

Results of the 2018 Comprehensive Update of Personal Consumption Expenditures by State

By Steven Zemanek, Jack York, and Ernie Enriquez

On October 4, 2018, the Bureau of Economic Analysis (BEA) released current-dollar statistics on personal consumption expenditures (PCE) by state for 2017. PCE increased in all states and the District of Columbia. PCE grew 4.3 percent nationwide in 2017, ranging from a low of 2.0 percent in North Dakota to a high of 6.9 percent in Idaho (chart 1).

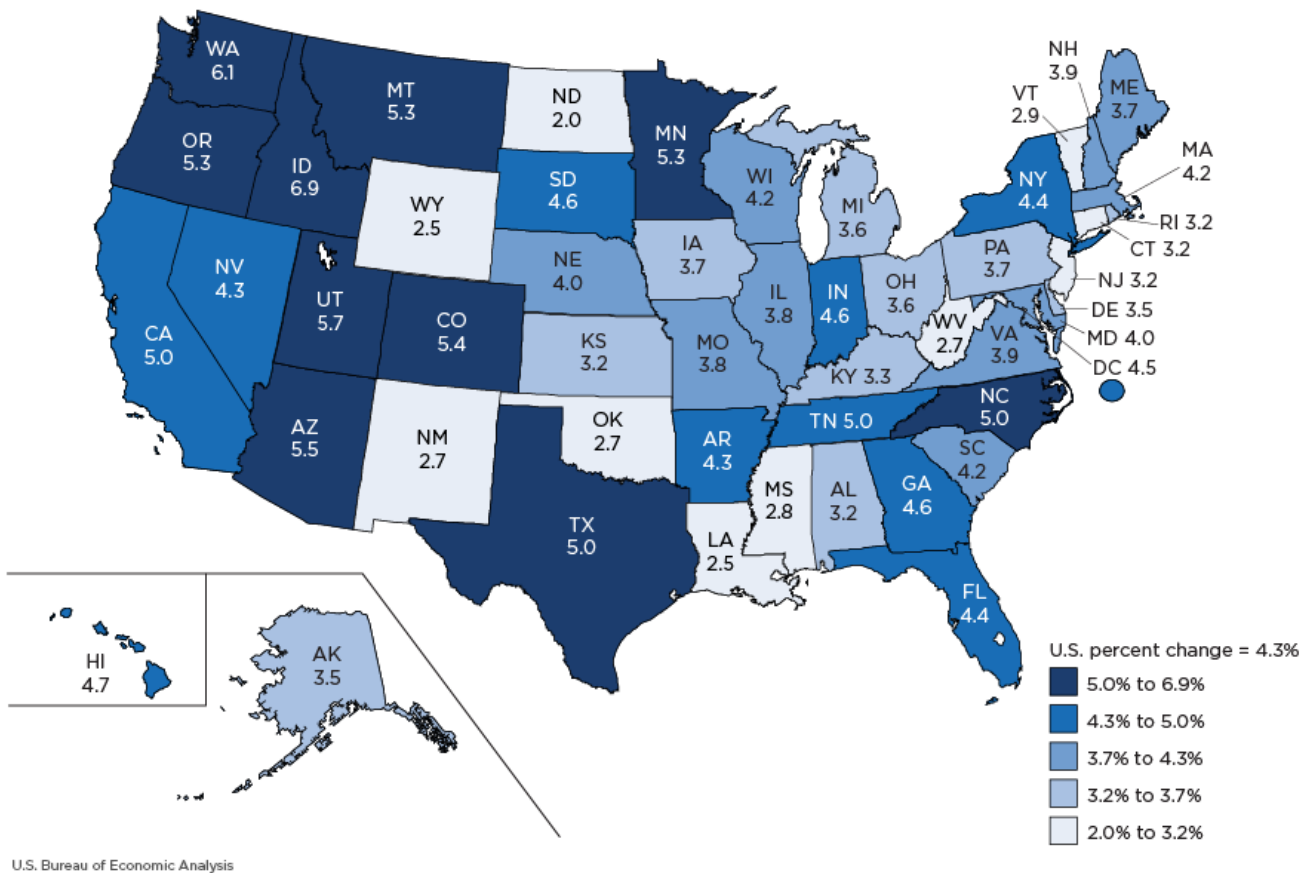
Additional highlights include the following:

- Health care and housing and utilities were the largest contributors to growth in PCE.
- Idaho, Washington, and Utah were the fastest growing states in 2017, with rates of 6.9 percent, 6.1 percent, and 5.7 percent, respectively.
- Expenditures on gasoline and other energy goods increased for the first time since 2012, increasing 11.7 percent.
- The release included the comprehensive benchmark update to the PCE by state statistics for 1997–2016.

PCE by state is a household consumption measure that reflects the value of the goods and services purchased by, or on behalf of, households by state of residence. These statistics on households provide an indication of economic well-being as well as information on consumption patterns across states and over time. For example, the statistics show how households allocate their spending between goods and services, or between necessities and discretionary items, or how consumers adjust their spending to changes in the economy.

