

# Prototype Personal Consumption Expenditures by State for 1997–2012

By Christian Awuku-Budu, Ledia Guci, Christopher A. Lucas, and Charles Ian Mead

THE MOST RECENT recession and subsequent recovery have highlighted the need for more detailed information on economic conditions across regions. While the Bureau of Economic Analysis' (BEA) statistics on state and local area personal income and gross domestic product (GDP) can be used to describe many regional economic developments, these statistics do not address how consumers, whose spending makes up about two-thirds of national GDP, adjust their spending in light of changes in the local economy.

With the long-term goal of providing regional information on consumer spending on an annual basis, BEA issued its first release of prototype statistics on personal consumption expenditures (PCE) by state on August 7, 2014. These annual statistics cover 1997–2012 and include information on 16 categories of spending. These current-dollar statistics reflect regional variations in both prices and quantities. Because the PCE-by-state statistics reflect changes in both population and per capita spending, statistics on per capita PCE were also included in the release.

The new statistics can be used with other BEA statistics to understand recent economic developments at the state level. They can also be used to investigate longer-term trends and how consumers of a state respond to changes in state-level economic activity. One characteristic of the most recent recession is that some states—such as Nevada, Arizona, Indiana, and Ohio—were hit particularly hard. The new statistics

show, however, that consumers in these states adjusted their spending differently.

These statistics have many other potential uses; for example, they can be used for policy analysis related to proposed state-level sales tax reforms. They can also be used by businesses to target regional markets, by local officials to gauge economic health in the region, and by researchers to improve regional models used to estimate the impacts of important events in a local economy.

This article presents BEA's most recent prototype PCE-by-state statistics for 1997–2012. These statistics reflect the use of more recent source data and incorporate methodological improvements made over the past year.

## PCE and Other Economic Statistics

PCE by state measures spending on goods and services purchased by households and nonprofit institutions serving households (NPISHs) by state of residence for the 50 states and the District of Columbia.

PCE by state is a broad measure of household spending that includes more than the out-of-pocket purchases made by households. PCE by state includes third-party expenditures on behalf of households, such as Medicare payments and employer contributions to health care. It also includes the value of some consumption items for which there are no market transactions, such as owner-occupied housing services and food grown and consumed on farms. Finally, it includes the net costs incurred by NPISHs; this spending represents services received by households not already accounted for in the measurement of PCE.

PCE by state is based on the same residency concepts as state personal income, so these statistics complement one another.<sup>1</sup> However, they do not always

*The authors gratefully acknowledge the role of Carol A. Robbins in leading the planning, development, and preparation of both the experimental and the prototype PCE-by-state statistics. The authors would also like to thank their colleagues at BEA and regional data users for valuable comments received during the development of these statistics.*

1. State personal income measures income received by individuals residing in a state from all sources, including wages and salaries, interest and dividend income, and transfer payments.

move together, because households may spend income earned in prior periods that had been put into savings (see the box “Personal Consumption Expenditures, Disposable Personal Income, and Personal Saving” on page 10 for the additional measures that would be needed to calculate state-level personal saving). Households may also spend money that has been earned through the appreciation of assets purchased in prior periods. Finally, households may borrow against future earnings to make large purchases in a given year.

PCE-by-state statistics use the same category definitions as those used in the national income and product accounts (NIPAs). However, there are differences in definitions of residency, which lead to some differences between the state and national statistics. PCE-by-state statistics are designed to correspond to the same population used to measure state disposable personal income, thus they exclude the spending of U.S. personnel stationed abroad. As a result, aggregate PCE by state is lower than the national total spending by the amount of net expenditures of U.S. residents abroad, which is

reported in the NIPAs in “other nondurable goods” (see the box “Residency in the National and Regional Economic Accounts” on page 4).

