

www.urban.org

INSIDE THIS ISSUE

- 2010 is the first year since the 1970s that Social Security beneficiaries did not receive a cost-of-living increase.
- The consumer price index used to calculate benefits is generally recognized to overstate cost of living.
- A new chain index, the C-CPI-U, may eliminate this upward bias.

Adjusting Social Security Benefits for Changes in the Cost of Living

Rudolph G. Penner

Late last year Social Security recipients were shocked to hear there would be no cost-of-living adjustment (COLA) for their 2010 benefits. Many complained, even though government statisticians had decreed there had been no increase in the cost of living. It was the first time without a COLA since benefits were first indexed for inflation in the early 1970s.

This rare episode drew attention to how we adjust government benefits and our income tax system for changes in living costs. The adjustment process can only provide an approximation, because there is no such thing as a cost-of-living index. The consumer price index (CPI) is used to make COLA adjustments and the Bureau of Labor Statistics (BLS) does its best to make the CPI an approximation of the cost of living. They have made significant improvements in recent years, but they will never attain perfection.

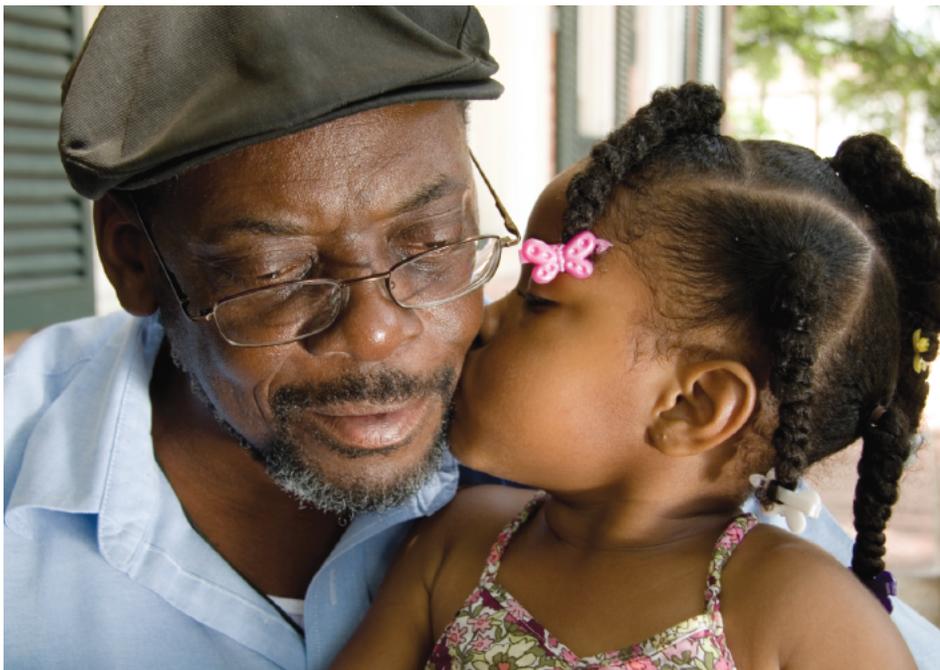
Basically, we would like to know how many dollars it takes to attain a given level of well-being and how the amount changes from month to month and from year to year. Given that well-being is an intensely personal

concept and is not really measurable, no simple index can be used to adjust accurately for changes in living costs.

Some Biases in the CPI

There are two variants of the CPI: the CPI-W, which is based on the typical purchases of a sample of wage and clerical workers, and the CPI-U, which is based on a broader sample of the urban population, including some people who are retired. In both, most price data are based on a survey of stores and other suppliers in different areas of the country. Surveys are used periodically to update the purchasing habits of the respective populations. The CPI-W is used to adjust Social Security benefits, because it was the only index existing at the time Social Security was first indexed. It would make considerable sense to

Part of Social Security's long-run financing problem could be eliminated by using a chain index to determine cost-of-living adjustments.



change to the CPI-U since that index reflects the purchases of some retired people.¹

Before 1999, it was assumed that between updates people purchased exactly the same quantities of particular goods and services each month regardless of changes in relative prices. The cost of that basket was computed and the changes in the cost became a measure of inflation that was used to make cost-of-living adjustments.