PCE by state statistics complement BEA's other regional statistics, including personal income and gross domestic product (GDP), to provide a greater understanding of past and current regional economic conditions.

Chart 1. Percent Change in Total Personal Consumption Expenditures by State, 2016–2017



PCE By State, 2017

Nationwide, PCE increased 4.3 percent in 2017, following an increase of 3.8 percent in 2016 (table 1). PCE growth in most states accelerated as well in 2017. Spending on health care and housing and utilities were the largest contributors to the growth in 2017, as they were in 2016. Health care expenditures grew 4.6 percent, while expenditures on housing and utilities grew 4.0 percent in 2017. Combined, both expenditure categories contributed 1.52 percentage points to overall PCE growth nationwide (table 2).

Table 1. Percent Change from Preceding Period of Personal Consumption Expenditures by State, 1997–2017

| | Percent change | | |
|----------------------------------|------------------------|------------|------------|
| | Average from 1997–2015 | 2016 | 2017 |
| United States¹ | 4.6 | 3.8 | 4.3 |
| New England | 4.3 | 3.1 | 3.8 |
| Connecticut | 4.0 | 2.3 | 3.2 |
| Maine | 4.3 | 2.9 | 3.7 |
| Massachusetts | 4.3 | 3.6 | 4.2 |
| New Hampshire | 4.6 | 3.0 | 3.9 |
| Rhode Island | 4.2 | 2.7 | 3.2 |
| Vermont | 4.5 | 2.3 | 2.9 |
| Mideast | 4.3 | 3.4 | 3.9 |
| Delaware | 4.9 | 2.9 | 3.5 |
| District of Columbia | 4.4 | 3.9 | 4.5 |
| Maryland | 4.6 | 3.6 | 4.0 |
| New Jersey | 4.3 | 3.0 | 3.2 |
| New York | 4.4 | 3.9 | 4.4 |
| Pennsylvania | 4.1 | 2.7 | 3.7 |
| Great Lakes | 3.8 | 3.3 | 3.9 |
| Illinois | 3.9 | 3.2 | 3.8 |
| Indiana | 4.0 | 3.6 | 4.6 |
| Michigan | 3.3 | 3.7 | 3.6 |
| Ohio | 3.8 | 2.7 | 3.6 |
| Wisconsin | 4.2 | 3.5 | 4.2 |
| Plains | 4.3 | 3.4 | 4.1 |
| Iowa | 4.1 | 3.4 | 3.7 |
| Kansas | 4.2 | 2.9 | 3.2 |
| Minnesota | 4.3 | 4.4 | 5.3 |
| Missouri | 3.9 | 2.8 | 3.8 |
| Nebraska | 4.5 | 4.2 | 4.0 |
| North Dakota | 6.1 | -0.8 | 2.0 |
| South Dakota | 5.3 | 4.4 | 4.6 |
| Southeast | 4.7 | 3.8 | 4.2 |
| Alabama | 4.0 | 2.5 | 3.2 |
| Arkansas | 4.6 | 3.9 | 4.3 |
| Florida | 5.1 | 4.1 | 4.4 |
| Georgia | 4.8 | 4.1 | 4.6 |
| Kentucky | 4.2 | 3.7 | 3.3 |
| Louisiana | 4.2 | 2.3 | 2.5 |
| Mississippi | 4.3 | 2.5 | 2.8 |
| North Carolina | 4.8 | 4.3 | 5.0 |
| South Carolina | 4.8 | 4.2 | 4.2 |
| Tennessee | 4.2 | 4.3 | 5.0 |
| Virginia | 5.3 | 3.7 | 3.9 |
| West Virginia | 4.2 | 2.5 | 2.7 |
| Southwest | 5.2 | 3.7 | 4.8 |
| Arizona | 5.1 | 3.6 | 5.5 |
| New Mexico | 4.6 | 2.4 | 2.7 |
| Oklahoma | 4.7 | 2.2 | 2.7 |
| Texas | 5.3 | 4.1 | 5.0 |
| Rocky Mountain | 5.2 | 5.1 | 5.5 |
| Colorado | 5.0 | 5.0 | 5.4 |

| | Percent change | | |
|-----------------|------------------------|------------|------------|
| | Average from 1997-2015 | 2016 | 2017 |
| Idaho | 5.3 | 5.8 | 6.9 |
| Montana | 5.3 | 3.8 | 5.3 |
| Utah | 5.4 | 6.5 | 5.7 |
| Wyoming | 5.4 | 0.6 | 2.5 |
| Far West | 4.9 | 5.0 | 5.1 |
| Alaska | 5.1 | 2.5 | 3.5 |
| California | 4.8 | 5.1 | 5.0 |
| Hawaii | 4.8 | 4.5 | 4.7 |
| Nevada | 6.5 | 4.1 | 4.3 |
| Oregon | 4.5 | 5.0 | 5.3 |
| Washington | 5.2 | 5.2 | 6.1 |

1. The U.S. values reported differ from the personal consumption expenditures (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.

