Congressional Budget Office

Testimony

Using the Chained CPI to Index Social Security, Other Federal Programs, and the Tax Code for Inflation

Jeffrey Kling
Associate Director for Economic Analysis

Before the
Subcommittee on Social Security
Committee on Ways and Means
U.S. House of Representatives

April 18, 2013

This document is embargoed until it is delivered at 9:30 a.m. (EDT) on Thursday, April 18, 2013. The contents may not be published, transmitted, or otherwise communicated by any print, broadcast, or electronic media before that time.

Contents

Table

Figures

Chairman Johnson, Ranking Member Becerra, and Members of the Subcommittee, thank you for inviting me to testify this morning. As you know, Social Security law tries to protect beneficiaries from the effects of rising prices by specifying that a beneficiary's monthly payment be automatically adjusted each year for inflation, as measured by the change in a consumer price index. Similar adjustments occur in many other federal programs and many parts of the tax code. Without such indexing, a rise in the general level of prices would alter the effects of federal policies even in the absence of action by lawmakers.

My statement focuses on four questions about indexing:[1]

- How does the chained consumer price index (CPI) differ from the traditional consumer price index?
- What would be the budgetary effects of using the chained CPI to make automatic adjustments in Social Security, other federal programs, and the tax code?
- How could such a change be implemented?
- How do measures of inflation for specific populations differ from overall measures?

Changing the measure of inflation used for indexing is only one of many possible modifications to federal policy for Social Security, other programs, and the tax code. If the Congress wishes to slow the growth of federal spending by constraining outlays for Social Security benefits, or to improve the long-term solvency of the program by making changes to its spending or revenues, many other approaches are possible. Other changes to Social Security benefits and taxes would affect the federal budget and individuals in different ways, as the Congressional Budget Office (CBO) discussed in *Social Security Policy Options* (July 2010); possible changes to a broad array of federal tax provisions and spending programs were analyzed by CBO in *Reducing the Deficit: Spending and Revenue Options* (March 2011).

Summary

Cost-of-living adjustments (COLAs) for Social Security benefits and other parameters of many federal programs and the tax code are currently indexed to increases in the traditional CPI, a measure of overall inflation calculated by the Bureau of Labor Statistics (BLS). According to many analysts, however, the CPI overstates increases in the cost of living because it does not fully account for the fact that consumers generally adjust their spending patterns as some prices change relative to other prices and because of a statistical bias related to the limited amount of price data that BLS can collect. One option for lawmakers would be to link federal benefit programs and tax provisions to another measure of inflation—the chained CPI—that is designed to account fully for changes in spending patterns and that does not have the same statistical bias.

The chained CPI grows more slowly than the traditional CPI does: an average of about 0.25 percentage points more slowly per year over the past decade. As a result, using that measure to index benefit programs would reduce federal spending for Social Security, federal employees' pensions, Medicare, Medicaid, and various other programs. For example, if such a proposal took effect next year, Social Security benefits would be roughly $30 a month lower, on average, by 2023 than they would be under current law, representing a reduction of about 2 percent of average benefits. (Depending on when they started receiving benefits, some people would see a greater percentage reduction and others a smaller one.) In addition, indexing tax provisions with the chained CPI would increase revenues.

If all uses of the traditional CPI in mandatory programs and the tax code were switched to the chained CPI starting in calendar year 2014, mandatory spending would be reduced by a total of $216 billion between fiscal years 2014 and 2023, and federal revenues would be increased by $124 billion. (The President's budget for fiscal year 2014 includes a related but less comprehensive option that would use the chained CPI for Social Security and some other spending programs as well as for the tax system. CBO is currently reviewing that and other proposals in the President's budget.)

