

ECONOMIC COMMENTARY

Federal Reserve Bank of Cleveland

The Consumer Price Index and National Saving

by Michael F. Bryan and Jagadeesh Gokhale

Although a majority of U.S. lawmakers now favor the goal of balancing the federal budget within the next decade, there is little consensus on how to achieve it. One current proposal is that the Consumer Price Index (CPI) should be adjusted to better reflect the cost-of-living increases that result from inflation.¹ If adopted, this measure will not only improve the long-run deficit outlook but, more importantly, will boost the nation's flagging saving rate.

There are two possible ways to implement such a policy. First, it may be introduced only for a particular program. For example, Social Security benefits—the largest federal transfers—may be indexed for inflation at a lower-than-CPI rate each year. This course was recommended in the early 1980s by Martin Feldstein, then chairman of President Reagan's Council of Economic Advisers.² In this scenario, the reduction in inflation indexing could be viewed as a "deductible" against Social Security's provision of retirement benefits and other insurance.

Alternatively, such a policy may be introduced comprehensively by adjusting the CPI itself.³ This approach is motivated by the belief that, for several technical reasons, the CPI overstates actual increases in the cost of living. Using a downward-adjusted price index to measure cost-of-living changes would decrease future outlays for all federal transfers that are indexed by law. In

addition, it would increase federal tax revenues because of a slower upward revision in income tax brackets—which are also indexed for inflation.

Although the desire to reduce annual federal deficits is behind the current interest in this idea, the real benefit of a new cost-of-living index will show up in higher national saving.⁴ This is true because a new index will not, by itself, lower the government's absorption of resources. Rather, increased national saving will result from the lower *private* consumption induced by the policy. This *Economic Commentary* summarizes the case for redefining the CPI and provides estimates of the additional national saving that would be generated if such a policy were implemented beginning in 1996.

■ Causes of Upward Bias in the CPI

To one seemingly direct question, "How much have prices risen?" a statistician quickly counters with another: "Prices of what?" If the composition of goods and services changes between two periods, we can record price changes for the things we consumed in an earlier period, for the things we consume in the current period, or for some combination of the two. From a statistical perspective, there is little basis for preferring any of these approaches. Indeed, it is possible to imagine many "correct" answers to the first of the questions posed.

Adjusting the CPI to reflect the true increase in the cost of living and lowering cost-of-living adjustments for Social Security benefits will alleviate two long-range problems—escalating federal budget deficits and exceedingly low national saving.

Economists usually recast that question. "When faced with changing prices," they ask, "how much would we have to compensate someone to keep him just as well off as before?" Here, of course, there is only one correct answer, which economists have dubbed the *change in the cost of living*. To date, however, no one has proposed a practical way to quantify this change, and the task has largely been thrown back to the statisticians. In constructing the CPI, the Bureau of Labor Statistics (BLS) has chosen to measure the cost of goods and services consumed in a previous period in terms of current prices.

In all likelihood, this approach overstates actual changes in the cost of living, since it does not account for the changes people make in the composition of goods that they purchase—often in response to price changes. If we were to compare current spending patterns with those of 1982–84 (the period on which the CPI is now based), we would expect to see a variety of differences.

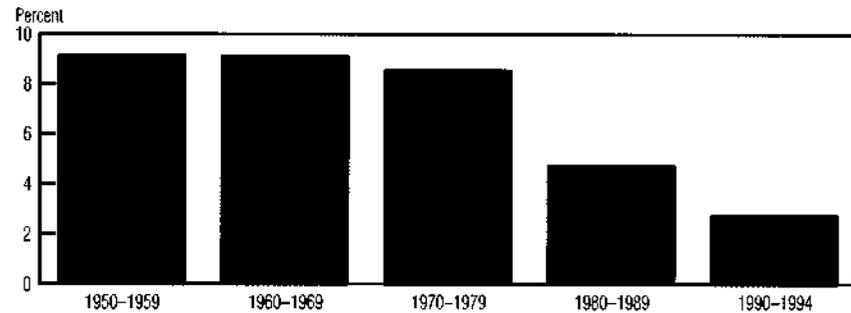
Presumably, household spending would shift toward goods whose prices rise more slowly than average and away from those whose prices rise more rapidly than average. Because the BLS does not adjust the market basket of goods and services to account for these cost savings, the change recorded by the CPI tends to overstate the *true* change in the average person's cost of living. In economists' language, if we were to compensate the average person on the basis of CPI changes, he or she would most likely be better off than before.

