	2.7	7.2	6.3
Southeast	3.9	5.2	3.8	2.5	1.5	2.1	1.8	-4.3	5.4	4.0	3.6	6.2	4.5	5.2	5.3	5.8	5.5
Alabama.....	2.8	3.2	1.2	0.6	1.1	0.5	0.4	-5.5	5.0	4.0	2.3	2.5	1.8	4.1	5.2	3.9	7.6
Arkansas.....	2.8	5.0	1.9	1.1	1.3	2.7	1.4	-8.3	3.9	2.9	3.4	4.1	3.0	3.2	4.8	3.8	15.6
Florida.....	4.9	7.8	6.3	3.2	2.0	2.9	2.5	-3.1	7.4	2.8	5.3	9.6	5.8	6.9	5.9	6.1	17.1
Georgia.....	4.4	4.7	5.4	2.2	1.8	2.9	2.2	-3.2	6.1	4.5	3.8	8.2	4.3	6.3	5.7	7.2	-0.7
Kentucky.....	2.4	3.4	2.2	0.4	0.2	0.4	1.9	-5.9	1.4	4.0	1.5	3.5	3.1	3.3	5.4	6.5	4.4
Louisiana.....	3.3	3.0	1.1	1.1	1.0	1.0	0.7	-6.3	3.4	4.9	3.2	3.4	6.5	5.7	4.4	5.5	13.3
Mississippi.....	2.9	3.2	1.6	1.9	3.4	0.3	2.8	-7.0	5.1	4.3	1.5	2.0	2.5	3.6	3.6	8.2	7.0
North Carolina.....	4.3	5.4	3.5	6.8	2.0	2.5	1.8	-2.9	7.1	4.9	3.6	6.4	4.0	5.0	5.9	5.6	-4.1
South Carolina.....	3.4	4.0	3.6	3.2	0.9	2.7	2.1	-4.6	4.8	4.4	2.3	6.7	5.4	4.0	5.8	5.8	-1.2
Tennessee.....	3.6	7.5	2.4	1.2	0.4	1.7	1.5	-0.9	4.0	4.5	2.9	4.6	7.6	3.6	4.7	5.6	-0.5
Virginia.....	3.3	3.3	1.7	0.1	1.6	1.3	0.8	-5.5	3.9	5.0	2.9	2.8	2.4	3.8	4.7	5.2	6.7
West Virginia.....	2.1	0.7	0.4	1.1	0.4	0.8	1.9	-4.1	3.6	2.7	4.2	1.9	1.1	2.1	3.7	1.9	-2.4
Southwest	5.2	6.4	4.3	1.1	1.5	4.0	0.5	0.5	7.7	5.3	4.9	7.1	5.3	6.5	6.6	6.6	7.0
Arizona.....	4.5	5.6	4.0	1.9	1.6	3.6	0.8	-2.7	6.3	4.7	3.2	4.8	6.5	6.0	5.8	6.5	9.8
New Mexico.....	3.5	4.4	1.3	0.9	0.2	1.5	0.1	-2.1	5.1	3.4	3.4	1.6	3.0	5.8	6.3	7.0	3.2
Oklahoma.....	3.7	2.2	2.9	1.7	0.8	4.0	0.5	-1.8	3.7	4.7	4.1	4.0	1.9	5.5	5.8	7.4	-7.8
Texas.....	5.7	7.3	4.7	0.9	1.7	4.3	0.4	1.8	8.9	5.6	5.5	8.4	5.8	6.9	6.9	6.5	8.3
Rocky Mountain	5.2	6.6	4.6	3.1	1.8	3.8	2.2	-3.0	7.6	4.5	4.6	7.0	6.4	6.6	6.3	7.5	14.1
Colorado.....	5.7	7.3	5.1	0.6	2.0	3.6	1.7	-4.4	7.7	5.2	4.8	7.0	7.2	7.2	7.2	7.8	20.9
Idaho.....	4.3	7.2	3.1	1.5	2.4	4.3	3.1	-1.8	8.0	2.2	3.9	8.3	5.1	5.1	5.4	5.5	15.4
Montana.....	4.8	6.3	5.2	7.4	2.0	4.5	1.5	0.2	6.3	4.8	4.4	7.2	6.0	5.3	4.5	4.7	5.9
Utah.....	5.3	5.7	4.1	7.0	0.7	4.2	3.3	-1.9	8.0	4.0	5.1	5.7	5.4	7.0	5.5	9.1	5.5
Wyoming.....	4.0	4.0	3.0	1.1	2.6	2.1	1.8	-5.9	4.3	5.1	3.9	8.3	7.7	4.8	6.6	8.8	11.2
Far West	4.5	5.8	2.4	3.7	2.1	2.6	2.8	-3.5	6.3	3.7	4.4	6.6	5.9	7.6	6.0	5.5	6.5
Alaska.....	3.3	0.5	0.9	0.3	0.4	0.5	2.8	-1.3	6.2	3.4	3.7	4.5	9.0	4.4	6.5	0.9	3.6
California.....	4.4	6.1	1.6	2.9	2.1	2.6	3.1	-3.3	6.0	3.7	4.1	7.1	5.7	8.3	5.8	4.9	7.2
Hawaii.....	4.5	5.4	2.7	3.2	2.2	2.0	0.6	-6.7	5.5	3.1	6.5	5.2	4.7	5.7	5.8	8.1	6.7
Nevada.....	4.1	6.0	4.8	3.4	2.1	3.1	2.4	-3.6	7.5	1.9	4.5	3.5	5.2	5.2	6.7	6.4	5.9
Oregon.....	5.3	5.8	5.9	4.2	2.5	3.8	2.3	-3.7	7.5	4.4	5.0	6.7	6.6	6.8	6.7	6.6	16.2
Washington.....	4.8	4.9	3.3	7.2	1.7	2.1	1.5	-4.7	6.7	4.3	5.2	5.3	6.8	5.0	6.7	8.1	-1.4