Although many analysts consider the chained CPI to be a more accurate measure of the cost of living than the traditional CPI, using it for indexing could have disadvantages. The values of the chained CPI are revised over a period of several years, so affected programs and the tax code would have to be indexed to a preliminary estimate of the chained CPI that is subject to estimation

1. This document updates earlier work by CBO about the chained CPI-U; see Congressional Budget Office, *Using a Different Measure of Inflation for Indexing Federal Programs and the Tax Code* (February 2010), www.cbo.gov/publication/21228.

error. Also, the chained CPI may understate growth in the cost of living for some groups. For instance, some evidence indicates that the cost of living grows at a faster rate for the elderly than for younger people, in part because changes in health care prices play a disproportionate role in older people's cost of living. However, determining the impact of rising health care prices on the cost of someone's standard of living is problematic because it is difficult to measure the prices that individuals actually pay and to accurately account for changes in the quality of health care.

Inflation and Changes in the Cost of Living

Inflation—a general increase in the prices of goods and services—can be measured in various ways. Traditionally, the rate of inflation has been computed by multiplying the percentage price change for each item that people purchase by that item's share of consumer spending in a period before the prices changed and then adding up those changes for all items. In a simplified example, imagine that people bought only two things last year, food and clothing, and that they divided their spending evenly between the two. If the price of food rose by 4 percent this year and the price of clothing rose by 7 percent, inflation this year would be measured as (0.04 x 0.50) + (0.07 x 0.50) = 0.055, or 5.5 percent. Such price increases would reduce consumers' purchasing power (unless their income and wealth rose accordingly).

The actual growth in the cost of living, however—the amount of additional resources that someone would need to maintain the same standard of living this year as last year in the face of rising prices—is generally lower than the rate of inflation as measured above. The reason for the difference is that many people can lessen the impact of inflation on their standard of living by purchasing fewer goods or services that have risen in price and, instead, buying more goods or services that have not risen in price or have risen less.

How people substitute one good for another when prices change generally depends on the change in the relative prices of the goods (whether one item is becoming more or less expensive relative to another) rather than on the absolute price levels of the two goods (whether one item is more or less expensive than another). The importance of changes in relative prices in consumer decisionmaking means that people do not necessarily shift to lower-priced goods. If the price difference between two items narrows, consumers will tend to buy more of the more expensive one. A common example involves hamburger and steak. If the prices of both items rise, consumers will shift their spending toward the one whose price rises by a smaller percentage: If the price of hamburger increases more than the price of steak does, people will purchase more steak. Similarly, consumers will generally buy more fresh vegetables and fewer canned ones when the price difference between the two narrows.

To be sure, increases in the general price level that exceed increases in income and wealth lower consumers' standard of living. But the resulting decline in their standard of living is usually smaller than it would be if substitution were not possible. Thus, measures of inflation that do not account for such substitution overstate growth in the cost of living—a problem known as substitution bias.

The Consumer Price Index and Some of Its Limitations

The CPI is not a true cost-of-living index because it cannot include all of the factors that affect the cost of people's standard of living, such as personal safety or water quality. But BLS's goal in computing the CPI is to estimate the growth in the cost of living by measuring the change in the cost of a "market basket" of goods and services that represents average consumer spending.[2] The market basket is based on data from BLS's Consumer Expenditure Survey, in which thousands of families report what they buy. BLS divides those purchases into 211 categories—such as breakfast cereal, rent on a primary residence, dresses, and wireless telephone services—and assigns a percentage weight to each category based on its share of consumer spending in a base period. To measure price changes, BLS chooses about 80,000 specific items (several hundred for each of the 211 expenditure categories) and checks their prices every month at selected stores and other establishments in 38 geographic regions.

2. See Bureau of Labor Statistics, *BLS Handbook of Methods* (June 2007), Chapter 17, p. 2, www.bls.gov/opub/hom/pdf/homch17.pdf (436 KB). For more information about the CPI, see Congressional Budget Office, *Explaining the Consumer Price Index* (June 2007), www.cbo.gov/publication/18772; and Bureau of Labor Statistics, "Consumer Price Index: Frequently Asked Questions" (October 19, 2011), www.bls.gov/cpi/cpifaq.htm.

On the basis of those price data, BLS constructs approximately 8,000 item-area indexes—indexes for specific goods and services in specific places, such as breakfast cereal in Chicago—and then uses them to compute various versions of the CPI.[3] All of those versions are based on the same set of item-area indexes; they differ mainly in trying to represent spending patterns for different subpopulations and in the formulas used to combine the item-area indexes into an overall estimate of price changes for the entire economy.