It was widely recognized that the assumption that quantities purchased did not change as prices changed meant that the CPI overstated increases in the cost of living. The problem was most famously outlined in the Boskin report (Boskin et al. 1996) but had also been noted by many other experts (Johnson, Reed, and Stewart 2006). In fact, if the price of whole wheat bread rises, people are likely to buy less of it and perhaps shift to rye bread. The ability to shift from one good to another means that the increase in the price of whole wheat bread does not have the same negative effect on well-being as if one were forced to buy exactly the same quantity at the higher price.

The CPI was reformed in 1999 to correct for this bias. It is assumed that consumers will buy less of a good when the price goes up, but the effect is only considered within narrow categories, such as cheese or bread. Moreover, given that surveys of quantities purchased are undertaken only periodically, specific assumptions are made about changes from month to month. It is assumed that if the relative price of a good goes up by a certain percentage, the quantity purchased will go down by the same percentage. That implies that the same relative amount is spent, say, on whole wheat bread, regardless of its price. Put another way, the share of a person's bread budget spent on whole wheat bread stays the same from month to month. (Under the old approach, it increased when the price of whole wheat bread increased.) Average price changes are calculated using a geometric mean with the price changes for specific goods weighted by the share of the budget spent on them.

Although the new approach reduced one form of upward bias in the index, it left another bias because it assumed that one would not shift from bread to vegetables or to other spending categories if the price of a particular kind of bread rose. There is another theoretical problem with the approach. The quantity purchased of a good need not go down when the price goes up. For example, assume that the Food and Drug Administration decides that whole wheat bread is much healthier than rye bread. The demand for whole wheat bread would then rise and both its price and the quantity purchased would go up. In deciding to make the 1999 reforms, the BLS clearly decided that this case was rarer than cases in which prices and quantities moved in opposite directions.

Upward biases may also enter the CPI because of quality improvements in goods and services and because of the introduction of new products. Cell phones have been

around for a short time but have had profound effects on lifestyles. Moreover, the phones keep improving. They have added cameras and numerous applications while becoming less bulky. The fact that one can buy products that never before existed means, all else equal, that the dollar is worth more than it once was. This offsets, to some degree, the depreciation of the dollar resulting from price increases for goods that have been around for a long time.

The BLS adjusts for quality changes and new products in a variety of ways. New products tend to be introduced into the index slowly. If the new product is clearly a replacement for something old, the new product is not introduced until the old product disappears from store shelves. One approach to adjusting for quality is to use statistical techniques to isolate the value of specific characteristics of a product. This so-called hedonic approach puts a value on different characteristics of products, say, the horsepower of a car. Since the Boskin report, new products that are not replacements for old products are being introduced into the index more quickly and the use of hedonic indices has spread. But despite the best efforts of the BLS, it is generally—although not universally—believed that they underestimate the improvement in living standards resulting from quality improvements and new products.

The Chain Index

Because an upward bias in the CPI is generally recognized, the BLS has been experimenting with a new index that reduces this bias. It is called a chain index or C-CPI-U. It tracks the share of a typical budget spent on various items from month to month and if examining, say, the inflation rate from July to August, individual price changes would be weighted by the average of the budget shares spent on the goods in the two months. Consequently, if a consumer responded to an increase in the

price of whole wheat bread by shifting some of his or her budget to vegetables, the C-CPI-U would take account of that change.

Because this index is likely to rise less rapidly than the CPI-W, it is often suggested that part of Social Security's long-run financing problem could be eliminated by using the chain index to determine COLA adjustments. Such a reform tends to be opposed less vigorously by advocates for the Social Security system than other money-saving reforms, such as changing the full retirement age. Between December 2000 and December 2008, the C-CPI-U rose 0.3 percent per year less than the CPI-W.

There is, however, a practical problem involved in switching to a chain index. It takes time for the BLS to collect and process survey information. Consequently, they first publish an initial index based on preliminary information and a lot of assumptions. It is published one month after the month being measured. They then partially update the data and publish an interim version for all months of the previous year one month after the year ends. Finally, a third, or final, version is based on more complete data and is released about 14 months after the end of the year.

The time lags in collecting data create complications, but they do not present an insurmountable problem (CBO 2010). The COLA could be based on the initial version of the index. Suppose we define 2012 to be a base year and imagine someone receiving a benefit of \$1,000 per month in that year. Based on the initial version of the chained CPI, inflation is measured at 5.4 percent between 2012 and 2014. The recipient is informed that he or she will be getting a benefit of \$1,054 in 2015. When additional data come in, it is determined that the person would have received \$1,056 per month if the interim estimate had been used. That is to say, the new estimate of inflation is 5.6 percent.