Table 2. Contributions to Percent Change in Total Personal Consumption Expenditures by State, Select Categories, 2017

| Area | Personal consumption expenditures | Housing and utilities | Health care |
|---------------|-----------------------------------|-----------------------|-------------|
| United States | 4.35 | 0.74 | 0.78 |
| Idaho | 6.88 | 0.78 | 1.17 |
| Washington | 6.07 | 1.03 | 1.10 |
| Utah | 5.68 | 0.76 | 0.61 |

Health care services include spending on physician and dental services as well as hospitals and nursing homes, but the category does not include expenditures on pharmaceuticals (prescription drugs) and therapeutic appliances (such as eyeglasses and contact lenses). Expenditures on pharmaceuticals and therapeutic appliances are captured in the other nondurable goods category and the other durable goods category, respectively. Housing and utilities services include spending on rents for tenant-occupied housing, imputed rents for owner-occupied housing, and utilities, like water supply, trash collection, natural gas, and electricity. The health care and housing and utilities categories accounted for about 35 percent of the total expenditures on PCE at the national level (table 3). The health care category was the largest share of expenditures in 27 states, and the housing and utilities category was the largest share in 23 states.

Table 3. Percent of Total Personal Consumption Expenditures by Category, 2017

| PCE category | Percent of total |
|---|------------------|
| Personal consumption expenditures () | 100.00 |
| Goods | |
| Motor vehicles and parts | 3.74 |
| Furnishings and durable household equipment | 2.37 |
| Recreational goods and vehicles | 2.84 |
| Other durable goods | 1.61 |
| Food and beverages purchased for off-premises consumption | 7.25 |
| Clothing and footwear | 2.85 |
| Gasoline and other energy goods | 2.30 |
| Other nondurable goods | 8.24 |
| Services | |
| Housing and utilities | 18.38 |
| Health care | 17.05 |
| Transportation services | 3.28 |
| Recreation services | 4.07 |
| Food services and accommodations | 6.74 |
| Financial services and insurance | 7.96 |
| Other services | 8.31 |
| Final consumption expenditures of nonprofit institutions serving households | 3.03 |

PCE increased the fastest in Idaho, Washington, and Utah in 2017, increasing 6.9 percent, 6.1 percent, and 5.7 percent, respectively. Spending on health care and housing and utilities were also the largest contributors to growth in Idaho, Washington, and Utah. Additionally, growth in population, current-dollar GDP, personal income, and employment in Idaho, Washington, and Utah outpaced the national average in all four statistics in 2017 (table 4).

Table 4. Percent Change From Preceding Period, 2016–2017

| Area | Current dollar GDP growth | Population | Personal income | Employment |
|---------------|---------------------------|------------|-----------------|------------|
| United States | 4.2 | 0.7 | 4.4 | 1.4 |
| Idaho | 4.5 | 2.2 | 5.5 | 2.7 |
| Washington | 6.5 | 1.7 | 6.1 | 2.1 |
| Utah | 4.7 | 1.9 | 5.0 | 2.8 |

Idaho’s economic growth has primarily been driven by growth in manufacturing. In current dollars, manufacturing GDP growth increased 10.1 percent to \$8.4 billion dollars in 2017, while employment in manufacturing increased 3.6 percent to 66.1 thousand jobs in 2017. Computer and electronic product manufacturing and food manufacturing have led the way. The south-central region of Idaho has been dubbed the “Silicon Valley of Agriculture or Food,” as several food manufacturers have located their operations in the region. Computer and electronic product manufacturing has primarily been centered around the Boise, ID, area; companies mainly focused on computer chip manufacturing and computer imaging and printing equipment manufacturing call Boise home. The manufacturing sector in Idaho has led the way in creating attractive, highly skilled, highly paid jobs, making Idaho one of the fastest growing states in terms of population, GDP, personal income, and PCE.

Washington's economic growth has primarily been driven by growth in wholesale trade and retail trade. In current dollars, wholesale trade GDP grew 4.7 percent to \$27.3 billion dollars in 2017, while retail trade GDP grew 18.7 percent to \$44.6 billion dollars in 2017. Eight Fortune 500 companies are based in the Seattle, WA, area. Six of the eight companies are industry leaders in wholesale and retail trade. These competitive and expanding companies have led the way in Washington by attracting to the state new residents in search of well-paying jobs. In 2017, wages and salaries for wholesale trade grew 5.1 percent to \$10.4 billion dollars, while retail trade grew 18.7 percent to \$20.4 billion dollars. A healthy economy and population growth have made PCE growth in Washington the second fastest in the nation.