### Selected Results

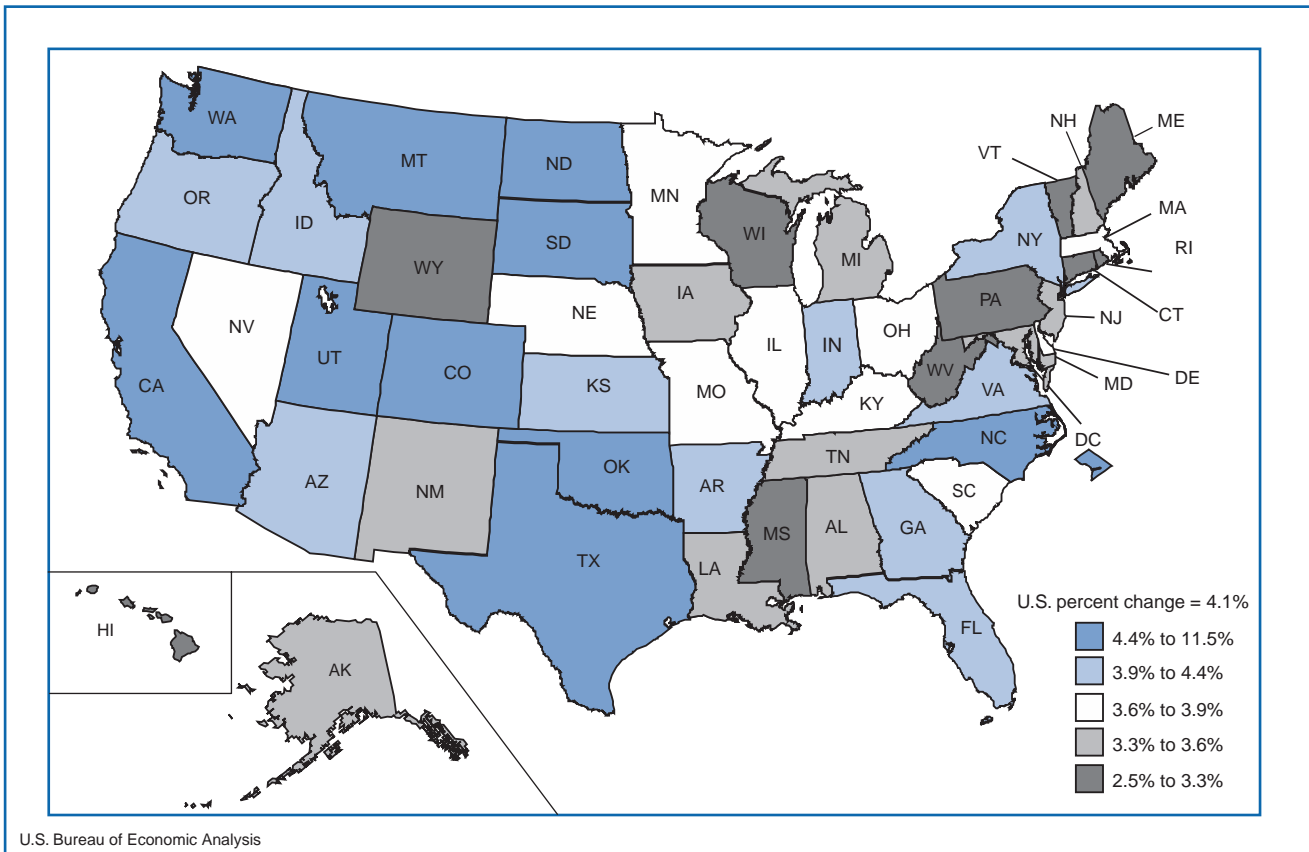
This section highlights the latest snapshot of consumer spending across states for 2012. It also presents trends that can be seen in the data over 2002–2012 to illustrate the richness of the new statistics.

#### Growth in total PCE by state, 2012

In 2012, PCE grew the fastest in North Dakota, Texas, the District of Columbia, and Utah. PCE rose at the slowest pace in Mississippi. PCE growth in Arizona was closest to the average of all states (4.1 percent).

While PCE grew across all states in 2012, it generally grew at a slower rate than in 2011. For example, North Dakota grew 11.5 percent in 2012 after growing 11.6 percent in 2011 (chart 1 and table 1). Exceptions to this slowdown in growth are Arizona, the District of Columbia, North Carolina, Nevada, and Utah.

**Chart 1. Percent Change in Total Personal Consumption Expenditures by State, 2011–2012**



**Table 1. Percent Change From Preceding Period in Total Personal Consumption Expenditures by State<sup>1</sup>**

	2011	2012
<b>United States<sup>2</sup></b> .....	<b>5.0</b>	<b>4.1</b>
<b>New England</b> .....	<b>4.5</b>	<b>3.4</b>
Connecticut .....	3.5	3.2
Maine .....	4.6	2.8
Massachusetts .....	5.1	3.8
New Hampshire .....	4.9	3.5
Rhode Island .....	3.0	2.5
Vermont .....	5.1	3.0
<b>Mideast</b> .....	<b>4.6</b>	<b>3.5</b>
Delaware .....	4.7	3.7
District of Columbia .....	4.4	5.8
Maryland .....	4.5	3.5
New Jersey .....	3.6	3.3
New York .....	5.1	3.9
Pennsylvania .....	4.8	2.9
<b>Great Lakes</b> .....	<b>4.5</b>	<b>3.6</b>
Illinois .....	4.1	3.8
Indiana .....	5.0	4.2
Michigan .....	4.6	3.3
Ohio .....	4.7	3.7
Wisconsin .....	4.5	2.8
<b>Plains</b> .....	<b>5.6</b>	<b>4.1</b>
Iowa .....	6.1	3.4
Kansas .....	5.7	4.3
Minnesota .....	5.4	3.8
Missouri .....	4.5	3.8
Nebraska .....	5.9	3.7
North Dakota .....	11.6	11.5
South Dakota .....	6.8	4.8
<b>Southeast</b> .....	<b>4.7</b>	<b>4.0</b>
Alabama .....	4.7	3.3
Arkansas .....	5.6	3.9
Florida .....	4.5	4.3
Georgia .....	4.9	4.2
Kentucky .....	5.0	3.7
Louisiana .....	4.4	3.5
Mississippi .....	3.6	2.5
North Carolina .....	4.7	4.9
South Carolina .....	4.7	3.6
Tennessee .....	5.4	3.5
Virginia .....	4.4	4.0
West Virginia .....	4.7	3.2
<b>Southwest</b> .....	<b>6.8</b>	<b>5.3</b>
Arizona .....	3.6	4.1
New Mexico .....	5.7	3.3
Oklahoma .....	6.8	5.1
Texas .....	7.7	5.8
<b>Rocky Mountain</b> .....	<b>5.5</b>	<b>4.5</b>
Colorado .....	6.0	4.4
Idaho .....	4.4	3.9
Montana .....	6.3	4.4
Utah .....	4.4	5.5
Wyoming .....	6.1	3.0
<b>Far West</b> .....	<b>4.8</b>	<b>4.6</b>
Alaska .....	7.2	3.6
California .....	4.9	4.7
Hawaii .....	3.6	2.8
Nevada .....	2.0	3.8
Oregon .....	5.3	3.9
Washington .....	5.3	4.7

1. Percent change from preceding period was calculated from unrounded data.

2. The personal consumption expenditures (PCE) values used to compute the percent change in PCE for the United States equal the sum of the state estimates. This sum differs from the estimates of PCE in the national income and product accounts (NIPAs) because PCE by state excludes net expenditures abroad by U.S. residents.