“Because a chain index is likely to rise less rapidly than the CPI-W, it is often suggested that part of Social Security's long-run financing problem could be eliminated by using it to determine COLA adjustments. Such a reform tends to be opposed less vigorously than other money-saving reforms, such as changing the full retirement age.”

In the next year, the initial estimate indicates that the C-CPI-U went up 8.1 percent from 2012 to 2015. That is to say, the inflation rate between 2014 and 2015 is measured at about 2.4 percent given the interim price index used for the former and the initial price index for the latter year. The recipient would then get \$1,081 in 2016. Note that although the inflation rate is measured at 2.4 percent, the person actually gets a COLA of almost 2.6 percent. In other words, there is a correction for the underpayment in 2015. Social Security recipients may complain about this approach, because the initial cost-of-living estimate has typically been lower than if the final estimate had been used. For the period 2002 through 2008, the COLA based on the initial estimates would have averaged 0.35 percentage points lower than if the final estimates had been used. The BLS is working on reducing this discrepancy.

The problems caused by the time lags in producing an accurate C-CPI-U could be circumvented by just subtracting a constant amount from the CPI-W where the subtraction was designed to estimate its upward bias. However, this would not be very satisfactory, because the upward bias varies from period to period and a constant subtraction would be a very crude approximation.

It has also been suggested that some constant amount be subtracted from the CPI-W, just as a means of saving money without claiming that the subtraction is related to the upward bias in current COLA adjustments. Compared to other approaches to improving the financial sustainability of the Social Security system, this option saves money quickly and would have a larger immediate impact on the unified budget deficit than would a gradual increase in the full retirement age or an indexing reform that would slow down the increase in initial benefits (Program on Retirement Policy 2010a). However, the effect of the lower COLA cumulates over

Table 1. Selected Expenditure Groups in Alternative CPI Measures, December 2009, percent

EXPENDITURE GROUPS	CPI-U	CPI-W	CPI-E
All items	100.00	100.00	100.00
Food and beverages	14.80	16.43	12.35
Food at home	7.80	8.90	7.16
Food away from home	5.94	6.43	4.37
Alcoholic beverages	1.06	1.09	0.82
Housing	41.96	39.75	47.08
Shelter	32.29	30.17	36.55
Rent	5.97	8.48	3.77
Owners' equivalent rent	25.21	20.96	31.52
Apparel	3.70	3.79	2.65
Transportation	16.69	18.65	14.22
Medical care	6.51	5.26	11.07
Medical care commodities	1.61	1.30	2.95
Medical care services	4.90	3.96	8.12
Recreation	6.44	6.03	5.53
Education and communication	6.43	6.18	3.91
College tuition and fees	1.49	0.96	0.55
Other goods and services	3.48	3.92	3.19
Tobacco and smoking products	0.87	1.40	0.59

Source: BLS (2010d).
Note: Expenditures are based on 2007–2008 Consumer Expenditure Survey weights.

time: it is particularly burdensome for the oldest recipients who have been in the system for the longest time (Program on Retirement Policy 2010b).

A Special CPI for the Elderly

It is often claimed that the cost of living for the elderly rises more rapidly than that for the younger population, primarily because the elderly spend more on health care whose costs are rising much more rapidly than the prices

of other goods and services. In response, the BLS has created an experimental index called the CPI-E (BLS 2010d). It is based on the purchasing habits of households in the urban population whose head is 62 or older.

Table 1 shows the shares of the typical elderly household's budget spent on major categories in the Consumer Expenditure Survey in December 2009 and compares them to the shares spent by the sample of the urban population that underlies the

Table 2. Percentage Changes in the CPI-U, CPI-W, and CPI-E by Major Expenditure Group, December 1997–December 2009

EXPENDITURE GROUPS	CPI-U	CPI-W	CPI-E
All items	33.9	33.8	36.1
Food and beverages	37.1	37.0	36.3
Food at home	34.0	34.0	34.5
Food away from home	41.4	41.5	40.1
Alcoholic beverages	35.4	36.8	32.6
Housing	36.7	37.4	37.3
Shelter	39.2	39.8	38.0
Rent	47.2	46.6	46.2
Owners' equivalent rent	39.0	38.2	39.2
Apparel	-9.3	-8.7	-9.3
Transportation	31.5	31.2	32.4
Medical care	60.1	60.8	60.0
Medical care commodities	42.2	40.0	45.7
Medical care services	66.0	67.1	65.9
Recreation	13.2	9.9	21.1
Education and communication	28.9	24.2	11.2
College tuition and fees	107.8	109.5	111.2
Other goods and services	64.0	78.0	57.5
Tobacco and smoking products	212.0	214.5	209.2

Source: BLS (2010d).