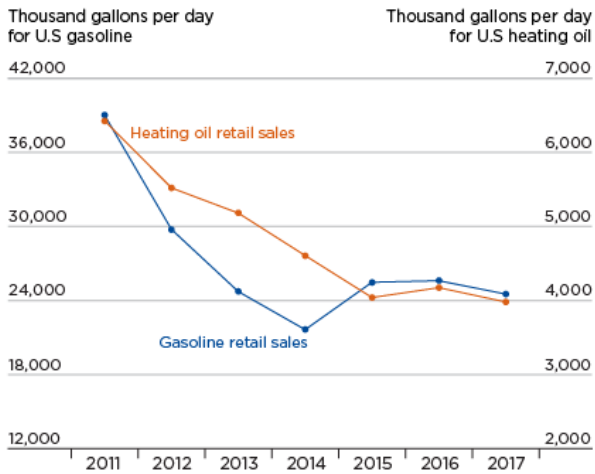
Utah's economic growth has primarily been driven by growth in professional, scientific, and technical services. In current dollars, professional, scientific, and technical services GDP for Utah grew 8.1 percent to \$11.1 billion dollars in 2017. Utah is seeing a flock of small Silicon Valley financial technology (FinTech) companies migrating to the state. Simultaneously, larger traditional financial service firms that have historically existed in Utah have also been taking advantage of the favorable business environment by expanding their scale and operations within the state. The increase of scale and operation from the larger financial service firms and the attraction of FinTech companies have contributed to Utah's above-average population growth rate. Wages and salaries for professional, scientific, and technical services in Utah experienced an increase of 9.3 percent to \$6.9 billion dollars, while employment grew 3.5 percent to a total increase of 147,000 jobs in 2017. Utah's increasing population, paired with the state's favorable business conditions, have made PCE growth in Utah the third fastest in the nation.

Gasoline and Other Energy Goods, 2017

Nationwide, spending on gasoline and other energy goods increased 11.7 percent in 2017—the first increase in spending in this category since 2012. Gasoline and other energy goods includes spending on motor vehicle fuel and lubricants and heating oil.

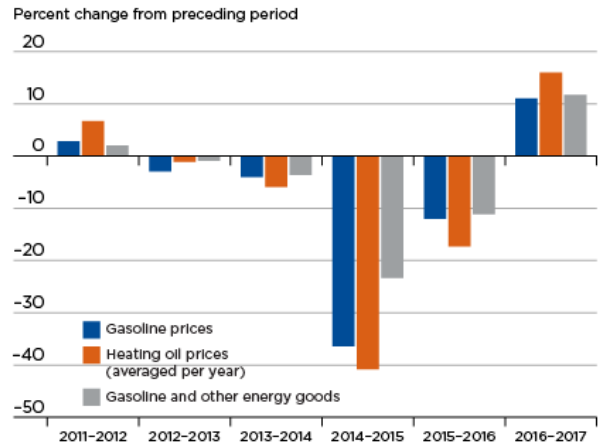
While sales of gasoline and heating oil have been declining (chart 2), expenditures on gasoline and other energy goods increased in 2017, after 4 consecutive years of decline. That increase was driven by the average prices of gasoline and heating oil increasing. According to data from the U.S. Energy Information Administration, prices for gasoline and heating oil increased in 2017 after decreasing the previous four periods (chart 3). The growth in spending across states ranged from 5.4 percent in Oklahoma to 16.2 percent in California (chart 4).

Chart 2. U.S. Total Gasoline and Residual Fuel Oil (Heating Oil) Retail Sales by Refiners



