

Research Department  
Federal Reserve  
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San Francisco

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## Revising the Yardstick

Commissioner of Labor Statistics Janet Norwood last month announced a significant change in the computation of the consumer-price index (CPI), the yardstick used in adjusting the pay and benefits of 80 million Americans for the ravages of inflation. The change involved a shift in the widely criticized measurement of the CPI's housing component. Henceforth—or rather, beginning in 1983—the CPI will use a “rental equivalence” measure of housing instead of the present approach which relies on estimates of new-home prices and current mortgage costs. Over the past year, the new method would have meant a 9.2-percent increase in the CPI, as opposed to the 11.0-percent increase actually recorded.

The Bureau of Labor Statistics (BLS) actually will make the change in two steps. It will shift the index for all urban consumers (CPI-U) as of January 1983, but will not change the index for wage earners and clerical workers (CPI-W) until January 1985. Because of the extensive use of the CPI-W—considerably greater than the CPI-U—in escalation agreements in both the private and public sectors, the Bureau felt it necessary to notify all users far in advance of the actual change.

### Statistical factors

BLS made this change several years in advance of its normal revision cycle, because of the failure of the present CPI to reflect some major recent changes in financial markets. The standard long-term fixed-rate mortgage used in the CPI no longer seems representative of the mortgage market. With long-term mortgage funds declining sharply, financial institutions have developed a number of new types of mortgage arrangements—such as variable rates and shorter financing terms—which don't fit into the BLS data-collection process. Moreover, because of high interest rates and the shortage of funds for home buyers, many sellers are themselves providing financing to buyers at rates below those of

lending institutions. Again, BLS fails to pick up such arrangements in its present computations, and thus has been forced to look for a better way of measuring housing costs.

Pressure of another sort has arisen from the passage of new tax legislation (Economic Recovery Tax Act), which requires use of the CPI-U for escalation of income-tax brackets and the personal exemption. The law requires announcement of the new tax brackets in December 1984, based on the CPI data of the two preceding years. This major new use of the index will strongly affect Federal revenues, perhaps reducing the tax intake by about \$13 billion in the first year of operation. In Mrs. Norwood's words, “This new use of the index underscores the importance of action to ensure that we have a CPI which reflects the experience of consumers to the fullest extent possible.”

### Housing factors

The CPI now measures the total expenditure on house purchases (net of sales) that would be incurred currently by the same small fraction of households that acquired houses in the 1972-73 base period. It also measures the total interest payment that would currently be committed by these households over the average life of a mortgage at the time of purchase. The great majority of homeowners, who had already purchased houses before the 1972-73 survey, naturally are not included in this computation, since BLS already had included the prices and interest rates involved in their transactions at the appropriate dates. The CPI, however, covers all current expenses for upkeep, such as insurance, repairs and taxes.

The key conceptual problem with the current CPI approach is the failure to recognize that a house is an investment, and not just an item of current consumption, such as a haircut or a hamburger. Viewed as an investment, homeownership provides a continuing series

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of services at a cost—not only maintenance and financing costs, which are now included, but also the capital costs of the homeowner's equity, adjusted for capital gains and losses. Theoretically, the CPI should allow the capital gains on houses to offset some of the other costs, and include as the true cost the alternative rate of return the homeowner could obtain by investing his equity somewhere else. Unfortunately, making such an adjustment directly would involve difficult measurement problems.

The housing component, in any event, has contributed significantly to recent CPI increases because of the rapid rise of house prices and mortgage interest costs. These two items contributed at least 1½ percentage points to the 11-percent rise in the index over the past year, and considerably more in the preceding year. (But as the chart indicates, the problem has become crucial only in the last several years.) This appears to be an unwarranted impact for the vast majority of households who were not buying houses or borrowing on mortgages during this period. A single market basket naturally doesn't represent purchases by every individual family, or even the average family's purchases outside the original base period, but in this case the housing component represents a substantial overstatement of inflation.

Additionally, BLS uses the actual rather than the after-tax mortgage interest rate in computing housing costs. The way the interest deduction works, homeowners pay far less than the full nominal cost of their loans, because interest costs are subtracted from taxable income. This home purchaser's subsidy, incidentally, amounts to about \$25 billion in the current fiscal year. Yet the CPI doesn't reflect this type of housing discount.

#### **Rental equivalence**

Recognizing these problems, Commissioner Norwood made the decision to shift to the rental-equivalence method of measuring housing costs in the next several years. That step alone should reduce the relative weight

of homeownership in the overall index, from 22.8 to 14.5 percent. But the existing CPI rent index would not be an adequate solution. This component of the housing index covers only rental housing, largely apartments in urban centers, and is subject to a major downward bias because it disregards the deterioration due to the aging of the rental units in the sample.

BLS is now working to upgrade the rental-equivalence measure. This work, due for completion in the latter part of 1982, should improve the accuracy of this measure and provide for its regular calculation within the main CPI processing system.

#### **Substitution effects**

Statisticians generally have applauded the BLS decision to improve measurement of the CPI's housing component, but some have gone further and asked for additional refinements of the index. Columbia Professor Philip Cagan and former BLS Commissioner Geoffrey Moore, in a recent report to the Business Roundtable, analyzed some of the ways that the index could provide a better yardstick of inflation. They argued, for example, for counteracting the upward bias found in any fixed-weighted index such as the CPI.