Thus, the dilemma caused by using the CPI to adjust government expenditures like Social Security payments is that the adjustment will tend to exceed the actual rise in recipients' cost of living and so will make them *better* off, when the purpose of the adjustment was just to prevent their standard of living from falling.

The compositional changes already mentioned, which economists call "substitution effects," are only one type in a long list of potential compositional changes that might produce an upward bias in the CPI. Others include alterations in retailing patterns (recently shown to be a potentially important source of CPI bias caused by the arrival of discount stores), and improvements in the quality of goods that might be recorded as cost increases, but in fact reflect better, more satisfying products. Another compositional change occurs when new goods are introduced, since they previously had no recorded price. Yet, these many possible kinds of CPI bias have a common origin: Tying the market basket of goods to an earlier time causes the index to overstate actual cost-of-living changes because the composition of goods that people purchase is altered in a way that either minimizes cost changes or maximizes benefit changes.

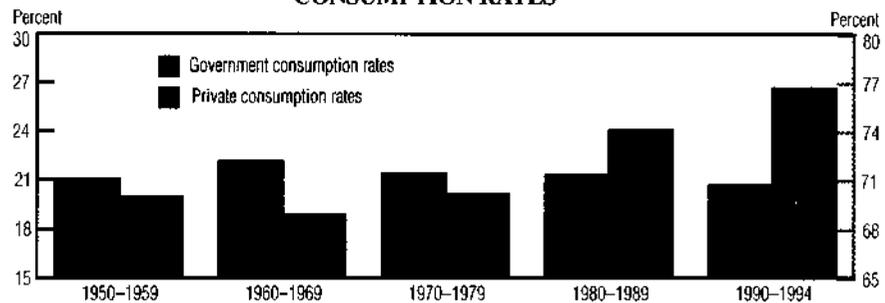
From a statistical perspective, there is no obvious way to "fix" the CPI. The BLS could try to update the market basket more frequently (adjustments are now made about every 10 years), but that would require additional, expensive surveys of household expenditure patterns. Moreover, there is no guarantee that the resulting index would conform more closely to the "true" cost of living. In fact, it is easy to show that such adjust-

FIGURE 1 U.S. NET NATIONAL SAVING RATE



SOURCE: Authors' calculations based on National Income and Product Accounts data.

FIGURE 2 PRIVATE AND GOVERNMENT CONSUMPTION RATES



SOURCE: Authors' calculations from *Survey of Current Business*, various issues.

FIGURE 3 AVERAGE PROPENSITIES TO CONSUME OUT OF TOTAL RESOURCES, 1987-1990



SOURCE: Jagadeesh Gokhale, Laurence J. Kotlikoff, and John Sabelhaus. "Understanding the Decline in U.S. Saving: A Cohort Analysis" (footnote 7).

ment can result in a price index that consistently *understates* the cost of living.

Because the CPI is not likely to be fixed soon, and because it very probably contains an upward bias, the most practical course may be merely to adjust the cost-of-living estimate by some amount. But how much of an adjustment is appropriate? No one is certain, and the range of answers has been staggeringly wide. Federal Reserve Chairman Greenspan recently suggested that the bias was in the neighborhood of 0.5 to 1.5 percentage points per year, a figure that is consistent with a recent Federal Reserve Board staff estimate.⁵ Other assessments of CPI bias, given in testimony before Congress, have ranged from a

mere 0.2 percent per year to 1.7 percent or more. Research results from the Federal Reserve Bank of Cleveland fall at the low end of the range (about 0.7 percentage point per year, on average).⁶ Furthermore, the Cleveland Fed's research shows that CPI bias may vary substantially over time (from about 1 percentage point per year between 1967 and 1981, to virtually zero between 1982 and 1992).

