Reconciling the CPI-U and the PCE Deflator: 3rd quarter

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This article, sixth in a series, reconciles two of the Federal Government's major inflation measures—the Consumer Price Index (CPI-U), published by the Bureau of Labor Statistics, and the Implicit Price Deflator for Personal Consumption Expenditures (PCE Deflator), produced by the Bureau of Economic Analysis. The purpose of these articles is to help clarify discussion of issues concerning the sources of divergence between the two measures—"weighting" and "treatment of homeownership costs" issues, and, to a lesser degree, the issue of computational and compilation differences. This is accomplished by measuring the empirical significance of each of these factors.

As in earlier articles, two reconciliations are presented, one dealing with period-to-period changes (annual and quarterly) in the price measures, and the other with total movement of the two indexes over the decade from 1972 to date. In both reconciliations, the effect of one factor or group of factors, holding all other factors constant, can be extracted from the overall divergence by taking the difference between alternative versions of the measures which differ only in one or a small number of respects.

Reconciling period-to-period changes. In the third quarter of 1982, the CPI-U continued to rise more rapidly than the "PCE: Chain-Weight" index. The percentage-point difference (0.9) was the same as for the second quarter. The composition of that difference did, however, shift quite dramatically.

The third-quarter housing treatment effect of 0.6 percentage points is the third negative housing effect of the past year. This negative effect is the result of rental charges increasing at a faster rate than homeownership costs. For each of the 3 months, rents rose faster than CPI-U homeownership costs. (In July, rents increased 1.0 percent and homeownership costs, 0.4 percent; in August, 0.5 and 0.4 percent; in September, rents increased 0.4 percent, and homeownership costs decreased 0.7 percent.) Although it has generally been true in the recent past that CPI-U homeownership costs have risen more rapidly than rental costs, this effect can change direction as economic conditions affect house prices, interest rates, other components of homeownership costs, and rental charges.

The weighting effect measures the impact on the price measure of using weights for recent periods, compared with the decade-old weighting structure of the CPI-U. The weighting effect turned positive in the third quarter after 4 negative quarters, but continued to be quite small relative to the overall quarterly increase (only 0.2 percentage points relative to a quarterly change of approximately 7 percent).

The "all other" effect, measured as the difference between CPI-XI, a rental equivalency measure, and the PCE: 1972-Weight index, increased substantially in the third quarter. This effect measures the influence of all differences between the CPI and PCE: Chain-Weight index other than those which result from choice of weights and housing treatment. Although a full explanation of this source of price measure difference remains unclear, depending as it does on a very large number of separate factors, the influence of seasonal adjustment procedures more than likely plays an important role. The fact that over a period of several years quarterly effects for any one year have shown a pattern of being low at the outset of the year and then rising in the latter quarters lends support to this view.

Reconciling cumulative changes. Table 2 updates the cumulative reconciliation of the CPI and PCE Deflator. The general results, consistent with those of previous reconciliations, can be summarized as follows: (1) different approaches to the measurement of housing costs have accounted for approximately two-thirds of the cumulative difference between the two measures over the 1972-
1982 period; (2) as expected, the impact of choosing weights from different periods has increased as intervals lengthen, yet the total effect of weighting differences over a 10-year period is only 7.7 index points over an interval during which the price level doubled; and (3) despite significant differences between procedures for compiling and computing the two measures, all other factors have made only a very small contribution to the overall divergence.

Result (1) stands out as having particular significance at this time. Last month, the Bureau of Labor Statistics changed the procedures used to compile the homeownership component of the CPI. The new approach—rental equivalence (a derivation of CPI-X1)—is in concept akin to that followed by the Bureau of Economic Analysis in its compilation of the PCE Deflator. Hence, future reconciliations beginning with the first quarter should show less disparity in movements of the two measures.

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2 As discussed in Triplett, pp. 7, 13-14, the PCE Deflator, a Paasche-formula index, cannot be used for this reconciliation because Paasche formulas lend themselves to statistical interpretation only when referring to the base year (in this case, 1972).