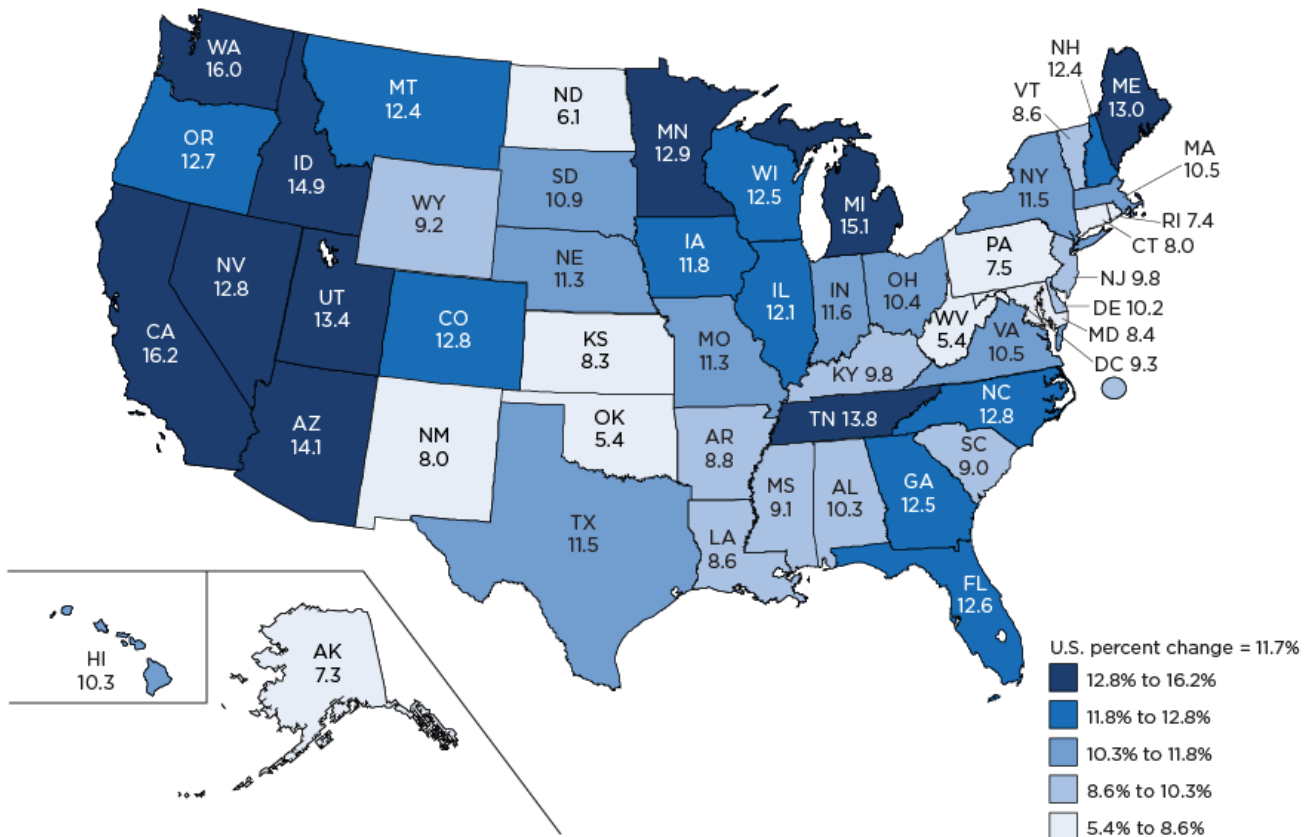
U.S. Energy Information Administration

Chart 3. U.S. Gasoline Prices, Heating Oil Prices, and Gasoline and Other Energy Goods Total Expenditures



U.S. Energy Information Administration
U.S. Bureau of Economic Analysis

Chart 4. Percent Change in Personal Consumption Expenditures by State, Gasoline and Other Energy Goods, 2016-2017



U.S. Bureau of Economic Analysis

Comprehensive Update of PCE by State

The October release of PCE by state included updated statistics for 1997–2016. The updated statistics incorporated the results of the 2018 comprehensive update of the National Income and Product Accounts (NIPAs) and newly available and revised regional source data. Source data that were either revised or newly released include revised data from the Bureau of Labor Statistics Quarterly Census of Employment and Wages for 2001–2016, new 2016 data from the Census Bureau American Community Survey, and revised 1997–2014 data from the U.S. Centers for Medicaid and Medicare Services (CMS) (table 5).

Table 5. Source Data Summary

| Component | Major sources | Updates and revisions |
|--|---|--|
| Durable goods; nondurable goods; some services | Economic Census; Quarterly Census of Employment and Wages () | Revised 2001–2016, new 2017 |
| Housing and utilities | American Community Survey () Owner-to-renter ratios from BEA's regional price parities Energy Research Service data on imputed rental value of farm dwellings (for farm housing) Water supply data from U.S. Geological Survey and National Association of Clean Water Agencies () regional water price index Volume and price data on electricity and natural gas consumption from U.S. Energy Information Administration | New 2016 data New owner-to-renters ratios based on the 2015 panel (2011–2015) Revised 2015 and new 2016 price and volume data for electricity Revised 2015–2016 price and volume data for natural gas Revised service charge index 2012–2016 |
| Transportation services | Economic Census, Amtrak ridership by state (rail transportation) Bureau of Transportation Statistics (): passenger enplanement by state (air transportation) | Revised 2001–2016, new 2017 New data from the National Association of Rail Passengers 2016 Updated 2014–2016 |
| Financial services and insurance | Federal Deposit Insurance Corporation, National Credit Union Administration, Internal Revenue Service, National Association of Insurance Commissioners | Improved methodology using source data for detailed financial services and insurance categories and adjusting the estimates for residence |
| Health care services | Economic Census for some subcomponents, Center for Medicare and Medicaid Services () | Revised data 1997–2014 |

| | |
|--------------|---|
| ACS | American Community Survey |
| BTS | Bureau of Transportation Statistics |
| CMS | Center for Medicare and Medicaid Services |
| NACWA | Definition here |
| QCEW | Definition here |

In addition to the new and revised source data, the comprehensive update of PCE by state reflected methodological changes for the housing and utilities category and for the financial services and insurance category.¹ The methodological modification to the housing and utilities category removed the effect of utility payments included in the source data for contract rents. The improved methodology for the financial services and insurance category introduced new source data from the Federal Deposit Insurance Corporation (FDIC) and the National Association of Insurance Commissioners (NAIC) as well as from other sources. As a proportion of total PCE, these categories comprised approximately 26 percent of PCE nationwide.

On average, current-dollar PCE nationwide was revised downward 0.4 percent for 1997–2014 (table 6). The revisions ranged from a downward 5.1 percent in Alaska to an upward 7.2 percent in the District of Columbia. Current-dollar PCE was revised downward in 40 states and revised upward in 11 states and the District of Columbia.