NOTE: Estimates are based on the NIPA PCE statistics before the annual revision released on July 30, 2014.

### Per capita PCE by state, 2012

On a per capita basis, the prototype estimates show that the level of total PCE in 2012 ranged from \$59,423 in the District of Columbia to \$27,406 in Mississippi (chart 2 and table 2). Per capita PCE was relatively high in Connecticut, Massachusetts, and North Dakota. Across all states, per capita PCE was \$35,498. States with per capita PCE closest to this average value were Nebraska and Oregon.

The prototype statistics for detailed categories of PCE also show the variation in consumer spending across states. For example, in 2012, per capita PCE for housing and utilities was highest in the District of Columbia (\$11,985), Hawaii (\$10,002), Connecticut (\$9,524), and Maryland (\$9,000). It was lowest in Mississippi (\$4,294), Texas (\$4,391), Arkansas (\$4,500), and West Virginia (\$4,536).

In 2012, per capita PCE for health care was highest in the District of Columbia (\$10,491), Massachusetts (\$8,816), Alaska (\$8,173), and North Dakota (\$7,785). It was lowest in Nevada (\$4,253), Utah (\$4,311), Idaho (\$4,695), and Georgia (\$4,737).

Per capita PCE for food and beverages purchased for off-premises consumption was highest in Alaska (\$3,852), Vermont (\$3,622), New Hampshire (\$3,616), and Hawaii (\$3,615). It was lowest in Oklahoma (\$2,179), Arkansas (\$2,243), Utah (\$2,429), and Alabama (\$2,445).

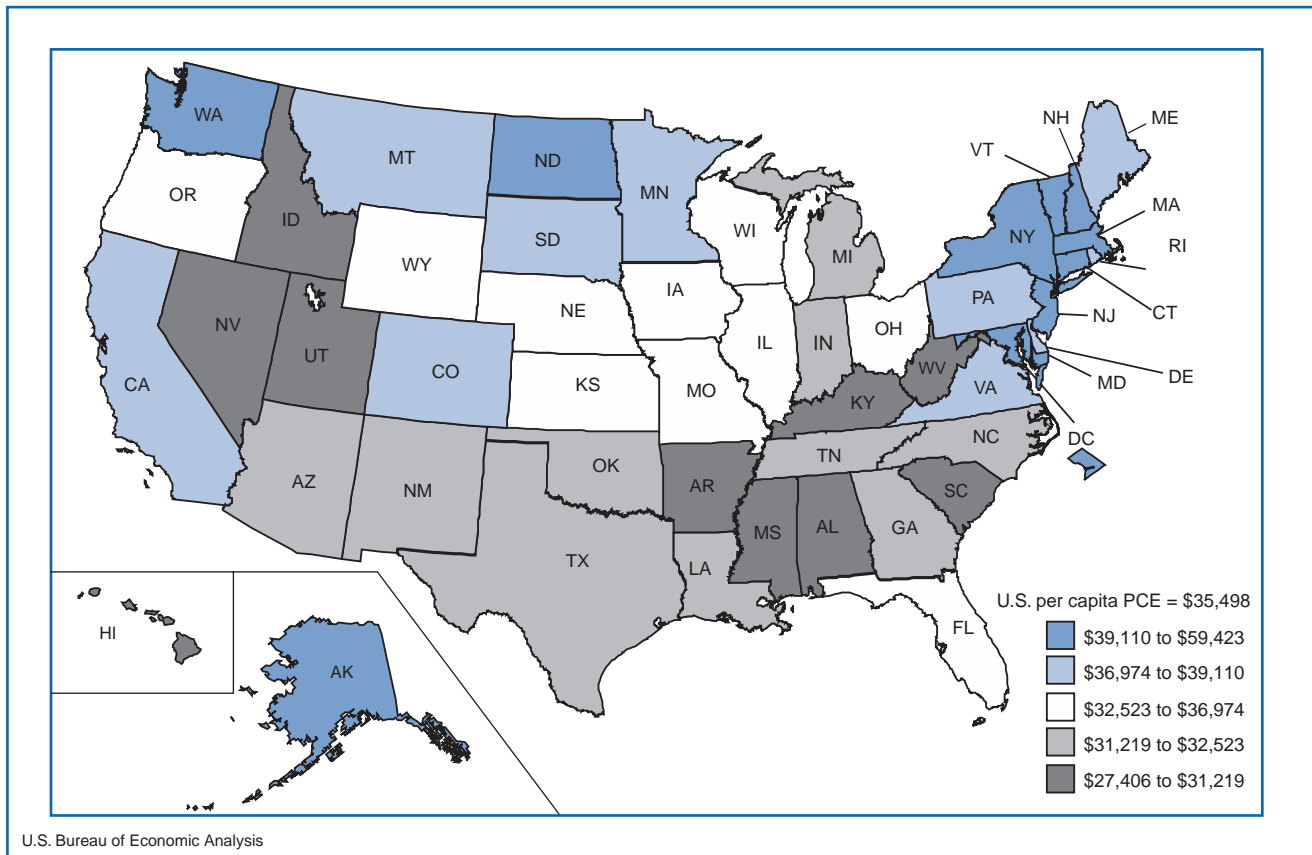
### Growth in total PCE by state, 2002–2012

The prototype statistics show that the states where total PCE grew the most over 2002–2012 were concentrated in the Plains, Rocky Mountain, and Southwest

#### Data Availability

The prototype statistics on personal consumption expenditures described in this article are available on BEA's regional accounts Web site. Data are available for 1997 to 2012 for each state and the District of Columbia and for 16 expenditure categories.