CPI-U and the sample of wage earners and clerical workers that underlies the CPI-W, the index used for adjusting Social Security benefits. It is indeed true that the elderly sample spends a much greater share of its budget on health care than those in either the CPI-U or CPI-W sample—11.07 percent compared to 5.26 percent spent by the CPI-W sample and 6.51 percent spent by those represented by the CPI-U. Table 2 shows that the price of medical care went up 60 percent for the elderly

between December 1997 and December 2009 compared to an overall rise in the CPI-E of 36.1 percent.

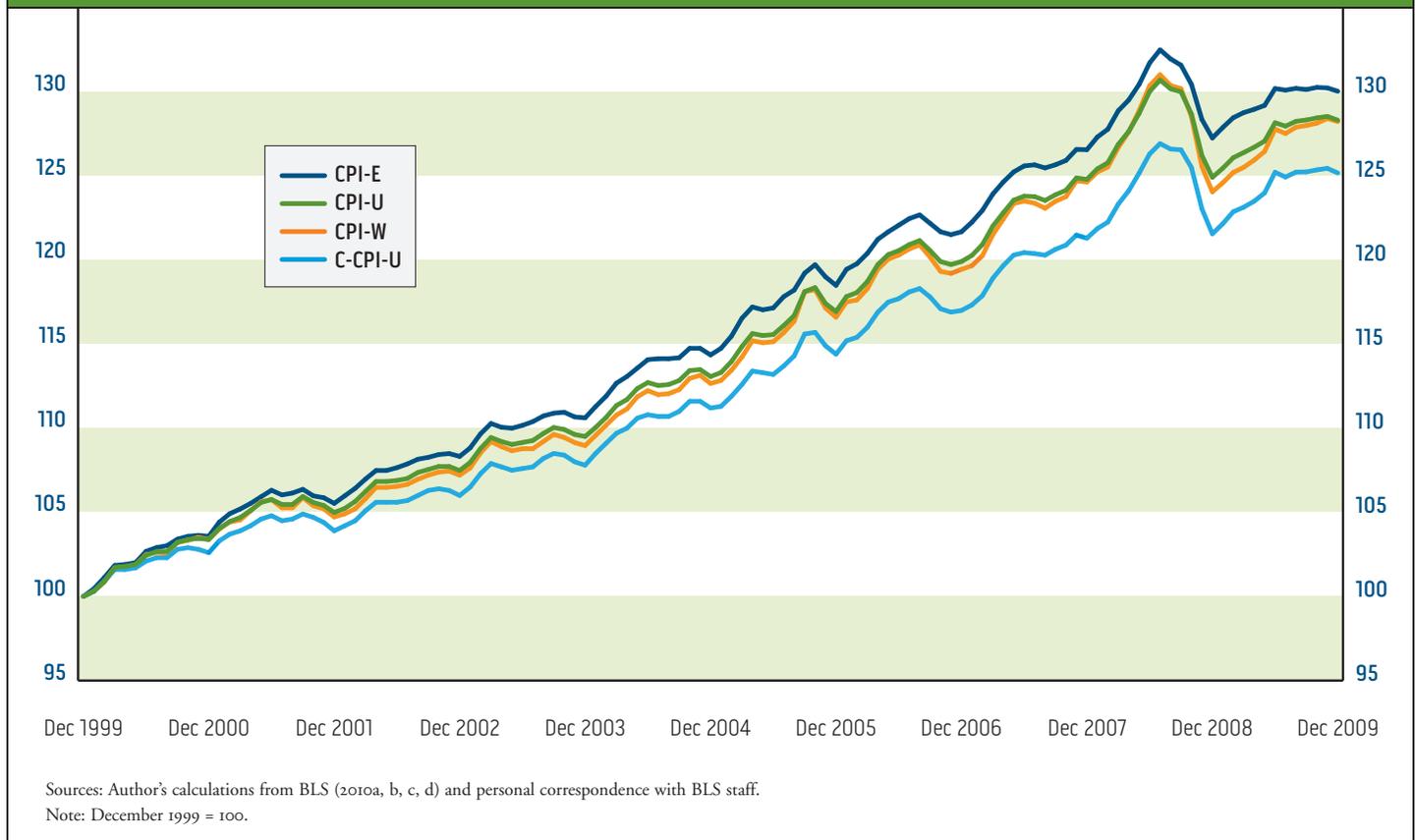
But table 2 also shows that the CPI-E went up only slightly more than the CPI-U and CPI-W—36.1 percent compared to 33.9 and 33.8 percent. The rate of inflation measured by the CPI-E is only 0.1 percent per year greater than those indicated by the CPI-W and the CPI-U. Even though the elderly spend a higher proportion of their budget on