Two versions of the CPI are currently used to index federal programs: the consumer price index for all urban consumers (CPI-U) and the consumer price index for urban wage earners and clerical workers (CPI-W). The CPI-U is based on the spending patterns of a representative sample of people who live in urban or metropolitan areas, as do about 87 percent of U.S. residents. The CPI-W focuses on a subset of the CPI-U sample: households that include clerical workers, sales workers, laborers, or certain other types of nonprofessional employees. The the CPI-W sample represents about 32 percent of U.S. residents.

The two versions of the CPI produce similar estimates of inflation. Over the past 20 years, inflation as measured by both the CPI-W and the CPI-U has averaged 2.45 percent a year. CBO expects that the two measures will continue to grow at about the same rate as each other.

The methodology currently used to calculate the CPI-U and CPI-W suffers from at least two drawbacks—substitution bias and small-sample bias. Both of those drawbacks cause traditional versions of the CPI to grow more quickly than the chained CPI-U, an improved measure of overall inflation developed by BLS that is discussed below. Substitution bias has been recognized by economists for many years; small-sample bias has also been known for some time, but until recently, it has received little attention.[4]

Substitution Bias

Every two years, BLS uses new data from the Consumer Expenditure Survey to update the share of consumer spending devoted to each of the 211 categories in the market basket. As a result, at any given time, the CPI is based on spending patterns from two to four years earlier. For example, the monthly values of the CPI computed in 2010 and 2011 were based on spending data reported in the Consumer Expenditure Survey in 2007 and 2008. For the monthly values beginning in January 2012, BLS used new data to update the market basket to reflect purchases made in 2009 and 2010.

Because the CPI is based on spending patterns from a point in the past, it does not fully incorporate the effects of consumers' substitution between various goods and services when their relative prices change. Therefore, the CPI grows faster than the cost of living does. That substitution bias would exist whether the market basket was from one month ago or five years ago. However, greater periods of time between updates to the basket tend to magnify the size of the substitution bias and to cause an even larger gap between the increase in the CPI and growth in the cost of living.

BLS's current procedures for calculating the CPI account for some degree of substitution *within* most basic categories of goods and services in the market basket—such as when some consumers who previously bought large eggs switch to medium-sized eggs when the latter go on sale.[5] Current procedures for calculating the CPI do not, however, take into account shifts that occur *between* one

3. Price data are actually collected for 87 geographic regions, but they are combined into 38 regions when the item-area indexes are created.

4. One estimate suggests that small-sample bias is responsible for roughly two-thirds of the difference between the traditional and chained CPIs and that substitution bias is responsible for the other third. That estimate is highly uncertain, however, in part because the analysis used only a few years of data, and in one of those years the data were of lower quality than in the others. See Ralph Bradley, *Analytical Bias Reduction for Small Samples in the U.S. Consumer Price Index* (Bureau of Labor Statistics, Office of Survey Methods Research, September 2005), www.bls.gov/ore/abstract/st/st050290.htm. Also see Robert McClelland and Marshall Reinsdorf, *Small Sample Bias in Geometric Mean and Seasoned CPI Component Indexes,* Working Paper 324 (Bureau of Labor Statistics, August 1999), www.bls.gov/osmr/abstract/ec/ec990050.htm.

5. BLS does not use those procedures for some types of goods and services included in the CPI—such as rents, certain utilities, and medical services—because consumers cannot easily substitute one good for another within those categories. Those procedures were initially examined to correct for a problem known as formula bias; see Kenneth V. Dalton, John S. Greenlees, and Kenneth J. Stewart, "Incorporating a Geometric Mean Formula Into the CPI," *Monthly Labor Review,* vol. 121, no. 10 (October 1998), pp. 3–7, www.bls.gov/opub/mlr/1998/10/art1abs.htm; and Robert McClelland, "Evaluating Formula Bias in Various Indexes Using Simulations" (draft, Bureau of Labor Statistics, 1996), www.bls.gov/osmr/abstract/ec/ec960140.htm.

category and another. For instance, if the price of apples rises by 50 percent and the price of bananas goes up by only 10 percent, consumers will tend to buy fewer apples and more bananas. Because apples and bananas are separate categories in the CPI market basket, the index does not account for the effects of such substitution. As a result, it overstates the amount by which consumers' well-being declines when prices rise and understates the benefit of reductions in prices.

