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Historical CPI Inflation Under Current Calculation Methods

During the 1990s, a much-discussed topic among policymakers and in financial markets has been the possibility that widely-used measures of U.S. inflation are contaminated by systematic bias. This issue is important for many policy decisions. Cost-of-living adjustments, such as those for Social Security recipients and federal government retirees, are tied to inflation measures. Federal tax brackets are also adjusted for inflation on an annual basis. In addition, measurement of inflation is a significant issue for monetary policy-makers, for whom controlling inflation is a key goal.

Most of the discussion of measurement bias has focused on the consumer price index (CPI), and the possibility that measured CPI inflation rates overstate actual inflation rates. Misstatement can occur because a number of difficult issues arise when defining a price index and collecting price data to calculate the index. As just one example, adjustments must be made for changes in the quality of goods from one period to the next. If the price of a family-size refrigerator increases from one year to the next, a portion of that increase may be due to inflation, but a portion of it may also be due to improvements in the quality of the refrigerator. Assigning these portions can be difficult, because it is not obvious how much of a given price increase reflects quality improvements.

To reduce the potential for bias, the Bureau of Labor Statistics (BLS) has made numerous changes in the methodology used to calculate the CPI during the 1990s, in addition to previous changes made during the 1980s. For example, the BLS now allows for more consumer substitution between CPI item categories. This captures the effect, for example, of gasoline prices rising more than prices for all other goods, which causes consumers to "substitute" by buying less gasoline and more of all other goods.

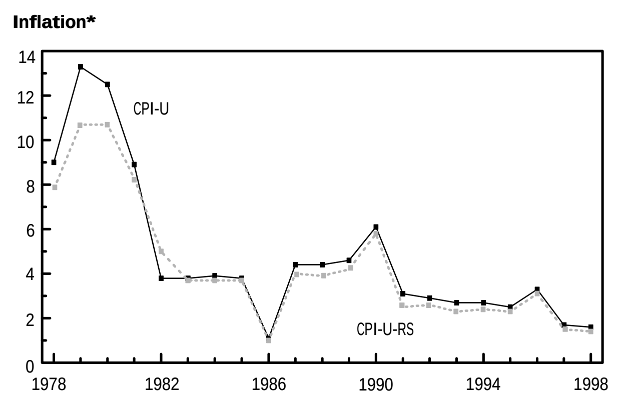
A question naturally arises as to how different historical CPI inflation would have been if the current methodology had been in place. The BLS has now published a series that provides an approximate answer to this question.[1] It is called the *CPI research series using current methods* (CPI-U-RS). Inflation rates for the last 20 years according to the historical CPI and the CPI-U-RS are plotted in the chart.

The chart shows that measured annual inflation rates would generally have been lower if the current methodology had been used during the entire period from 1978 to 1998. The average difference between the CPI-U and the CPI-U-RS annual inflation rates over this period is 0.45 percent. Much of this difference occurred during the 1978 to 1982 period, however, before the BLS began to use rental equivalence methods to measure changes in the cost of owning a home. For the period from 1983 to 1998, the average difference is only 0.28 percent.

—James Bullard

[1] Kenneth J. Stewart and Stephen B. Reed. (1999) "CPI Research Series Using Current Methods, 1978-1998." *Monthly Labor Review*, U.S. Bureau of Labor Statistics, June.

Twenty Years of Inflation Rates



*Percent Changes, December to December