The revisions were primarily caused by the new and revised source data and the improved methodologies for the housing and utilities category and the financial services and insurance category. In 2016, Nevada and Alaska had the largest absolute revisions with 7.6 percent and –6.7 percent, respectively. The largest contributors to the revisions in both states were the new and revised source data from CMS and the methodological change for the financial services and insurance category. The CMS data included information about health care expenditures as well as expenditures on pharmaceuticals. The new financial services and insurance methodology incorporated data from several financial sources instead of relying entirely on disposable personal income.

Table 6. Revisions to Total Personal Consumption Expenditures by State, 1997–2016

| | Revised PCE (millions of dollars) | | | Revision (millions of dollars) | | | Percent revision | | |
|----------------------------------|-----------------------------------|-------------------|-------------------|--------------------------------|----------------|----------------|-------------------|-------------|-------------|
| | Average 1997–2014 | 2015 | 2016 | Average 1997–2014 | 2015 | 2016 | Average 1997–2014 | 2015 | 2016 |
| United States¹ | 8,733,089 | 12,287,647 | 12,760,282 | -37,280 | -40,181 | -56,104 | -0.4 | -0.3 | -0.4 |
| New England | 514,507 | 699,549 | 721,077 | 933 | 1,006 | -3,498 | 0.2 | 0.1 | -0.5 |
| Connecticut | 129,561 | 172,445 | 176,372 | 1,554 | 3,866 | 2,925 | 1.2 | 2.3 | 1.7 |
| Maine | 40,815 | 54,289 | 55,839 | -809 | -1,223 | -1,442 | -1.9 | -2.2 | -2.5 |
| Massachusetts | 245,505 | 338,224 | 350,556 | 1,405 | -926 | -3,529 | 0.6 | -0.3 | -1.0 |
| New Hampshire | 46,054 | 63,087 | 64,966 | -115 | 144 | -185 | -0.4 | 0.2 | -0.3 |
| Rhode Island | 32,289 | 43,164 | 44,348 | -446 | -253 | -502 | -1.5 | -0.6 | -1.1 |
| Vermont | 20,284 | 28,340 | 28,997 | -655 | -603 | -764 | -3.2 | -2.1 | -2.6 |
| Mideast | 1,572,586 | 2,169,483 | 2,243,348 | 8,501 | 12,411 | 7,697 | 0.6 | 0.6 | 0.3 |
| Delaware | 26,850 | 38,240 | 39,353 | -969 | -1,300 | -1,460 | -3.5 | -3.3 | -3.6 |
| District of Columbia | 26,821 | 38,917 | 40,440 | 1,734 | 1,879 | 1,720 | 7.2 | 5.1 | 4.4 |
| Maryland | 181,664 | 252,958 | 262,066 | -3,621 | -6,234 | -7,157 | -1.9 | -2.4 | -2.7 |
| New Jersey | 313,954 | 422,789 | 435,617 | -350 | -949 | -2,413 | -0.1 | -0.2 | -0.6 |
| New York | 640,344 | 901,711 | 936,872 | 5,338 | 11,043 | 10,704 | 0.9 | 1.2 | 1.2 |
| Pennsylvania | 382,953 | 514,867 | 528,999 | 6,369 | 7,972 | 6,302 | 1.6 | 1.6 | 1.2 |
| Great Lakes | 1,318,719 | 1,750,519 | 1,807,591 | -8,138 | -9,068 | -13,103 | -0.7 | -0.5 | -0.7 |
| Illinois | 385,352 | 512,854 | 529,435 | -808 | -2,860 | -5,315 | -0.2 | -0.6 | -1.0 |
| Indiana | 167,009 | 223,375 | 231,331 | -3,876 | -4,761 | -5,022 | -2.4 | -2.1 | -2.1 |
| Michigan | 282,465 | 363,927 | 377,305 | -3,895 | -11,491 | -13,192 | -1.3 | -3.1 | -3.4 |
| Ohio | 322,902 | 431,733 | 443,301 | 892 | 8,345 | 8,350 | 0.1 | 2.0 | 1.9 |
| Wisconsin | 160,990 | 218,629 | 226,219 | -451 | 1,697 | 2,076 | -0.4 | 0.8 | 0.9 |
| Plains | 579,555 | 801,880 | 829,112 | -6,032 | -7,340 | -7,675 | -1.1 | -0.9 | -0.9 |
| Iowa | 80,278 | 110,453 | 114,223 | -2,019 | -2,107 | -1,776 | -2.5 | -1.9 | -1.5 |
| Kansas | 73,727 | 100,215 | 103,082 | -1,092 | -1,533 | -1,533 | -1.6 | -1.5 | -1.5 |
| Minnesota | 167,499 | 230,061 | 240,189 | -1,186 | -1,791 | -2,300 | -0.7 | -0.8 | -0.9 |
| Missouri | 164,924 | 221,232 | 227,513 | -632 | -961 | -1,135 | -0.4 | -0.4 | -0.5 |
| Nebraska | 50,477 | 71,168 | 74,127 | -284 | -279 | -193 | -0.6 | -0.4 | -0.3 |
| North Dakota | 20,359 | 34,856 | 34,587 | -624 | -1,613 | -1,965 | -3.0 | -4.4 | -5.4 |
| South Dakota | 22,292 | 33,896 | 35,390 | -195 | 945 | 1,226 | -1.2 | 2.9 | 3.6 |
| Southeast | 1,978,924 | 2,811,676 | 2,918,083 | -17,154 | -21,063 | -27,754 | -0.9 | -0.7 | -0.9 |
| Alabama | 111,914 | 149,745 | 153,456 | 179 | 1,327 | 1,059 | 0.0 | 0.9 | 0.7 |
| Arkansas | 65,043 | 91,201 | 94,713 | -670 | 1,713 | 1,729 | -1.2 | 1.9 | 1.9 |
| Florida | 518,540 | 763,109 | 794,066 | 3,873 | 1,956 | -2,471 | 0.8 | 0.3 | -0.3 |
| Georgia | 237,224 | 335,349 | 349,126 | -4,281 | -7,070 | -8,206 | -1.8 | -2.1 | -2.3 |
| Kentucky | 102,984 | 140,416 | 145,612 | -2,395 | -1,931 | -2,085 | -2.3 | -1.4 | -1.4 |
| Louisiana | 111,692 | 154,318 | 157,893 | -951 | -1,710 | -2,132 | -0.9 | -1.1 | -1.3 |
| Mississippi | 63,304 | 85,073 | 87,164 | -2,340 | -2,834 | -3,097 | -3.7 | -3.2 | -3.4 |
| North Carolina | 222,917 | 320,334 | 334,022 | -3,863 | -8,222 | -8,731 | -1.7 | -2.5 | -2.5 |
| South Carolina | 108,291 | 155,878 | 162,424 | -2,687 | -2,031 | -2,612 | -2.5 | -1.3 | -1.6 |
| Tennessee | 155,467 | 214,151 | 223,278 | -2,610 | -4,874 | -4,318 | -1.6 | -2.2 | -1.9 |
| Virginia | 237,877 | 342,143 | 354,902 | -13 | 4,163 | 4,704 | -0.2 | 1.2 | 1.3 |
| West Virginia | 43,672 | 59,957 | 61,428 | -1,396 | -1,552 | -1,594 | -3.2 | -2.5 | -2.5 |
| Southwest | 929,834 | 1,385,443 | 1,437,339 | -10,762 | -24,310 | -24,048 | -1.0 | -1.7 | -1.6 |
| Arizona | 157,552 | 221,711 | 229,756 | -3,729 | -9,556 | -9,924 | -1.7 | -4.1 | -4.1 |
| New Mexico | 49,028 | 68,838 | 70,517 | -2,313 | -3,384 | -3,773 | -4.3 | -4.7 | -5.1 |
| Oklahoma | 86,312 | 123,750 | 126,518 | -2,405 | -3,293 | -2,872 | -2.8 | -2.6 | -2.2 |