NPISHs Nonprofit institutions serving households

1. The U.S. values reported may differ from the PCE values in the national accounts because PCE by state excludes net expenditures abroad by U.S. residents, which consist of government and private employees' expenditures abroad less

personal remittances in kind to nonresidents.

Note: Percent change from preceding period was calculated from unrounded data.
Source: U.S. Bureau of Economic Analysis

pocket purchases.³

PCE by state statistics are consistent with BEA's national PCE statistics with respect to concepts and definitions and with BEA's regional income statistics with respect to residency. The latter allows for meaningful comparisons of household income and consumption within a given geography.

3. For more information on PCE concepts and definitions, see "Chapter 5. Personal Consumption Expenditures" in *Concepts and Methods of the U.S. National Income and Product Accounts* (Washington, DC: BEA, February 2014).

Table 4. Per Capita Personal Consumption Expenditures by State for Select Categories, 2014

[Dollars]

	Total personal consumption expenditures	Housing and utilities	Health care	Off-premises food and beverages	Gasoline and other energy goods	All other personal consumption expenditures
United States ¹	37,196	6,720	6,128	2,780	1,258	20,310
New England	46,008	8,300	8,016	3,346	1,426	24,920
Connecticut	45,844	8,948	7,290	3,179	1,313	25,113
Maine	41,148	6,360	7,289	3,736	2,203	21,559
Massachusetts	48,020	8,539	8,857	3,319	1,220	26,085
New Hampshire	46,633	8,397	7,375	3,635	1,940	25,286
Rhode Island	39,774	7,475	7,160	2,775	1,051	21,314
Vermont	44,768	7,307	7,473	4,104	2,183	23,701
Mideast	42,553	7,793	7,098	2,829	1,073	23,761
Delaware	41,701	6,837	8,061	3,243	1,186	22,374
District of Columbia	55,141	9,775	11,358	3,889	952	29,167
Maryland	41,460	9,146	6,539	2,730	1,114	21,930
New Jersey	45,496	9,128	6,459	3,107	1,153	25,649
New York	43,727	7,784	7,385	2,711	862	24,986
Pennsylvania	38,609	6,208	7,071	2,779	1,322	21,229
Great Lakes	36,298	6,038	6,479	2,630	1,289	19,862
Illinois	38,532	6,839	6,246	2,495	1,011	21,940
Indiana	33,758	5,382	6,277	2,571	1,507	18,022
Michigan	36,218	6,035	6,371	2,651	1,339	19,822
Ohio	35,333	5,506	6,796	2,742	1,329	18,959
Wisconsin	36,290	6,072	6,776	2,740	1,493	19,208
Plains	37,218	6,015	6,556	2,718	1,791	20,138
Iowa	35,258	5,445	5,849	2,773	1,906	19,285
Kansas	34,662	5,649	6,058	2,802	1,342	18,810
Minnesota	40,849	7,143	7,210	2,735	1,559	22,202
Missouri	35,052	5,690	6,498	2,591	1,730	18,543
Nebraska	36,857	5,623	6,206	2,660	2,070	20,297
North Dakota	47,739	5,980	7,346	3,202	4,124	27,086
South Dakota	36,899	5,328	7,135	2,747	2,174	19,515
Southeast	33,696	5,908	5,649	2,739	1,255	18,145
Alabama	30,494	4,941	5,224	2,461	1,319	16,550
Arkansas	29,430	4,581	5,107	2,351	1,520	15,871
Florida	36,397	6,803	6,035	2,917	974	19,669
Georgia	32,815	5,727	4,979	2,716	1,261	18,132
Kentucky	31,775	4,930	5,852	2,842	1,396	16,756
Louisiana	32,979	5,254	6,064	2,646	1,423	17,591
Mississippi	29,386	4,675	5,558	2,510	1,443	15,200
North Carolina	32,056	5,429	5,473	2,674	1,288	17,192
South Carolina	32,280	5,101	5,669	2,755	1,584	17,170
Tennessee	32,350	5,477	5,761	2,693	1,225	17,193
Virginia	38,813	8,070	5,519	2,835	1,308	21,081
West Virginia	32,311	4,391	6,825	2,692	1,442	16,961
Southwest	34,145	5,690	5,406	2,668	1,452	18,929
Arizona	33,934	6,470	5,218	2,615	1,188	18,443
New Mexico	33,943	5,476	5,865	2,641	1,636	18,325
Oklahoma	32,266	4,854	5,750	2,289	1,753	17,621
Texas	34,484	5,631	5,368	2,738	1,460	19,286
Rocky Mountain	36,467	6,742	5,237	2,850	1,343	20,296
Colorado	39,216	7,652	5,431	2,955	1,054	22,124
Idaho	32,553	5,682	4,931	2,841	1,523	17,575
Montana	38,518	6,055	6,454	3,312	1,932	20,765
Utah	32,406	5,957	4,498	2,441	1,233	18,277
Wyoming	39,076	6,513	5,898	3,152	3,019	20,494
Far West	38,356	8,132	5,714	2,865	994	20,651
Alaska	46,229	7,591	9,303	3,924	1,451	23,960
California	38,206	8,364	5,524	2,713	982	20,622
Hawaii	41,021	8,882	5,966	3,606	710	21,856
Nevada	34,469	6,912	4,935	2,780	1,080	18,763
Oregon	36,767	7,063	5,994	3,308	1,066	19,337
Washington	40,282	7,853	6,489	3,228	990	21,722