health care than the rest of the population, the share, at 11.07 percent, is still pretty small (see table 1). It may become even smaller as a result of the recently passed health reform, which provides some extra benefits for the elderly and will reduce the costs of prescription drugs for heavy users. The largest share of all budgets is spent on housing, and the housing price increases in all three indices were almost identical. That tended to drag the total indices together.

Obviously, there being only a small difference in the increases in the CPI-E and the other measures of inflation in the December 1997–December 2009 period does not mean that the differences will be small forever or even that the CPI-E must inevitably rise faster than the CPI-W or the CPI-U. For example, the elderly spend a somewhat greater share of their budget on housing than does the younger population. A housing bust that depresses rental equivalent values will hold down the CPI-E more than it holds down the CPI-U or CPI-W. Conversely, the elderly spend considerably less on transportation than the younger population. They will, therefore, be hit less hard than the younger population by a rise in transportation costs related, say, to a spike in oil prices.

The significance of health costs in the CPI-E makes it important to understand how the BLS measures health costs (BLS 2010e). Most elderly do not pay health care costs directly, but instead buy insurance that then pays for health costs. Those 65 and over typically participate in Medicare and pay premiums for Part B insurance that compensates doctors, Part D insurance that pays for prescription drugs, and Medigap private insurance that covers most Medicare deductibles and cost sharing. The BLS cannot consider an increase in an insurance premium to be the equivalent to an increase in price, because premium increases often reflect not only increases in the price of goods and services

Figure 1. Consumer Price Index Measures, 1999–2009



but also increases in the quantity and quality of health care services that are demanded. In health care, the creation of new products and improvements in old ones have generated new demands that have had a particularly large impact on health costs.

The BLS, therefore, looks through the insurance premium and prices the goods and services that insurance buys. For example, it looks at the cost of a doctor visit, the prices of individual prescription and over-the-counter drugs, the cost of a hospital stay, and so on. The cost of insurance premiums only enters the calculation to the extent that premium increases reflect increases in the administrative costs of insurance companies and their profits.

That still leaves the problem of accounting for quality changes and the associated

new products that have so improved the effectiveness of health care and contributed to large increases in expected life. To the extent that such things enter COLAs, the “cost of living” takes on a very literal meaning.

Adjusting for changes in the quality of health care creates all the same problems as adjusting for quality changes in other fields, but they may be more important in health than elsewhere. New products in health are handled in the same way as they are in fields like consumer electronics, but it may be an insurmountable challenge to adjust the price of a doctor’s visit to reflect that doctors now possess more useful knowledge than they used to.

If we were to use the CPI-E to adjust Social Security benefits and if we failed to adjust it

more accurately for improvements in the quality of health care and new health products, we would be making a value judgment that seniors should be given the wherewithal to buy available quality improvements and new products in health care while also being compensated for true price increases. The same issues arise in the CPI-W that is actually used for calculating the COLA, but they are much less important because of the lower weight given health care in that index. Regardless of the index used for the COLA, it can, of course, be said more generally that to the extent that we fail to adjust for quality improvements and new products in all fields, the COLA provides enough money to buy new advances along with paying for true price increases.

Conclusions

There are three candidates for replacing the CPI-W now used to make COLA adjustments to Social Security benefits—the CPI-U, the C-CPI-U, and the CPI-E. All four indices are shown in figure 1 and it is clear that they follow each other very closely. There is little doubt that the CPI-U would be superior to the CPI-W because the latter is based on a sample of consumers that does not include any retired people. The C-CPI-U can purport to be an even better measure than the CPI-U because it provides a better measure of the cost of living. But its weights are determined by the purchases of both the old and the young. Although the CPI-E reflects the purchases of only those 62 and

above, it is not chained. Perhaps, we need a C-CPI-E, that is to say, a chained index for the elderly.