To access these data, select the "Regional" tab at the top of the home page, click on the link "Download complete data sets of the subjects listed above (ZIP/CSV)" under the "Data" section, and select "[Personal Consumption Expenditures \(PCE\) by State](#)" in the download page.

**Chart 2. Per Capita Total Personal Consumption Expenditures by State, 2012**

### Residency in the National and Regional Economic Accounts

Residency definitions account for key differences in the national and regional economic accounts and thus allow for meaningful comparisons of income, consumption, and saving within a geographic region.

At the national level, personal consumption expenditures (PCE) measures spending on activities that are attributable to U.S. residents, even when that activity takes place outside the United States. Residents are persons physically located in the United States who have resided, or expect to reside, in the country for 1 year or more. National PCE also includes expenditures of U.S. government civilian and military personnel stationed abroad regardless of the length of their assignment and of U.S. residents who are traveling or working abroad for 1 year or less.<sup>1</sup>

For personal income by state, a person is considered a

1. Bureau of Economic Analysis (BEA), "Chapter 5: Personal Consumption Expenditures," in *Concepts and Methods of the U.S. National Income and Product Accounts* (Washington, DC: BEA, February 2014).

resident of a state 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. A residence adjustment is made to reallocate income earned in places of work other than the recipients' place of residence.<sup>2</sup>

The prototype PCE-by-state statistics use the same residency concept as that used in the state personal income statistics, so state expenditures correspond to the same population used to measure state disposable personal income. As a result, PCE by state excludes net expenditures of U.S. residents abroad. PCE by state, however, does include the travel expenditures abroad by U.S. residents. A residency adjustment is made to reallocate expenditures made in states other than the households' state of residence.

2. BEA, *State Personal Income and Employment Methodology* (Washington, DC: BEA, October 2013).

Table 2. Per Capita Personal Consumption Expenditures (PCE) by State for Selected Categories, 2012<sup>1</sup>

	Total PCE	Food and beverages for off-premises consumption	Gasoline and other energy goods	Housing and utilities	Health care	All other PCE
<b>United States<sup>2</sup></b> .....	<b>35,498</b>	<b>2,750</b>	<b>1,328</b>	<b>6,415</b>	<b>5,886</b>	<b>19,118</b>
<b>New England</b> .....	<b>44,549</b>	<b>3,299</b>	<b>1,529</b>	<b>8,178</b>	<b>7,785</b>	<b>23,759</b>
Connecticut .....	45,800	3,170	1,401	9,524	7,096	24,609
Maine .....	38,677	3,526	2,373	5,803	6,936	20,038
Massachusetts .....	47,308	3,307	1,346	8,494	8,816	25,345
New Hampshire .....	41,621	3,616	1,922	6,817	6,421	22,845
Rhode Island .....	36,974	2,804	1,122	7,421	6,700	18,927
Vermont .....	39,443	3,622	2,262	6,293	7,293	19,973
<b>Mideast</b> .....	<b>41,031</b>	<b>2,818</b>	<b>1,174</b>	<b>7,707</b>	<b>6,910</b>	<b>22,422</b>
Delaware .....	38,895	3,348	1,201	7,508	7,327	19,512
District of Columbia .....	59,423	3,599	1,579	11,985	10,491	31,769
Maryland .....	40,980	2,696	1,309	9,000	6,464	21,511
New Jersey .....	42,654	3,076	1,254	8,861	6,141	23,322
New York .....	42,043	2,664	919	7,751	7,303	23,406
Pennsylvania .....	37,618	2,853	1,426	6,044	6,841	20,455
<b>Great Lakes</b> .....	<b>33,967</b>	<b>2,597</b>	<b>1,339</b>	<b>5,425</b>	<b>6,265</b>	<b>18,340</b>
Illinois .....	36,292	2,641	1,160	6,143	6,028	20,320
Indiana .....	32,418	2,590	1,640	4,821	5,967	17,400
Michigan .....	32,496	2,566	1,338	4,819	6,156	17,616
Ohio .....	33,138	2,539	1,229	5,204	6,533	17,634
Wisconsin .....	34,721	2,680	1,624	5,989	6,789	17,639
<b>Plains</b> .....	<b>35,352</b>	<b>2,781</b>	<b>1,870</b>	<b>5,452</b>	<b>6,414</b>	<b>18,836</b>
Iowa .....	33,585	2,814	2,082	5,281	6,012	17,397
Kansas .....	32,523	3,075	1,294	5,180	5,809	17,165
Minnesota .....	37,904	2,533	1,656	6,101	6,926	20,688
Missouri .....	34,142	2,795	1,815	5,201	6,272	18,059
Nebraska .....	35,176	2,776	2,146	5,274	6,168	18,812
North Dakota .....	44,029	3,131	3,916	5,463	7,785	23,735
South Dakota .....	37,036	2,859	2,521	5,030	7,098	19,528
<b>Southeast</b> .....	<b>32,258</b>	<b>2,691</b>	<b>1,313</b>	<b>5,645</b>	<b>5,321</b>	<b>17,287</b>
Alabama .....	29,537	2,445	1,332	5,216	4,932	15,612
Arkansas .....	28,366	2,243	1,669	4,500	4,828	15,127
Florida .....	33,755	2,903	1,020	5,991	5,615	18,226
Georgia .....	31,219	2,603	1,378	5,336	4,737	17,165
Kentucky .....	30,621	2,813	1,535	4,794	5,714	15,765
Louisiana .....	31,995	2,784	1,613	4,794	5,445	17,359
Mississippi .....	27,406	2,543	1,483	4,294	5,324	13,761
North Carolina .....	31,891	2,645	1,276	5,721	5,185	17,065
South Carolina .....	30,728	2,486	1,551	5,427	5,435	15,830
Tennessee .....	31,417	2,538	1,187	5,407	5,414	16,871
Virginia .....	38,134	2,855	1,379	7,775	5,248	20,876
West Virginia .....	30,642	2,600	1,602	4,536	6,366	15,540
<b>Southwest</b> .....	<b>32,233</b>	<b>2,616</b>	<b>1,460</b>	<b>4,806</b>	<b>5,000</b>	<b>18,350</b>
Arizona .....	32,500	2,584	1,139	6,124	5,085	17,569
New Mexico .....	32,446	2,758	1,763	6,021	5,107	16,797
Oklahoma .....	31,391	2,179	1,918	4,706	5,199	17,389
Texas .....	32,271	2,677	1,450	4,391	4,941	18,812
<b>Rocky Mountain</b> .....	<b>34,560</b>	<b>2,757</b>	<b>1,531</b>	<b>6,383</b>	<b>5,067</b>	<b>18,822</b>
Colorado .....	37,564	2,831	1,189	6,970	5,345	21,228
Idaho .....	30,190	2,604	1,855	5,735	4,695	15,301
Montana .....	37,098	3,317	2,192	6,444	6,067	19,078
Utah .....	30,181	2,429	1,346	5,692	4,311	16,403
Wyoming .....	36,891	3,166	3,475	6,215	5,591	18,444
<b>Far West</b> .....	<b>36,779</b>	<b>2,843</b>	<b>1,081</b>	<b>8,306</b>	<b>5,557</b>	<b>18,991</b>
Alaska .....	41,711	3,852	1,462	6,413	8,173	21,810
California .....	37,134	2,657	1,039	8,650	5,485	19,304
Hawaii .....	30,160	3,615	882	10,002	5,450	10,211
Nevada .....	29,514	2,800	1,128	6,368	4,253	14,965
Oregon .....	35,762	3,392	1,314	7,188	5,758	18,111
Washington .....	39,110	3,310	1,166	7,677	6,108	20,849

