

Research Department
Federal Reserve
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Measuring Inflation

The consumer price index (CPI) rose at a sharply decelerated pace in April, its 0.9-percent increase contrasting sharply with the successive 1.4-percent increases in each of the first three months of the year. Indeed, the April 1980 increase was the smallest monthly increase since January 1979. But in periods of deceleration as well as periods of acceleration, questions arise about the CPI's value as an indicator of the actual extent of the nation's inflation problem.

The CPI's role is magnified by its use as an indexing mechanism to compensate private and public income recipients for past losses to inflation. Most major labor contracts contain escalator provisions based on the CPI, while roughly half of all Federal spending is now indexed for inflation. (At midyear, for example, all social-security recipients will receive a 13-percent benefit increase based on the CPI increase of the past year.) Because of the stakes involved, we would do well to examine the criticisms leveled against the consumer-price index, to determine whether that index can be improved or whether some other measure would provide a better yardstick for inflation.

Weighting, quality problems

Some critics contend that the CPI overstates the cost of consumer purchases because it is a fixed-weight index—because it measures price changes of items in a market basket whose composition has remained unchanged since the 1972-73 base period. But some price changes induce consumers who wish to maintain their standard of living to switch to products not purchased previously, or else to change the proportions in which items are purchased. Many consumers buy proportionately less of those items whose prices have risen most rapidly, while buying more of those items whose prices have risen at a slower pace. Consequently, when prices rise, a fixed-weight index becomes overly weighted

with items whose prices have risen most rapidly, and in this way overstates the overall rate of inflation.

Some critics also contend that the CPI overstates inflation because it fails to take quality changes adequately into account. Everyone agrees that quality changes in an item should not be reflected as a price change, since the index is supposed to measure the cost of purchasing a constant market basket of goods and services. The Bureau of Labor Statistics (BLS) attempts to handle the problem by adjusting for the cost associated with producing specific quality changes. But at times BLS may fail to adjust enough for such changes, especially in those areas where new technology creates better quality at the same or reduced cost. On the other hand, BLS may err in the other direction by failing to adjust prices upward for quality deterioration—by failing to adjust for products which break down faster than they formerly did because of the use of lower-quality materials in their production. On balance, according to key studies, these quality factors may offset each other in the construction of the overall index.

Home-purchase problem

In recent years, the strongest criticism of the CPI has arisen because of its treatment of owner-occupied housing—an increasingly expensive item whose treatment has come to account for most of the recent difference between the CPI and alternative inflation measures. BLS now values all goods and services in the 1972-73 market basket at the prices the consumer pays when purchasing those items. Consequently, BLS includes in the index the transaction price of a newly purchased home as well as the cost of contracted mortgage-interest payments—along with the purchase prices of toothpaste, milk, TV sets, and a host of other goods and services.

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This does not mean, as frequently alleged, that BLS treats housing prices and mortgage costs as if all home-owners purchased their houses in the current survey month. In fact, only 6 percent of all families are counted as current home purchasers, because that was the percentage when the composition of the CPI market basket was determined in 1972-73. Even so, we may question whether the total transaction price of a house should be included in an index of consumption items. The transaction price of a house implicitly includes both what the consumer is willing to pay for shelter and what he is willing to pay for housing as an investment. Including the investment return as a home-ownership cost necessarily exaggerates the cost of shelter in the CPI, and thus leads to an overstatement of inflation, during the recent period of soaring home-appreciation values.

This problem can be corrected through the use of a flow-of-services approach—through the estimation of the major cost components that owners incur when providing housing for themselves. The flow-of-services approach, unlike the current official approach, does not assume that the entire value of the house is “consumed” or used in the month it is purchased.

The flow-of-services approach can be measured on a user-cost basis, by estimating the major costs that owners incur, or on a rental-equivalence basis, by estimating what a home-owner would pay if renting the house. The two approaches are theoretically equivalent but sometimes yield different results.

The major components of the user-cost alternative include mortgage costs, maintenance and repairs, property taxes, insurance, capital gains which arise from changing home values, and home-equity costs that represent the foregone return on money invested in owning a house. The latter cost is not clearly defined, and analysts debate whether it should be represented

by the rate of return on some set of financial assets, by the mortgage rate itself, or some other opportunity cost. Unfortunately, the estimate of home-ownership costs depends critically on which alternative is chosen, and at least until this issue is resolved, a user-cost estimate of housing services cannot be incorporated in an official CPI estimate. On the other hand, the rental-equivalence method suffers from the difficulty of obtaining a good sample of rental housing during certain periods, such as rent-control periods, or in certain areas, such as suburban developments which lack sufficient rental housing.

In spite of these problems, a flow-of-services approach represents a conceptually more accurate measure of home-ownership costs than the price-transactions approach of the official CPI, and the BLS thus is pursuing further studies of the flow-of-services approach. In 1979, both flow-of-services approaches led to lower estimates of inflation than the official CPI, which averaged 11.2 percent. The rental-equivalence method produced a 9.6-percent estimate of over-all consumer inflation, while a user-cost method produced a 10.1-percent estimate.

Best inflation measure?