But before going to that expense, it is worth noting two problems. First, the CPI-E is based on a sample of all elderly households. Only a portion of that population receives Social Security benefits, albeit a large portion, and there are also Social Security recipients under 62. Much more important, the computation of the various CPIs depends on weighted averages of the purchases of different samples of the population and of the prices of the goods and services that they buy. Few individual consumers are average. There is, in fact, much heterogeneity in patterns of consumption depending on tastes and eco-

nomical circumstances. The differences in the cost of living facing different households are far more important than the differences between different variants of the CPI. Consequently, any COLA adjustment is bound to be very crude for most of the elderly population.

Higher benefits are, of course, better than lower benefits from the point of view of recipients and if the CPI-E continues to rise slightly faster than the CPI-W it would be beneficial for the elderly to shift to the former. But it cannot be guaranteed that the CPI-E will always rise faster than the CPI-W, so Social Security recipients should be careful what they wish for. ■

Notes

The author would like to thank Melissa Favreault, Richard Johnson, and Kenneth Stewart for useful comments while exempting them from blame for this brief's deficiencies. I am grateful to the Rockefeller Foundation for funding this brief.

1. A personal anecdote: I was working in the Ford administration at the time of the transition to President Carter. It was a good time to make housekeeping changes that might be difficult under different circumstances. My colleagues and I suggested shifting to the CPI-U for indexing Social Security and other benefits. My boss resisted. He worried that if the CPI-U went up less than the CPI-W, Republicans would forever be accused of harming the elderly.

References

- Boskin, Michael J., Ellen R. Dulberger, Robert J. Gordon, Zivi Griliches, and Dale Jorgenson. 1996. "Toward a More Accurate Measure of the Cost of Living." Final Report to the Senate Finance Committee, December 4.
- Bureau of Labor Statistics (BLS). 2010a. "Chained Consumer Price Index: All Urban Consumers (Current Series)." Washington, DC: Bureau of Labor Statistics. <http://data.bls.gov:8080/PDQ/outside.jsp?survey=su>.
- . 2010b. "Consumer Price Index: All Urban Consumers (Current Series)." Washington, DC: Bureau of Labor Statistics. <http://data.bls.gov:8080/PDQ/outside.jsp?survey=cu>.
- . 2010c. "Consumer Price Index: Urban Wage Earners and Clerical Workers (Current Series)." Washington, DC: Bureau of Labor Statistics. <http://data.bls.gov:8080/PDQ/outside.jsp?survey=cw>.
- . 2010d. "Experimental Consumer Price Index for Americans 62 Years of Age and Older, 1998–2009." Washington, DC: Bureau of Labor Statistics. <http://www.bls.gov/cpi/cpieart2009.pdf>.

———. 2010e. "Measuring Price Change for Medical Care in the CPI." Washington, DC: Bureau of Labor Statistics. <http://www.bls.gov/cpi/cpifact4.htm>.

Congressional Budget Office (CBO). 2010. "Using a Different Measure of Inflation for Indexing Federal Programs and the Tax Code." Washington, DC: Congressional Budget Office.

Johnson, David S., Stephen B. Reed, and Kenneth J. Stewart. 2006. "Price Measurement in the United States: A Decade after the Boskin Report." *Monthly Labor Review* May: 10–19.

Program on Retirement Policy. 2010a. "Option: Reduce Annual Cost-of-Living Adjustment (COLA) by One Percentage Point, Effective 2010." Washington, DC: The Urban Institute. http://www.urban.org/retirement_policy/upload/COLA.pdf.

———. 2010b. "Reducing Cost-of-Living Adjustments (COLA)." Washington, DC: The Urban Institute. http://www.urban.org/retirement_policy/sscola.cfm.

URBAN INSTITUTE
2100 M Street, NW
Washington, DC 20037-1231

return service requested

Nonprofit Org.
U.S. Postage PAID
Easton, MD
Permit No. 8098

About the Author

Rudolph G. Penner is an institute fellow and holds the Arjay and Frances Miller Chair in Public Policy at the Urban Institute. He was director of the Congressional Budget Office from 1983 to 1987.

Program on Retirement Policy

www.retirementpolicy.org

The Program on Retirement Policy addresses how current and proposed retirement policies, demographic trends, and private-sector practices affect the well-being of older individuals, the economy, and government budgets.

Copyright © July 2010

The views expressed are those of the author and do not necessarily reflect those of the Urban Institute, its trustees, or its funders. Permission is granted for reproduction of this document, with attribution to the Urban Institute.

URBAN INSTITUTE
2100 M Street, NW
Washington, DC 20037-1231
(202) 833-7200
paffairs@urban.org www.urban.org