1. Per capita values were calculated from unrounded data.

2. The PCE values used to compute the per capita values for the United States equal the sum of the state estimates. This sum differs from the estimates of PCE in the national income and product

accounts (NIPAs) because PCE by state excludes net expenditures abroad by U.S. residents.

NOTE: Estimates are based on the NIPA PCE statistics before the annual revision released on July 30, 2014.

regions (chart 3). However, the specific timing of the growth over the entire period varies by state. For the states that were the most affected by the housing boom and bust—such as Arizona, Florida, and Nevada—most of the growth occurred before 2008 (table 3). For states affected by the boom in oil and gas extraction activity, mainly North Dakota, most of this growth occurred after 2008.

The states that grew the least over the entire period—such as Indiana, Michigan, and Ohio—are concentrated in the Great Lakes region. Even though this region was hit hard by declines in manufacturing activity during the most recent national economic downturn, PCE growth in more recent years has been much more consistent with growth at the national level.

**Per capita PCE by state for selected categories, 2002–2012**

The detail available in the prototype release makes it possible to also see how consumers adjust spending across different categories over time. For example, the new prototype statistics show that changes in con-

sumer spending differed considerably across states that were severely affected by the most recent economic downturn.

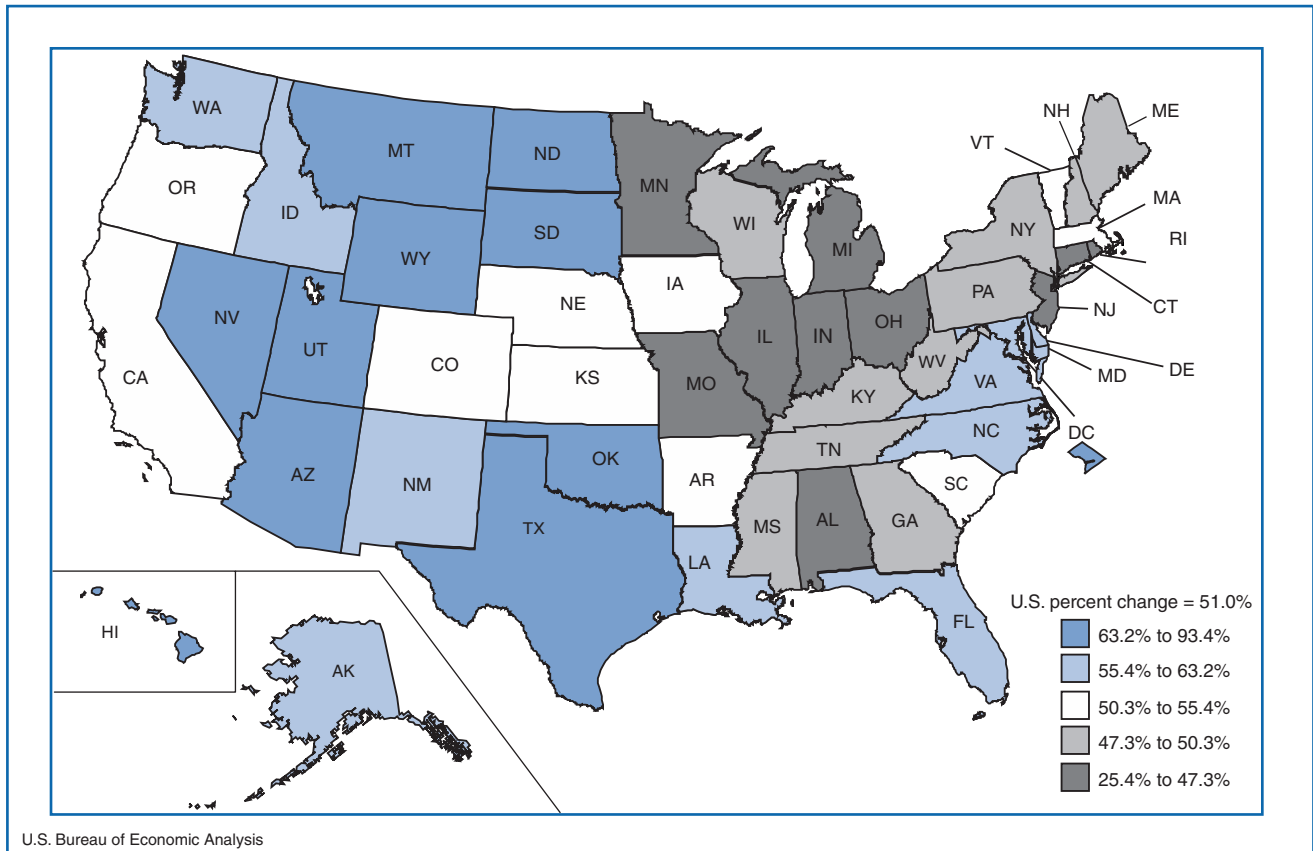
For two states hit hard by the housing boom and bust, Arizona and Nevada, spending on motor vehicles