| | Revised PCE (millions of dollars) | | | Revision (millions of dollars) | | | Percent revision | | |
|-----------------------|-----------------------------------|------------------|------------------|--------------------------------|----------------|----------------|-------------------|-------------|-------------|
| | Average 1997-2014 | 2015 | 2016 | Average 1997-2014 | 2015 | 2016 | Average 1997-2014 | 2015 | 2016 |
| Texas | 636,941 | 971,144 | 1,010,548 | -2,316 | -8,077 | -7,479 | -0.3 | -0.8 | -0.7 |
| Rocky Mountain | 291,203 | 428,683 | 450,570 | -7,566 | -14,862 | -16,077 | -2.5 | -3.4 | -3.4 |
| Colorado | 148,757 | 214,032 | 224,732 | -3,507 | -10,202 | -11,564 | -2.2 | -4.5 | -4.9 |
| Idaho | 35,715 | 53,641 | 56,771 | -1,058 | -257 | 129 | -2.9 | -0.5 | 0.2 |
| Montana | 26,377 | 39,333 | 40,840 | -1,078 | -1,926 | -2,116 | -3.9 | -4.7 | -4.9 |
| Utah | 64,595 | 98,616 | 105,035 | -1,593 | -2,256 | -2,107 | -2.5 | -2.2 | -2.0 |
| Wyoming | 15,760 | 23,060 | 23,192 | -330 | -221 | -419 | -2.3 | -0.9 | -1.8 |
| Far West | 1,547,760 | 2,240,415 | 2,353,163 | 2,937 | 23,046 | 28,356 | 0.2 | 1.0 | 1.2 |
| Alaska | 23,047 | 33,504 | 34,332 | -1,317 | -2,422 | -2,426 | -5.1 | -6.7 | -6.6 |
| California | 1,105,085 | 1,589,353 | 1,671,196 | 5,910 | 24,307 | 29,472 | 0.6 | 1.6 | 1.8 |
| Hawaii | 40,290 | 60,117 | 62,807 | -1,115 | -1,200 | -1,653 | -2.7 | -2.0 | -2.6 |
| Nevada | 72,299 | 109,976 | 114,473 | 3,364 | 8,465 | 8,109 | 4.2 | 8.3 | 7.6 |
| Oregon | 106,762 | 152,837 | 160,525 | -895 | -2,598 | -2,159 | -0.7 | -1.7 | -1.3 |
| Washington | 200,278 | 294,627 | 309,831 | -3,011 | -3,508 | -2,986 | -1.5 | -1.2 | -1.0 |