In view of all the problems with the CPI, some observers have proposed concentrating instead on the price index (deflator) for personal consumption expenditures in the GNP accounts. This PCE deflator uses the same prices for consumption items as does the CPI. It differs in one important respect, however, in its treatment of home-ownership costs. By using a rental-equivalence basis instead of a price-transaction basis, the PCE deflator avoids the overstatement of housing costs which mars the official CPI. Largely for that reason, the deflator was 2.3 percentage points below the official CPI during 1979, after averaging 0.6 percentage points lower during the preceding decade (see chart).

The PCE deflator also differs in its treatment of weights, by using variable weights rather than

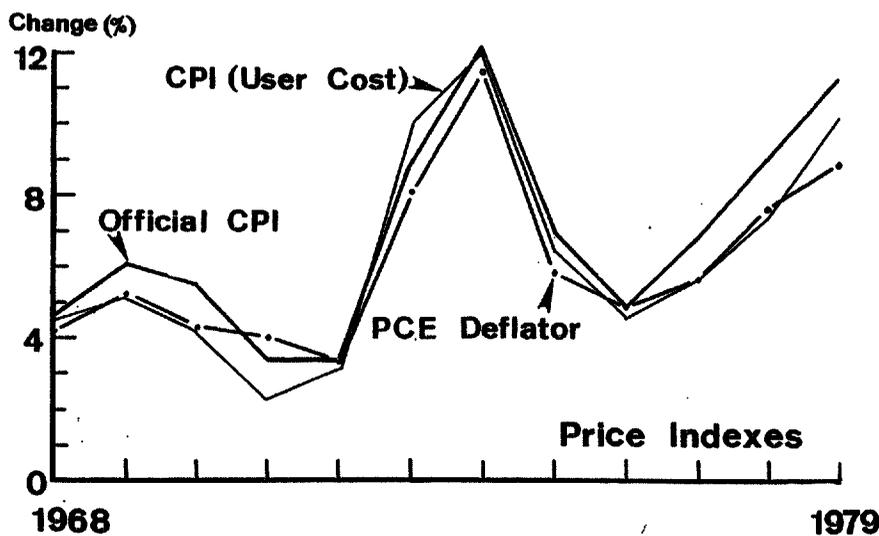
fixed weights in the calculation of the index. This index compares the prices of today's market basket with what that basket would have cost in 1972 prices. Therefore, every quarter the PCE deflator prices a different market basket. It does not attempt to keep track of the changing costs of maintaining a standard of living, or of buying a given market basket of goods and services. In addition, the PCE deflator has other difficulties as a cost-of-living index. Its market basket excludes purchases of used cars and all used items, and takes no account of consumer financing costs.

These considerations suggest the need for a measure which avoids the drawbacks of both the official CPI and the PCE deflator in estimating inflation. Either the rental-equivalence or the user-cost alternative to the official CPI might provide just such a measure—because as noted above, each

avoids the CPI overstatement of housing costs, while avoiding the PCE deflator's exclusion of items in the consumer's market basket. These alternative CPI estimates generally lie between the official CPI and the PCE deflator; in 1979, for example, the user-cost alternative yielded a 10.1-percent estimate of inflation, compared with 11.2 percent for the official CPI and 8.9 percent for the PCE deflator.

These alternative approaches have gained increasing support as better alternatives for measuring inflation. Both the labor and business advisory panels to BLS, while recognizing the measurement difficulties, have recommended that BLS move toward adoption of these more conceptually correct methods of pricing the flow of services from owner-occupied housing in the CPI.

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BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT

(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 5/14/80	Change from 5/7/80	Change from year ago	
			Dollar	Percent
Loans (gross, adjusted) and investments*	137,327	- 372	+ 10,952	+ 8.7
Loans (gross, adjusted) — total#	115,664	- 377	+ 12,268	+ 11.9
Commercial and industrial	33,148	- 242	+ 2,385	+ 7.8
Real estate	46,243	+ 111	+ 8,889	+ 23.8
Loans to individuals	24,019	- 114	+ 2,174	+ 10.0
Securities loans	1,173	+ 34	- 525	- 30.9
U.S. Treasury securities*	6,343	- 14	- 1,448	- 18.6
Other securities*	15,320	+ 19	+ 132	+ 0.9
Demand deposits — total#	42,220	- 684	- 132	- 0.3
Demand deposits — adjusted	30,454	- 2	+ 252	+ 0.8
Savings deposits — total	26,191	+ 125	- 3,570	- 12.0
Time deposits — total#	64,474	- 469	+ 14,316	+ 28.5
Individuals, part. & corp.	55,565	- 354	+ 14,734	+ 36.1
(Large negotiable CD's)	23,018	- 351	+ 5,891	+ 34.4
Weekly Averages of Daily Figures	Week ended 5/14/80	Week ended 5/7/80	Comparable year-ago period	
Member Bank Reserve Position				
Excess Reserves (+)/Deficiency (-)	282	291		18
Borrowings	4	34		129
Net free reserves (+)/Net borrowed(-)	278	257		- 111

* Excludes trading account securities.

Includes items not shown separately.

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