**Table 3. Compound Annual Growth in Total Personal Consumption Expenditures by State for Selected States**

	2002–2007	2009–2012
<b>United States <sup>1</sup></b> .....	<b>5.7</b>	<b>4.2</b>
Arizona .....	9.1	3.1
Florida .....	7.8	3.7
Nevada .....	10.1	2.1
North Dakota .....	6.1	10.4
Indiana .....	4.6	4.4
Michigan .....	2.8	3.4
Ohio .....	3.6	4.0

1. The personal consumption expenditures (PCE) values used to compute the compound annual growth rates for the United States equal the sum of state estimates. This sum differs from the estimates of PCE in the national income and product accounts (NIPAs) because PCE by state excludes net expenditures abroad by U.S. residents.  
NOTE: Estimates are based on the NIPA PCE statistics before the annual revision released on July 30, 2014.

**Chart 3. Percent Change in Total Personal Consumption Expenditures by State, 2002–2012**



and parts and on furnishing and durable household equipment decreased by notable amounts in 2008–2009 (chart 4). Both of these categories of goods consist of items where households can easily adjust their budgets in reaction to economic developments. Spending on food services and accommodations, another spending category where consumers can easily adjust their spending, also decreased in 2008–2009, but the decrease was much less severe than the decrease in the other selected spending categories.

For two states hit hard by the decline in manufacturing activity, Indiana and Ohio, spending on motor vehicles and parts and on furnishings and durable household equipment also decreased in 2008–2009. However, these decreases were much more moderate than the corresponding decreases in Nevada and Arizona. The declines in spending on food services and

accommodations in Indiana and Ohio in 2008–2009 were hardly noticeable.

Spending on gasoline and other energy goods declined notably across all states partly as a result of declining national gas prices over the course of 2008–2009.