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Acknowledgments

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Data and Methodology

The PCE by state statistics are produced with detailed state-level source data in three general steps. First, an initial set of annual expenditure estimates is generated for detailed expenditure categories.¹ Then, the national PCE categories are allocated to the states using the initial expenditure estimates and aggregated to the publication level.² Finally, the expenditures are adjusted for residency when evaluation indicates out-of-state spending exists.

Three primary methods are used to create the initial detailed PCE by state estimates: receipts and expenditures, price times quantity, and other methods. The method used depends on the data that are available for each spending category.

The receipts and expenditures method uses receipts from the Economic Census to create estimates for almost all categories of goods and many categories of services. The receipts are adjusted using class-of-customer data by state and other data sources to remove nonhousehold purchases.

For several categories, which include housing and utilities, higher education, and foreign travel by U.S. residents, price and quantity data are used to create the estimates.

For the remaining PCE categories, various source data and methods are used to produce the statistics. Financial services and insurance is the largest of the remaining categories, and it uses source data from the FDIC, the National Credit Union Administration, Statistics of Income from the Internal Revenue Service, and the NAIC.³

The final step in the PCE by state process adjusts the statistics for residency. The statistics 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, tourism, and differences in sales taxes in neighboring states are examples of why consumers make purchases outside of their home state. For instance, many New York City residents often defer gasoline purchases to coincide with trips to New Jersey because New Jersey has considerably lower taxes on gasoline.

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.⁴ 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 nonresident spending is present. Residency adjustments are applied mainly to travel-related and tourism-related categories and states. Examples of these are transportation services, recreation services, and tourist destination states, such as Hawaii, Nevada, Florida, New York, and the District of Columbia.

1. This is the level of category detail published in table 2.4.5 in the NIPAs.

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

3. For more on the data and methodology used, see Christian Awuku-Budu, Mahsa Gholizadeh, Ledia Guci, Joshua S. Ingber, Christopher A. Lucas, and Levi J. Weible, "[Personal Consumption Expenditures by State: New Statistics for 2015 and Revised Statistics for 2008–2014](#)," *Survey* 96 (November 2016).

4. 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).

Personal Consumption Expenditures by State

Concepts and definitions

PCE by state is the regional counterpart of national PCE, which measures the value of the goods and services purchased by, and on behalf of, households. PCE by state measures household consumption based on households' state of residence in the 50 states and the District of Columbia. Examples of purchases made on behalf of households include health care services paid for by Medicare and Medicaid and education services provided by nonprofit institutions or the government.

In addition to out-of-pocket household purchases and purchases made by third parties 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 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 regardless of having 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, which 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 nonprofit institutions serving households (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-pocket purchases.¹

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.

There are minor differences in coverage between the regional and national PCE statistics, which stem from differences in residency definitions across these statistics.² 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.³ These expenditures are included in national PCE, but they cannot be attributed to a particular state. However, PCE by state does include the travel expenditures abroad by U.S. residents.

Residency adjustments

Residency definitions are important to the regional economic accounts to align measures of income and consumption within a given geography. PCE by state statistics use the residency concept of regional income statistics so state expenditures correspond to the same population used to measure state personal income.

For regional income statistics, a resident is considered a participant in a regional economy regardless of national allegiance or duration of residence. Regional income statistics exclude the income earned by U.S. residents living abroad but include the income earned by foreign nationals working in the United States. PCE by state also excludes net expenditures of U.S. residents abroad. However, PCE by state includes the travel expenditures abroad by U.S. residents.

Residency adjustments are made to both regional income and PCE statistics; however, these adjustments serve different purposes. For regional income statistics, a residency adjustment is made to reallocate income earned in places of work other than the recipients' place of residence. For the PCE by state statistics, a residency adjustment is made to reallocate expenditures made in states other than the households' state of residence.

1. For more information, see "[Chapter 5. Personal Consumption Expenditures](#)" in *NIPA Handbook: Concepts and Methods of the U.S. National Income and Product Accounts* (Washington, DC: BEA, February 2014).
2. For a more detailed discussion on residency in the national and regional economic accounts, see Christian Awuku-Budu, Ledia Gucci, Christopher A. Lucas, and Charles Ian Mead, "[Prototype Personal Consumption Expenditures by State for 1997–2012](#)," *Survey* 94 (September 2014).
3. In 2017, the net expenditures abroad by U.S. residents were less than 0.05 percent of national total PCE.

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1. See David G. Lenze, "[Regional Quarterly Report: Preview of the 2018 Comprehensive Update of the Regional Economic Accounts](#)," *Survey of Current Business* 98 (August 2018).



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