Small-Sample Bias

The traditional CPI also suffers from a statistical bias that occurs because the index is calculated using prices for only a small portion of the items in the economy. BLS produces an inflation index for an item in a specific region—such as cheese in the Kansas City area—by averaging the growth rates of a sample of prices for that item in that locale. BLS then computes the geometric average of the change in those prices.[6] When the sample of prices is large, the geometric average of the price changes in that sample can be expected to be very close to—but slightly higher than—the geometric average of all price changes for that item in that region. When the sample size is smaller, that upward bias is larger.[7]

Although there can be thousands of prices for items in each geographic area, BLS creates the item-area indexes using, on average, prices of only about 10 examples of an item. Such a small sample creates a measurable upward bias in those indexes. Because the traditional CPI is calculated as an arithmetic average of those indexes (and the arithmetic average is unbiased), any bias contained in the item-area indexes carries through to the overall CPI.

Small-sample bias in the traditional CPI could be reduced by increasing the sample of prices collected or by attempting to estimate and adjust for the effect. Increasing the size of the sample, however, would require additional spending for data collection. Initial research has been conducted into statistical methods that could possibly adjust for small-sample bias directly, but those methods have never been implemented for the item-area indexes.[8]

An Alternative Measure: The Chained CPI-U

BLS has developed—and has been using for more than a decade—another approach to measuring price increases that avoids both substitution bias and small-sample bias. Since August 2002, BLS has published an alternative index, the chained CPI-U, which attempts to account for the effects of substitution on changes in the cost of living.[9] The chained CPI-U provides a more accurate estimate of changes in the cost of living from one month to the next by using market baskets from both months, thus "chaining" the two months together.[10]

The chained CPI-U is also largely free of small-sample bias because of the way in which it is computed. Both the traditional CPI and the chained CPI-U are based on the same item-area indexes, which are calculated using a geometric average. To combine those indexes into an overall estimate of price growth in the United States, however, BLS uses a geometric-average formula for the chained CPI-U, as opposed to an arithmetic-average formula for the traditional CPI. The use of a geometric-average formula to combine the item-area indexes effectively makes the number of elements in the geometric average much larger, which essentially eliminates small-sample bias.

6. Whereas an arithmetic average is obtained by adding a set of values and then dividing the sum by the number of values in the set (n), a geometric average is obtained by multiplying the values and then taking the nth root of the product. For example, the geometric average of two numbers is the square root of the product of the two numbers. Thus, the arithmetic average of ½ and 2 is 1.25, but the geometric average is 1.

7. The small-sample bias of the geometric mean is systematically positive because of the properties of the mathematical functions used in calculating that mean.

8. See Ralph Bradley, *Analytical Bias Reduction for Small Samples in the U.S. Consumer Price Index* (Bureau of Labor Statistics, Office of Survey Methods Research, September 2005), www.bls.gov/ore/abstract/st/st050290.htm.

9. Although BLS began publishing the chained CPI-U in 2002, it has produced monthly values for the index back to December 1999. For more information about the chained CPI-U, see Bureau of Labor Statistics, "Frequently Asked Questions About the Chained Consumer Price Index for All Urban Consumers (C-CPI-U)" (April 6, 2005), www.bls.gov/cpi/cpisupqa.htm; and Julie M. Whittaker, *The Chained Consumer Price Index: What Is It and Would It Be Appropriate for Cost-of-Living Adjustments?* Report for Congress RL32293 (Congressional Research Service, April 5, 2013).

10. Another chained measure of prices is the price index for personal consumption expenditures, which the Bureau of Economic Analysis constructs as part of the national income and product accounts.