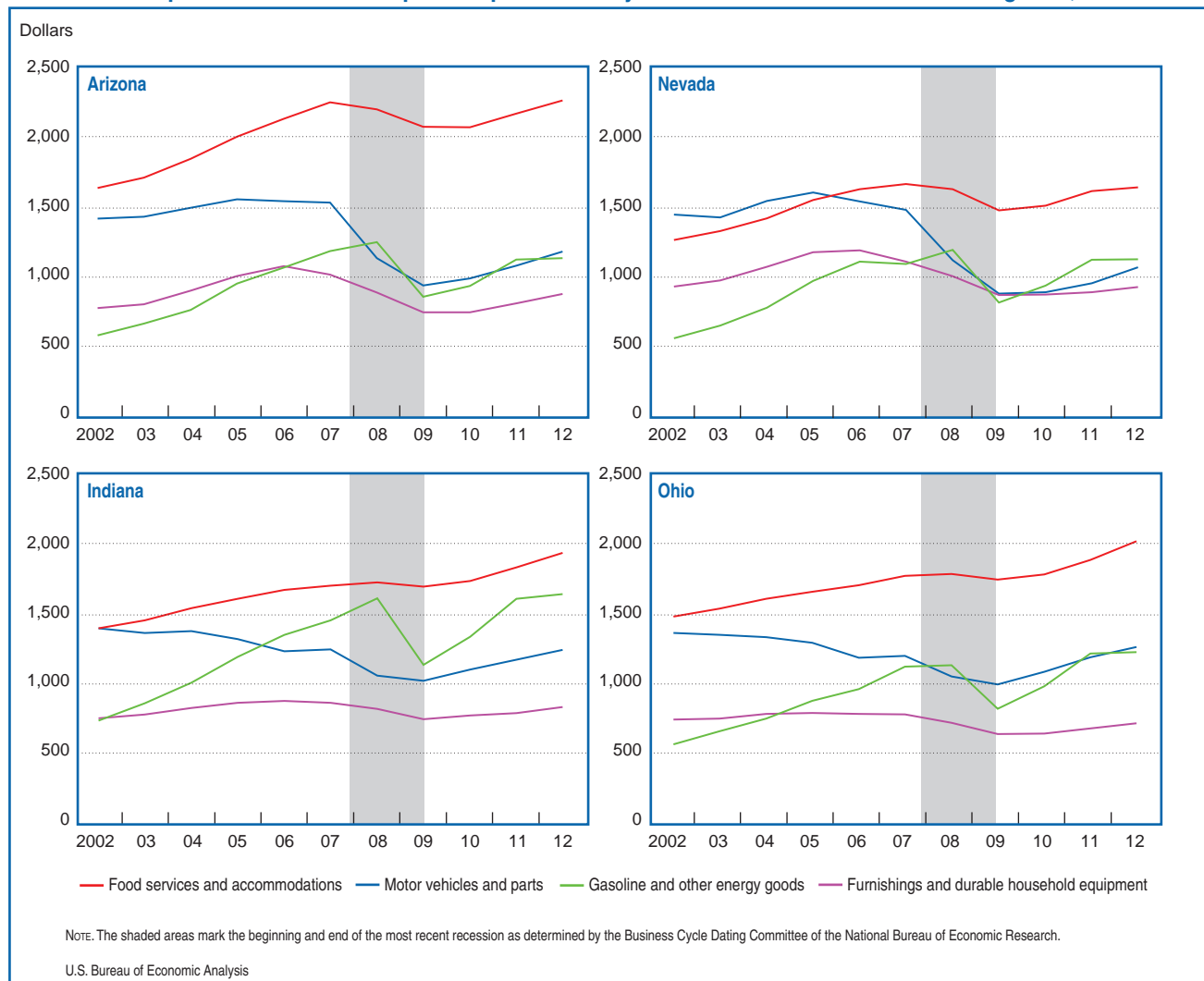
### Data and Methodology

The prototype PCE-by-state statistics are created with a methodology and evaluation procedure that are based on detailed state-level source data. The methodology has three main steps:

- Use state-level data to create an initial set of annual expenditure estimates for 77 detailed categories.<sup>2</sup>

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

**Chart 4. Per Capita Personal Consumption Expenditures by State for Selected States and Categories, 2002–2012**



- Scale the initial estimates across states to match the national PCE category totals and aggregate expenditures to the 16 categories presented in the prototype PCE-by-state statistics.<sup>3</sup>
- Adjust estimated expenditures with household survey-based data when evaluation indicates out-of-state spending is present.

The data and methods used for the annual estimates and the major improvements are described below.

### Annual estimates

Three main methods are used to prepare the prototype annual estimates, depending on the data that are available for each spending category. The first method uses receipts from the economic census and annual expenditure data from a variety of sources. The second method uses price and quantity information for a particular good or service. The third method uses BEA's regional personal income data.

**Receipts and expenditures.** State-level receipts from the economic census are used for approximately 60 percent of PCE by state.<sup>4</sup> This coverage includes most categories of goods and many categories of services. Whenever possible, total receipts for the corresponding industries are adjusted by state-level information on class-of-customer to remove purchases by businesses and government. When state-level information on class-of-customer is not available, national information from the economic census or BEA's input-output tables is used to make a similar adjustment.

To extend the statistics between and beyond the years for which economic census data are available, wage and salary information for in-state workers employed by industry from Bureau of Labor Statistics quarterly census of employment and wages are used for interpolation and extrapolation.

For estimates on religious activities and subcategories within health care, annual expenditure data are used. These sources include state-level data on health care spending by state of residence tabulated by the Center for Medicare and Medicaid Services and data on expenditures of religious institutions from the National Center for Charitable Statistics. Because these statistics are available annually, additional 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 for ex-

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

4. Economic census receipts of nonstore retailers introduce bias and are excluded from the state-level estimates of category spending. The resulting distribution of receipts implicitly assumes that online and mail order sales are geographically distributed in the same pattern as the store-based sales.

penditures on tenant-occupied housing, utilities, and higher education. For tenant-occupied housing, rental housing units and average monthly rent data from the American community survey (ACS) are used to generate estimates for 2000–2012. For other years, state population growth is used to complete the series. For utilities, three main data sources are used. These sources include 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. For higher education, information on enrollment and average state tuition from the National Center for Education Statistics are used.

**Personal income.** This method is used for owner-occupied housing and for financial services and insurance. Owner-occupied housing, which is one of the largest spending categories, is the expenditure that homeowners would make if they rented the house instead of owning it. For this category, BEA's corresponding regional measure of the net rental income is used.<sup>5</sup> For finance and insurance, disposable personal income by state is used as an indicator to allocate the corresponding national expenditures to states.

### Residency adjustment

The prototype estimates based on the economic census data need to be adjusted to reflect spending by place of residence because the data are based on where the sale occurred. Travel and tourism and sales tax differentials in neighboring states are examples of factors that explain why some purchases are made outside of a consumer's home state.

The residency adjustments are based on an analysis that compares the prototype estimates with independent data sources related to state-level household spending. These independent sources include state population, state disposable personal income, and consumer expenditure survey-based data from the Bureau of Labor Statistics.<sup>6</sup> The residency adjustment is made with a category-specific state-level ratio of sur-

5. The difference between the measure of owner-occupied housing in PCE and the net income for owner-occupied housing is the costs of home ownership. These costs include intermediate goods and services consumed, consumption of fixed capital, property taxes, net interest paid, net transfer payments, and subsidies. The use of net income as an indicator for PCE assumes that these intermediate costs are the same share of imputed gross rental income for owner-occupied housing across states.