1. The U.S. values reported may differ from the PCE values in the national accounts because PCE by state excludes net expenditures abroad by U.S. residents, which consist of government and private employees' expenditures abroad less personal remittances in kind to nonresidents.

NOTE: Per capita values were calculated from unrounded data.

Source: U.S. Bureau of Economic Analysis

Differences in residency definitions across BEA's regional and national statistics lead to minor differences in coverage between these statistics.⁴ PCE by state excludes the net expenditures abroad by U.S. residents, which consist of government and private employees' expenditures abroad less personal remittances in kind to nonresidents.⁵ As a result of a lack of data, these expenditures cannot be currently allocated to states. However, PCE by state does include the travel expenditures abroad by U.S. residents.

Data and methods

The PCE by state statistics are created with detailed state-level source data in three main steps:

- First, an initial set of annual expenditure estimates is created for 77 detailed categories.⁶
- Second, the initial estimates are scaled across states to match the national PCE category totals and aggregated to the 16 categories for publication.⁷
- Third, the expenditures are adjusted with household survey-based data when evaluation indicates out-of-state spending is present.

The methods used to prepare the annual estimates fall into three main categories, depending on the data that are available for each spending category.

Receipts and expenditures. State-level receipts from the economic census are used for almost all categories of goods and for many categories of services, accounting for approximately 60 percent of PCE by state in a given census year.⁸

The total receipts for industries that provide goods and services to consumers are first adjusted with state-level information on class of customer to remove any

4. For a more detailed discussion on residency in the national and regional economic accounts, see Awuku-Budu and others, "Prototype Personal Consumption Expenditures by State."

5. In 2014, the net expenditures abroad by U.S. residents made up less than 0.05 percent of national total PCE.

6. This is the level of category detail published in table 2.4.5 in the national income and product accounts (NIPAs).

7. The category detail in the PCE by state statistics corresponds to the category detail published in NIPA table 2.3.5.

8. Economic census receipts of nonstore retailers introduce bias and are excluded from the estimation of PCE by state. The resulting distribution of receipts implicitly assumes that the online and mail order sales are geographically distributed in the same pattern as the store-based sales.

Data Availability

The statistics on personal consumption expenditures described in this article are available on BEA's Web site. Data are available for 1997–2014 for each state and the District of Columbia and for 16 expenditure categories. Per capita expenditures are also available. Any inquiries about the data can be addressed to pcebystate@bea.gov.

sales made to businesses and government. When state-level information on class of customer is not available, national information from BEA's input-output tables is used to make a similar adjustment. The receipts are then broken out into purchases of goods and services using the economic census product and service line information.

For the years between and beyond which economic census data are available, the industry receipts are extended by using wage and salary information for the workers employed in the establishments within the state providing the goods and services to consumers from the Bureau of Labor Statistics quarterly census of employment and wages.

