Taking Account...

BEA Study Estimates Price Indexes for Metro Areas

Price deflators are commonly used to adjust data for changes in price levels. For regional economists, one challenge has long been to deflate production and personal income data for specific regions with appropriate price indexes.

In a recent paper that builds on her previous research, Bettina H. Aten, economist at the Bureau of Economic Analysis (BEA), has calculated estimates of experimental price deflators for 2005 that may be used to adjust price level differences across 363 metropolitan areas and across all states and the District of Columbia. These "place-to-place" price differences make possible comparisons of economic data that are adjusted for geographic differences in price levels.

In international comparisons, these adjustments are termed purchasing power parities; when divided by exchange rates, they are called national price levels. In areas with a common currency, like the euro, the exchange rates are the same and the purchasing power parities become price levels.

Just as there are differences in price levels between European Union member countries, there are significant differences in the purchasing power of a currency across diverse areas of the United States. Price movements in metropolitan New York, for example, are likely much different than price movements in rural South Dakota.

Aten uses the term spatial price indexes to label these estimates, which can be seen as the regional equivalent of purchasing power parities for consumption.

Spatial price indexes can be used to adjust consumption-related statistics—such as per capita incomes, expenditures, and output—providing users with a more accurate picture of regional economic differences at a given point in time.

Aten's calculation of the spatial price indexes proceeded in three steps. In the first step, 38 areas with specific consumer price indexes (CPIs) were decomposed into smaller and more consistent geographical areas, generally counties.

In the second step, estimates were made for the remaining counties in the United States. These counties, for which there was not a relevant CPI, tend to be in nonmetropolitan and rural areas.

In the third step, these county price level estimates were aggregated for all states and 363 metropolitan areas.

The paper also calculated the values of personal income and gross domestic product by metropolitan area and state deflated by their respective spatial price index and thus adjusted for geographic differences in prices.

The results demonstrate the feasibility of estimating state price levels from the best information available on prices and rents from the Bureau of Labor Statistics and the Census Bureau's American Community Survey. Just as economists deflate incomes and output over time to adjust for changes in prices across years using the CPI, the spatial price indexes can be used to adjust incomes or output for differences in relative price levels across places.

The paper is available on the BEA Web site at <www.bea.gov> by clicking on "Papers and Working Papers."

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- Have GDP revisions over time raised GDP growth?
- Is there evidence GDP growth is overstated because imports are mismeasured?

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