Estimates of Differences Between Traditional and Chained Indexes

The chained CPI-U results in lower estimates of inflation than the traditional CPI does. CBO expects that annual inflation as measured by the chained CPI-U will be about 0.25 percentage points lower, on average, than annual inflation as measured by the traditional CPI. That estimate is based in part on the observed past differences between the chained CPI-U and the traditional CPI-U and CPI-W. Although the traditional CPI-U and CPI-W have produced very similar average estimates of inflation over long periods, the CPI-W tends to be more volatile over short periods because it is based on a smaller sample. Thus, in the future, CBO expects inflation as measured by the CPI-U to be the same, on average, as inflation as measured by the CPI-W even though such inflation estimates differed by 0.05 percentage points during the period in which the chained CPI-U is available for comparison. Because of that long-term similarity, CBO has relied primarily on differences between the traditional CPI-U and the chained CPI-U to forecast future changes in both the traditional CPI-U and CPI-W relative to changes in the chained CPI-U.

From 2001 through 2011, the annual increase in the chained CPI-U was 0.24 percentage points lower, on average, than the increase in the traditional CPI-U.[11] Within that average, the difference between the two indexes has varied over time (see Figure 1). The difference tended to be larger early in the 2000s and smaller late in that decade, although it varied substantially from year to year even within those shorter periods. That difference has generally been smaller when overall inflation has been lower—perhaps reflecting fewer increases in the relative prices of goods and services for which consumers spend a great deal and less interest by consumers in substituting between goods and services when price increases are mostly smaller. In addition, the gap between the traditional and the chained CPI-U has generally been smaller when prices for energy have been declining and larger when those prices have been rising rapidly.

The difference between annual increases in the core CPI—which excludes food and energy prices—and its chain-weighted counterpart has been somewhat less volatile than the difference between increases in the overall versions of the traditional and chained CPI-U and has shown less of a trend over time. However, the average difference for those core measures over the 2001–2011 period was very close to the average difference for the overall indexes: about 0.25 percentage points.

Revisions to the Chained Index

A drawback of the chained CPI-U is that it requires new data each month on changes in consumers' spending patterns from the Consumer Expenditure Survey. Those data do not become available for some time, so BLS releases preliminary estimates of the chained CPI-U and revises them over the following two years.