For estimates of subcategories within health care, annual expenditure data are used. These estimates use state-level data on health spending by state of residence tabulated by the Center for Medicare and Medicaid Services. Because these statistics are available on an annual basis, wage and salary data are only used to create statistics for years that source data has not yet become available.

Price times quantity. This method is used to generate expenditures on tenant-occupied and owner-occupied housing, utilities, higher education, and foreign travel by U.S. residents.

For tenant-occupied housing, rental housing units and average monthly rent data from the 1-year files of the American Community Survey (ACS) are used to generate estimates for the years 2000 to 2013. For other years, state population growth is used to complete the series. Owner-occupied housing expenditures are imputed using the tenant-occupied rent expenditures and a state-level owner-to-renter expenditure ratio. This ratio is based on directly observed rent expenditure data and imputed owner-equivalent data used to estimate the regional price parities.⁹

9. For more information on these expenditures and the methodology for regional price parities, see Bettina H. Aten and Eric B. Figueroa, "Real Personal Income and Regional Price Parities" (November 2015).

Acknowledgements

The authors who prepared the statistics and led the first official release of the PCE by state statistics would like to gratefully acknowledge the role of Carol A. Robbins in leading the planning, development, and preparation of both the experimental and prototype statistics on PCE by state. The authors would also like to thank their colleagues at BEA and at various academic institutions as well as regional data users for valuable comments received during the development of these statistics.

For utilities, three main data sources are used. These sources consist of state-level household water usage data from the U.S. Geological Survey, regional water price data from the National Association of Clean Water Agencies, and state-level household usage and price data of electricity and natural gas from the Energy Information Agency.

Finally, for estimates of higher education, enrollment and average in-state and out-of-state tuition data by state of residence from the National Center for Education Statistics are used. For estimates of foreign travel by U.S. residents, traveler counts from U.S. Customs and Border Protection (I-94 departure and arrival data) and average expenditures per traveler from the survey of international travelers are used.

Other methods. Various methods are used for the remaining categories, the largest of which is financial services and insurance. For financial services and insurance, disposable personal income by state is used as an indicator to allocate the national expenditures to states. Sources used for other categories include the following: Bureau of Transportation Statistics data on enplanement passenger revenue for air transportation, Amtrak data on ridership for rail transportation, charitable contributions to religious institutions and grant-making from the National Center for Charitable Statistics, and BEA employment data for military clothing and food furnished to employees.

Residency adjustment

The PCE by state statistics that are based on the economic census data need to be adjusted to reflect spending by place of residence because the census data are collected based on point of sale. Travel and tourism and differences in sales tax differentials in neighboring states are examples of factors that explain why consumers make purchases outside of their home state.

The residency adjustments are based on comparisons of the estimates with independent data sources related to state-level household spending. These sources include state population, state disposable personal income, and consumer expenditure survey-based data from the Bureau of Labor Statistics.¹⁰ Residency adjustments are made with category-specific state-level ratios of survey-based household expenditures to the expenditures derived from the economic census receipts.

The estimated expenditures are adjusted when non-resident spending is present. Residency adjustments

10. The consumer expenditure survey-based data are expenditure weights created as part of BEA's regional price parities; for details, see Bettina H. Aten, Eric B. Figueroa, and Troy M. Martin, "Real Personal Income and Regional Price Parities for States and Metropolitan Areas, 2007–2011," *SURVEY 93* (August 2013): 89–103.

are applied mainly to travel- and tourism-related categories, such as transportation services and recreation services, and tourist destination states, such as Hawaii, Nevada, Florida, New York, and the District of Columbia.

Recent improvements

The newly released statistics incorporate the most recent data available and improvements to the methodology that have been made since the release of prototype statistics in 2014. Improvements were made in three major areas:

- The 2012 economic census data were incorporated in the PCE by state statistics that are based on the census. Also, the classification of the service lines from the economic census used in these statistics was further refined, in particular, for the service lines in the transportation and recreation industries.
- New data sources are now used to generate statistics for owner-occupied housing. The use of tenant-occupied expenditures and the owner-to-renter expenditure ratio allows for the value of the services

of owner-occupied housing to be imputed based on the rents charged for similar tenant-occupied housing and no longer relies on rental income data.

- Adjustments were made to the allocation to states of the expenditures in the U.S. by nonresidents—a component of net foreign travel—to better match the treatment of these purchases at the national level. Expenditures in the U.S. by nonresidents are now allocated to states in proportion to the states' consumption of services that are related to travel and tourism. However, the foreign travel by U.S. residents—the other component of net foreign travel—is estimated using information from the survey of international travelers.

Next Steps

Over the next year, planned areas of focus include further methodological improvements that involve using alternative sources of data for spending categories that rely on personal income data. A longer term consideration is the development of measures of real PCE by state that account for differences in prices both across states and over time.