

Regional Price Parity Methodology Revisions December 14, 2021

Data released today on real personal consumption expenditures (PCE) and real personal income by state are impacted by the following changes to the estimation methods for regional price parities (RPPs):

1) The adoption of PCE weights.

In September 2020, the Bureau of Economic Analysis (BEA) published experimental estimates of RPPs replacing expenditure weights from the Consumer Price Index (CPI) program with PCE-based weights. The change creates consistency in the treatment of the PCE series, with both prices and adjusted expenditures estimated simultaneously. Their use increases transparency because state PCE data are publicly available and directly observed for all states.

PCE-based weights narrow the range of RPPs across regions because the share of housing rents is smaller in PCE compared to the CPI weights. Housing rents have the widest price variability across expenditure categories, so decreasing their share also decreases the RPP range. In addition, some PCE categories cannot be matched to a regional price series and are instead assigned a national price that does not vary across regions.

For more information, see [Experimental Estimates of PCE-Weighted Regional Price Parities and Real PCE by State](#)

2) The introduction of housing and utilities data from the American Community Survey (ACS) public use microdata sample (PUMS).

As part of the July 2021 annual update of the National Income and Product Accounts (NIPAs) and subsequent revisions to the industry and regional accounts, BEA has implemented improvements in source data and the methodology for annual current-dollar estimates of housing services expenditures on tenant- and owner-occupied housing.

The new methodology utilizes microdata on housing units from the ACS, which is an annual survey that replaced the long-form decennial census questions on housing. Estimates are based on the ACS PUMS and the resulting expenditures for housing and utilities are used for estimating the RPPs.

For more information see:

- [Improved Measures of Housing Services for the U.S. Economic Accounts](#)
- [Preview of the 2021 Annual Update of the Regional Economic Accounts](#)

3) The removal of highly variable CPI item strata.

Seven item strata were removed from the estimation of RPPs:

- 3 Medical: Hospital Services, Physicians Services, and Prescription Drugs
- 3 Educational: College Tuition and Fees, Elementary and High School Tuition and Fees, Childcare and Nursery School
- 1 recreation: Club membership for Shopping Clubs, Fraternal or Other Organizations

The data for Hospital and Physician Services are not consistent with BEA's national medical price index, and both BEA and the Bureau of Labor Statistics are pursuing alternative data sources for medical goods and services in the CPI. The remaining item strata are highly heterogeneous with relatively few observations. This has made it difficult to obtain consistent estimates of their relative price levels on an annual basis.

The removal of these item strata narrows the range of the RPPs, particularly for Other Services. The RPP for Other Services no longer include Utilities, which are now published separately.

4) The use of annual CPI and ACS data instead of multiyear moving averages.

In the past, the estimation of RPPs used multiyear rolling averages to blend the CPI and the ACS confidential microdata, creating a multi-tiered system with one, three, and five-year averages depending on the level of spatial aggregation: state, MSA, or portions of states. Annual estimates were revised until centered on the mid-point of the multiyear rolling average.

In conjunction with BEA's new housing expenditures, the RPPs for housing rents and utilities are now estimated on an annual basis at the smallest geographic level possible, that is, for PUMAs consisting of areas with a minimum population threshold of 100,000. By using annual CPI results instead of 5-year averages, we eliminate the need for the rolling estimates in a multi-tiered aggregation system.

The use of annual data and PUMA level geographies increases the range of the housing rent RPPs and increases the variability of the Goods and Other Services RPPs.