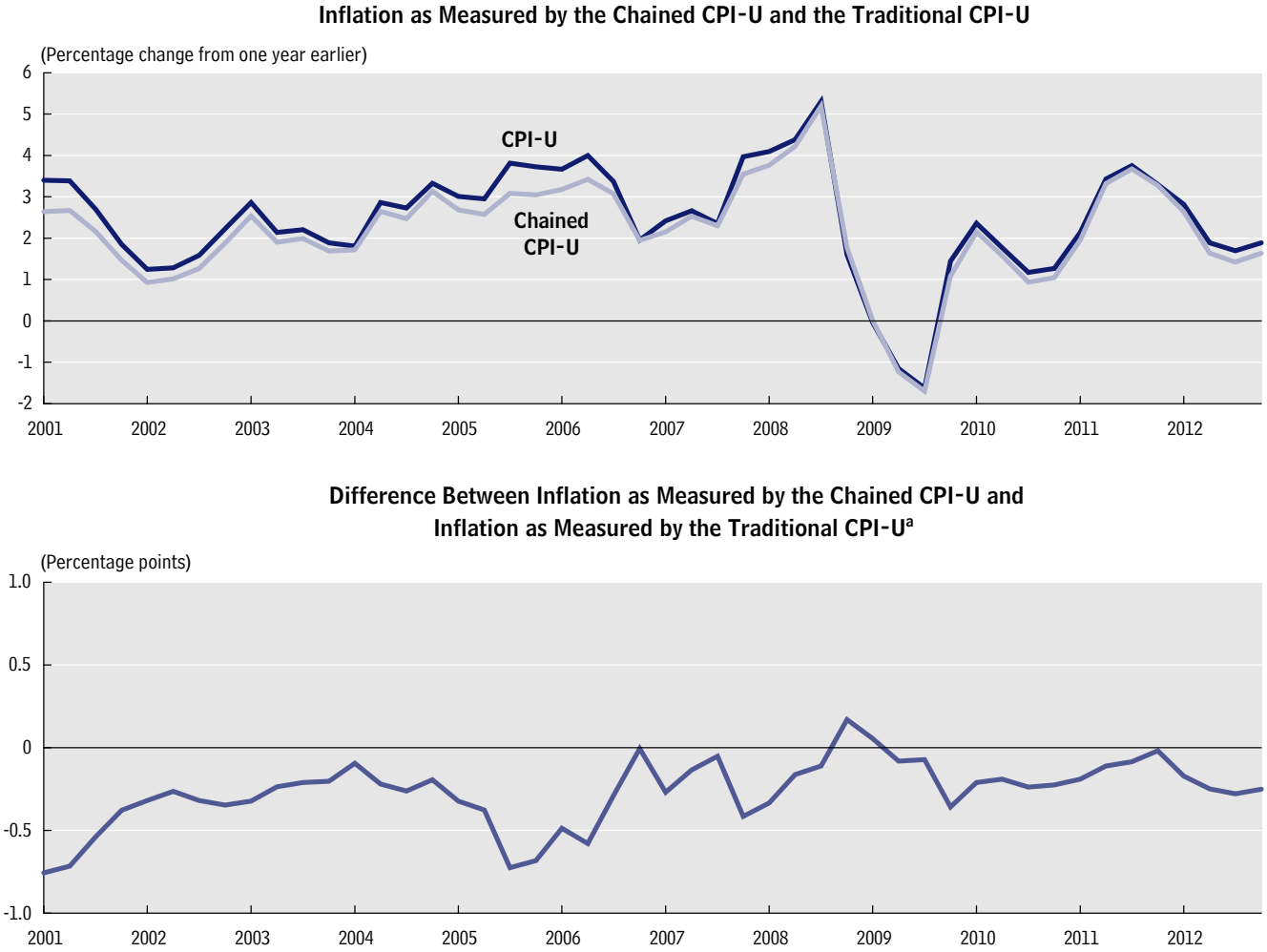
Specifically, for each month, BLS releases estimates of the chained CPI-U at three points in time. The *initial* estimate is published a few weeks after the end of the month for which price changes are being measured, at the same time as the traditional CPI. Because of the time required to collect and process the spending data, that estimate is based on data about consumers' spending patterns that are at least two years old. *Interim* estimates of the chained CPI-U are published each February for all months in the previous year, and *final* values for that year are released the following February. For example, an initial estimate of the chained CPI-U for January 2011 was released in February 2011; interim estimates for January 2011 through December 2011 were released in February 2012; and final values for all months in 2011 were published in February 2013. By contrast, the values of the traditional CPI that are currently used to index federal programs are not revised.[12]

11. Although data for the chained CPI-U go back to December 1999, some anomalous weighting issues involving the traditional CPI occurred in 2000 that make comparing the two indexes before 2001 problematic. For details, see Owen J. Shoemaker, *Analysis of Divergence Between Chained CPI-U and Regular CPI-U for the All_US-All_Items Indexes (2000-2002)* (Bureau of Labor Statistics, 2004), www.bls.gov/osmr/abstract/st/st040050.htm. In addition, although data for the chained CPI-U are available through March 2013, final values for that index are available only through 2011, as discussed below. (The 2012 values for that index used in Figure 1 are interim values.)

12. BLS also publishes estimates of the CPI that are adjusted to remove the effects of seasonal influences (such as the fact that although oranges are available year-round, they are much more expensive in the summer, when they are out of season). The seasonally adjusted values of the CPI are revised, but those values are not used to index federal programs.

Figure 1.

Comparison of the Chained CPI-U and the Traditional CPI-U



Source: Congressional Budget Office based on data from the Bureau of Labor Statistics.

Notes: Data are quarterly and are plotted through the fourth quarter of calendar year 2012. The 2012 values of the chained CPI-U used to estimate inflation are interim values.

CPI-U = consumer price index for all urban consumers.

a. In this panel, negative numbers indicate that inflation as measured by the chained CPI-U was lower than inflation as measured by the traditional CPI-U.

Using the Chained CPI-U to Index Social Security, Other Federal Programs, and the Tax Code

The purpose of indexing Social Security and other federal benefits for inflation is to prevent the purchasing power of those benefits from eroding over time as prices rise. Similarly, the purpose of indexing parameters of the tax code is to tax similar amounts of real (inflation-adjusted) income at roughly the same rates over time.