6. The consumer expenditure survey-based data are expenditure weights created as part of BEA's regional price parities; for details, see Bettina H. Aten and Eric B. Figueroa, "Real Personal Income and Regional Price Parities for States and Metropolitan Areas, 2008–2012," SURVEY OF CURRENT BUSINESS (June 2014).



vey-based household expenditures to the expenditures derived from business receipts.

Nonresident spending is apparent across many states for recreation services and transportation services. For a small number of states with large numbers of visitors, nonresident spending is apparent in additional categories of spending. As a result, the prototype estimates of PCE for recreation services and transportation services are adjusted for almost all states to account for nonresident spending. Adjustments to a broader set of categories are made for visitor spending to Hawaii, Nevada, Florida, New York, and the District of Columbia.

### Recent improvements

The methodology used to prepare the prototype PCE-by-state statistics is largely consistent with the methodology used to produce the experimental statistics that were presented in the working paper last year.<sup>7</sup> However, the new prototype estimates incorporate three major improvements to the methodology that have been made over the past year.

- Statistics related to many service categories are now based on the more detailed service line information collected in the economic census. These service categories include transportation services, food services and accommodations, recreation services, and underlying parts of other services. Using these more detailed data, the portion of receipts from non-PCE-related purchases can now be more effectively removed, and the methodology is more consistent for the economic census-based estimates.
- New data sources are now used to refine the statistics related to the categories of housing and utilities and of other services. For housing and utilities, information from the ACS is now used to estimate values for tenant-occupied nonfarm housing. For the category

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7. Christian Awuku-Budu, Ledia Guci, Christopher Lucas, and Carol Robbins, "Experimental PCE-by-State Statistics," BEA working paper WP2013-6 (Washington, DC: BEA, June 2013).

of other services, information from the International Trade Administration Survey of International Air Travelers is used for estimates of net foreign travel expenditures.

- Residency adjustments are based on a more consistent set of criteria. The prototype statistics are now adjusted for residency either by category or by state—for example, categories of recreation services and transportation services are adjusted for almost all states. For states like Hawaii or Nevada, a more consistent set of categories is adjusted to remove visitor spending.

### Next Steps

As the new set of PCE-by-state statistics is being prepared for release in the winter of 2015, BEA is seeking comments on the potential uses of the data, the methodology, and enhancements of the data set that would be most beneficial to users. Comments should be directed to staff at [pcebystate@bea.gov](mailto:pcebystate@bea.gov).

Depending in part on user feedback, BEA plans to introduce the PCE-by-state statistics as an official statistical product of BEA that would be updated annually. Over the next year, planned areas of focus include incorporating results from the 2012 Economic Census and looking into possible 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 real PCE-by-state measures that account for differences in prices both across states and over time. This development would allow for comparisons in real spending by category and provide a measure of well-being based on consumption quantities; for example, the decline in the price of gasoline could be separated from the impact on consumption quantities of gasoline. The development of real PCE-by-state statistics would also allow for comparisons on spending across states that account for differences in the general price levels across states.

### Personal Consumption Expenditures, Disposable Personal Income, and Personal Saving

Personal saving is the amount of current-period disposable personal income that is available for investment or for future consumption. In the national income and product accounts (NIPAs), personal saving is calculated by subtracting personal outlays from disposable personal income. Since personal consumption expenditures (PCE) are typically the largest personal outlays, the prototype PCE-by-state statistics comprise a major piece of the computation of personal saving at the state level. However, other state measures of personal outlays that are likely to vary across smaller geographic locations are also needed to calculate state-level personal saving.

These additional measures include personal interest payments and personal current transfer payments. (The table illustrates the detail that is needed to calculate personal outlays at the national level.) Personal interest payments (line 4) consists of nonmortgage interest payments, such as interest on credit card debt. Personal current transfer payments (line 5) consists of transfer payments to government and the net personal transfer payments from persons to government (line 6) includes fines, fees, certain tax penalties, unclaimed bank deposits, donations, excise taxes on IRAs, and excise taxes paid by nonprofit institutions serving households.<sup>1</sup> Net personal transfer payments to the rest of the world (line 7) is the sum of remittances paid to nonresident households and

remittances received from nonresident households.<sup>2</sup> An additional entry would be needed to account for interstate personal transfers, which do not need to be accounted for at the national level (line 8). Thus, while PCE-by-state statistics provide for most of personal outlays, the calculation of state-level measures of personal saving would require the development of additional regional data.

2. A new estimation method developed for the international transaction accounts using data from the current population survey has the potential to develop state-level estimates of payments to nonresident households, though not the inflows (see Rachel Soloveichik and Anne Flatness, "Modeling Personal Transfers from the United States" (paper presented at the International Association for Research in Income and Wealth, Boston MA, August 5–11, 2012)).

		Billions of dollars, 2012	Percent of personal outlays
1	Disposable personal income.....	12,384.0	.....
2	Less: Personal outlays.....	11,487.9	.....
3	Personal consumption expenditures.....	11,083.1	96.5
4	Personal interest payments.....	241.6	2.1
5	Personal current transfer payments.....	163.1	1.4
6	To government.....	90.0	0.8
7	To the rest of the world (net).....	73.1	0.6
8	To other states (net) <sup>1</sup> .....	.....	.....
9	Equals: Personal saving.....	896.2	.....
10	Personal saving as a percentage of disposable personal income.....	7.2	.....

1. Bureau of Economic Analysis (BEA), *Government Transactions* (methodology paper 5, Washington, DC: BEA September 2005).

1. This entry is not part of the national income and product accounts (NIPAs) table 2.1, but it would be needed to account for interstate personal transfers.  
Source: NIPA table 2.1.