After reviewing the wide range of opinions, a panel of economists chosen by the Senate recently concluded that annual CPI bias falls between 1.0 and 1.5 percentage points. Although unlikely to be the final word on the subject, this suggests that the appropriate adjustment may be about 1 percentage point per year.

TABLE 1 CHANGE IN ANNUAL U.S. SAVING RESULTING FROM ALTERNATIVE POLICIES

(Billions of 1993 dollars)

	Percentage-point change		
	0.5	1.0	1.5
Reduction in Social Security COLA	22.6	43.4	62.5
Revised CPI	38.8	75.7	110.3

NOTE: Net national saving was \$152.1 billion in 1993.

SOURCE: Authors' calculations.

■ The CPI and National Saving

To Consume—or to Save?

The net national saving rate (NNSR) is the percentage of net national output that is not consumed during the year. It is defined as one minus the sum of the private consumption rate and the government consumption rate. The NNSR has fallen substantially in the United States since the late 1970s (figure 1). Of the two consumption rates (private and government), it is the private rate's increase that is entirely responsible for the decline in NNSR (figure 2). Understanding why the rate of private consumption has risen over the last 15 years is the key to understanding how adjusting the CPI to correct for its upward bias will help restore the NNSR to its pre-1970 levels.

According to a popular approach to consumption behavior, individuals consume a fixed fraction of their resources at each age. This fraction is known as the propensity to consume out of resources. As figure 3 shows, consumption propensities rise with age: Older people tend to consume at a faster rate than do younger ones because they have a shorter remaining lifespan over which to finance consumption spending.⁷ Knowledge of consumption propensities and calculations of the change in resources that would follow a redefinition of the cost-of-living index can be used to estimate the changes in NNSR that the policy may produce.⁸

The Impact of COLA/CPI Revisions

Table 1 shows the impact on national saving of revising the CPI and lowering the cost-of-living adjustment (COLA) for Social Security retirement, survivor, and disability benefits, beginning in 1996. The numbers reported are for

1993, the base year for the calculations, when net national saving was \$152.1 billion. In general, the impact of reducing the Social Security COLA is positively related to the amount of the reduction. Cutting the COLA by 1 percentage point would increase net national saving by an estimated \$43.4 billion, which is 28.5 percent of actual 1993 saving.

Revising the CPI downward would boost national saving by much more, since it would reduce not only Social Security benefits, but also outlays for federal railroad, civilian, and military retirement, Supplemental Security Income (SSI), food stamps, and child nutrition.⁹ It would also increase income-tax revenues, all else being equal, because tax brackets would rise more slowly in the future.¹⁰ The table shows that a 1 percent reduction in the CPI would add nearly \$76 billion to national saving—almost half as much as actual 1993 saving. Even a conservative reduction in the CPI of 0.5 percentage point would produce close to \$39 billion more in saving.

We should note that many private pension benefits are also partially or fully indexed for inflation. Hence, a downward revision in the CPI would induce a reduction in private pension wealth and would add to the impact on national saving already described. Because this source of increase is not included in our calculations, the numbers we report are likely to understate the saving impact of this policy.

■ Conclusion

The current national debate about how to reduce the federal deficit has stimulated interest in lowering Social Security COLAs and adjusting the CPI to better reflect the true increase in the cost of liv-

ing. Such changes are justifiable because the current practice of indexing benefits to the CPI very probably overcompensates for cost-of-living increases that result from inflation.¹¹ However, the most important benefit of this policy will be an increase in national saving, which is now exceedingly low. If allowed to continue, such low saving may compromise future economic growth. But even minor adjustments to the CPI could improve the net national saving rate significantly.

Adopting the policy described in this *Economic Commentary* is likely to simultaneously alleviate two long-range problems—escalating federal budget deficits and low national saving.

■ Footnotes

1. The CPI, a measure of the level of prices in the economy, is based on a standard market basket of goods and services purchased by a typical worker's family.