Price increases for food, oil and other items have produced changes in the typical market basket since the 1972-73 survey that determined its content. With fixed quantity weights, prices that rise faster than others become relatively more important in the index, even though consumers tend to shift their expenditures in favor of lower-priced products. Many consumers have held spending increases in check by conserving energy, buying lower-priced food, and so on. An index that measures the cost of a given standard of living would allow for such substitutions while holding the standard constant, but the CPI fails to do so and thus imparts an upward bias to the yardstick.

Recent BLS surveys make it possible to revise weights more frequently, and also to con-

struct an index weighted by *current* rather than *base-period* expenditures. Generally, a current-weighted and a base-weighted index should bracket an index that measures the cost of a constant standard of living. The former tends to bias the index downward, and the latter to bias it upwards, as noted in our *Weekly Letter* of December 12, 1980. Hence, economists have long advocated an average of these two indexes as the best approximation to an index of the true cost of living.

**Living standards and indexes**

Additionally, the CPI records price changes that reflect a change in the standard of living of the entire population. OPEC, for example, has raised the price we pay for imported oil in exchange for our exports. This reduces our real national income. But as Cagan and Moore note, "Instead of everyone's sharing this burden, indexed wages and benefits compensate for it."

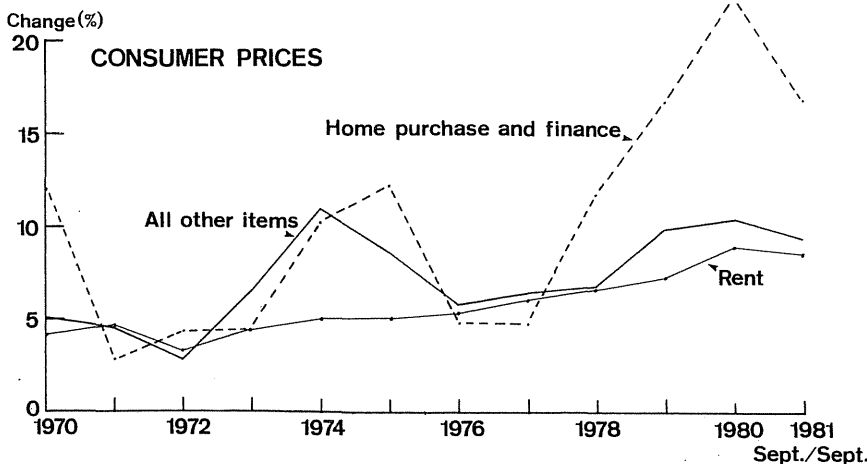
This point underlines the importance of the esoteric statistical computations that go into the development of the consumer-price index. The wages and benefits of 80 million Americans, being indexed to the CPI, depend heavily on the changes in that yardstick. Indeed, nearly two-fifths of Federal budget outlays, whether paid out as wages or transfer payments, are linked in this way. Federal spending rises by roughly \$2 billion for each

additional percentage point of measured inflation. This in turn affects the size of the deficit and the Treasury's impact on credit markets generally.

Most wage escalators are "capped" in some fashion, with less than complete adjustment to each percentage-point increase in the CPI. In contrast, most government escalators are not capped. Social-security and other beneficiaries thus are able to outpace other income recipients—those whose earnings are capped, those who don't benefit from the general upward bias of the CPI, and those whose living standards have been otherwise lowered by the OPEC "tax" on American resources.

The apparent overcompensation of fully indexed individuals could be offset in various ways. According to the Congressional Budget Office, capping social-security benefit increases at 85 percent of the overall increase in the CPI could save the Treasury roughly \$40 billion over the next half-decade, with a corresponding improvement in Treasury financing demands. Given the current climate, Congress is unlikely to act soon on such a proposal. But meanwhile, most analysts agree that continued improvements in the statistical underpinning of the CPI, in their own right, should enhance the nation's ability to deal with the inflation problem.

**William Burke**



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**BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT**

(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 10/28/81	Change from 10/21/81	Change from year ago	
			Dollar	Percent
Loans (gross, adjusted) and investments*	153,310	274	10,644	7.5
Loans (gross, adjusted) — total#	132,466	323	11,910	9.9
Commercial and industrial	39,738	— 28	4,483	12.7
Real estate	54,979	50	5,736	11.6
Loans to individuals	23,208	46	— 701	— 2.9
Securities loans	1,422	— 239	270	23.4
U.S. Treasury securities*	5,606	21	— 1,081	— 16.2
Other securities*	15,238	— 70	— 181	— 1.2
Demand deposits — total#	38,812	— 579	— 5,711	— 12.8
Demand deposits — adjusted	27,904	176	— 5,423	— 16.3
Savings deposits — total	29,214	— 173	726	— 2.4
Time deposits — total#	85,576	— 175	19,639	29.8
Individuals, part. & corp.	77,623	— 294	20,579	36.1
(Large negotiable CD's)	33,109	— 300	7,997	31.8
<b>Weekly Averages of Daily Figures</b>	<b>Week ended 10/28/81</b>	<b>Week ended 10/21/81</b>	<b>Comparable year-ago period</b>	
<b>Member Bank Reserve Position</b>				
Excess Reserves (+)/Deficiency (—)	72	47		55
Borrowings	13	9		132
Net free reserves (+)/Net borrowed(—)	59	39		— 77

\* Excludes trading account securities.

# Includes items not shown separately.

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