2. See Martin S. Feldstein, ed., *American Economic Policy in the 1980s*. Chicago: University of Chicago Press, 1994, pp. 1–79. This type of policy has also been proposed recently by Senators Robert Kerrey and Alan K. Simpson as part of their plan to overhaul federal entitlement spending.

3. This is another of the measures included in the Kerrey–Simpson reform proposals.

4. Some may equate the deficit with negative public saving and so translate a deficit reduction directly into an increase in public and, other things being equal, national saving. However, because the deficit is an arbitrary accounting construct, from the viewpoint of economic theory the distinction between public and private saving is also arbitrary. Thus, inferences about changes in saving based on changes in deficits are not valid. For a full discussion, see Alan J. Auerbach and Laurence J. Kotlikoff, "Demographics, Fiscal Policy, and U.S. Saving in the 1980s and Beyond," in Lawrence H. Summers, ed., *Tax Policy and the Economy*, vol. 4. Cambridge, Mass.: MIT Press, 1990, pp. 73–101.

5. See David E. Lebow, John M. Roberts, and David J. Stockton, "Economic Performance under Price Stability," Board of Governors of the Federal Reserve System, Working Paper No. 125, April 1992.

6. See Michael F. Bryan and Stephen G. Cecchetti, "The Consumer Price Index as a Measure of Inflation," Federal Reserve Bank of Cleveland, *Economic Review*, vol. 29, no. 4 (Quarter 4 1993), pp. 15–24.

7. The consumption propensities shown here are reported in Jagadeesh Gokhale, Laurence J. Kotlikoff, and John Sabelhaus, "Understanding the Recent Decline in United States Saving: A Cohort Analysis," Federal Reserve Bank of Cleveland, Working Paper, 1995 (forthcoming).

8. One concern about using consumption propensities out of wealth is their stability over time. The available evidence suggests that these profiles have been fairly stable since the mid-1980s. The additional national saving after a policy change is estimated by computing each generation's implied change in total resources times its age-specific average propensity to consume. Summing over all members of the generation and then over all generations alive provides the required estimate. Of course, the implicit assumption here is that average and marginal propensities to consume out of resources are equal.

9. Program-specific decay factors were used to calculate the reductions in Social Security and railroad, civilian, and military retirement benefits resulting from reduced inflation indexing. This is necessary because benefits for each year's new retirees will be determined independent of earlier years' COLA reductions. For example, new retirees' Social

Security benefits in the year 2000 will be determined by their past covered earnings and will not be affected by COLA reductions applied between 1996 and 1999 to the benefits of earlier retirees. Benefit projections for SSL, food stamps, and child nutrition are based on a fixed formula applicable to everyone in a given year and so do not require the use of decay factors. The decay factors for each benefit type were provided by the Office of Management and Budget (OMB).

10. The method of computing additional future income-tax revenues from this policy is somewhat complicated. The OMB-provided baseline revenue (based on the 1994 *Mid-Session Review of the United States Budget*) is used to recover a projection of "revenue without indexation" by applying a loss factor of 0.5 times the cumulative CPI. The new revenue series is then converted into the post-policy revenue projection by applying the adjusted cumulative CPI. The difference between the baseline and post-policy projection is the additional revenue resulting from downward adjustment of the CPI.

11. The indexing of federal transfers and income-tax brackets is designed to protect individuals and households against losses due to general price inflation. Note that even

if the CPI did not overstate the true inflation-induced change in the cost of living, implementing such a policy would still generate additional national saving. However, this *Economic Commentary* does not intend to suggest that we should therefore do away with indexing for inflation altogether.

Michael F. Bryan is an economist and consultant and Jagadeesh Gokhale is an economic advisor at the Federal Reserve Bank of Cleveland.

The views stated herein are those of the authors and not necessarily those of the Federal Reserve Bank of Cleveland or of the Board of Governors of the Federal Reserve System.

Federal Reserve Bank of Cleveland
Research Department
P.O. Box 6387
Cleveland, OH 44101

Address Correction Requested:
Please send corrected mailing label to the above address.

Material may be reprinted provided that the source is credited. Please send copies of reprinted materials to the editor.

BULK RATE
U.S. Postage Paid
Cleveland, OH
Permit No. 385