Cost-of-living adjustments for Social Security are based on changes in the CPI-W. A person's initial Social Security benefits are determined primarily by that individual's lifetime earnings and the past growth of wages nationwide.[13] Benefits increase annually by a COLA (except when the CPI-W declines). The adjustment is applied to December benefits, which are sent to recipients in January, and reflects growth in the CPI-W from the third quarter of the previous year to the third quarter of the current year.[14] (Data for September, the final month of the third quarter, become available in October.) For example, the 1.7 percent COLA that applied to benefits paid in January 2013 was based on the increase in the CPI-W between the third quarters of 2011 and 2012.

Growth in the CPI affects spending for numerous other federal programs as well. For example, COLAs for federal employees' pension benefits are based on the CPI-W, and the federal poverty guidelines—income thresholds that are used to determine eligibility for many programs aimed at lower-income people—are indexed to the CPI-U.

Parameters of the tax code that are indexed for inflation include the amounts of various exemptions and deductions; the income thresholds that divide the rate brackets for the individual income tax and the alternative minimum tax; the maximum size of tax-deductible contributions to retirement accounts; and the phaseout thresholds for various exemptions, deductions, and credits. If those values were not indexed, average tax rates would gradually rise as the effects of inflation boosted people's income, pushing them into higher tax brackets and reducing their eligibility for various exemptions, deductions, and credits.[15] All of those parameters are indexed by adjusting them for the growth in the average monthly CPI-U between a base year (which runs from September through August) and the most recent September-to-August period.[16]

An alternative to current law would be to index federal programs and the tax system to the chained CPI-U rather than the traditional CPI-U or the CPI-W. In programs that use components of the CPI for indexing (such as the CPI for medical care), the chained versions of those components could be used. Because the chained CPI-U generally grows more slowly than the traditional CPI does, such a change would reduce federal outlays and increase federal revenues.

For Social Security, that policy change would not alter the size of people's benefits when they are first eligible, either now or in the future, but it would reduce their benefits in subsequent years because of the reduction in the average COLA. The impact would be greater the longer people received benefits (that is, the more reduced COLAs they experienced). For example, after a year, the Social Security benefits paid to a 63-year-old who had claimed initial retirement benefits at age 62 would be about 0.25 percent lower, on average, if the chained CPI-U was used for indexing instead of the CPI-W, CBO estimates. After 10 years of COLAs, the effect for a 73-year-old would be 2.5 percent, on average; after 30 years of COLAs, the effect for a 93-year-old would be 7.2 percent, on average.[17] The impact would be especially large for some

13. For details, see Congressional Budget Office, *Social Security Policy Options* (July 2010), pp. 2–3, www.cbo.gov/publication/21547. Prior to eligibility, initial benefits are indexed to the average level of earnings in the economy rather than to the CPI. However, between the time someone becomes eligible for benefits (in the case of a retired worker, at age 62) and the time those benefits are claimed, initial benefit amounts are indexed to the CPI-W.

14. If the resulting adjustment is negative, no COLA is given. The next COLA occurs when the CPI-W for the third quarter of the calendar year exceeds the CPI-W for the third quarter of the last year in which an adjustment occurred. For details, see Social Security Administration, "Latest Cost-of-Living Adjustment" (October 16, 2012), www.ssa.gov/oact/cola/latestCOLA.html.

15. Even with indexing, average tax rates tend to increase over time as the real growth of income (growth above and beyond the effects of inflation) pushes taxpayers into higher tax brackets.

16. September-to-August averages are used instead of calendar year averages because they allow enough time to incorporate the new dollar amounts for indexed parameters into tax forms for the coming year.

17. The effect after 30 years is slightly less than three times as large as the effect after 10 years because in later years, the lower COLA applies to benefits that have already been reduced.

disabled beneficiaries; they generally become eligible for Social Security benefits before age 62 and thus can receive COLAs for a longer period.

To protect certain people from those reductions in benefits relative to current law, lawmakers might choose to continue to base COLAs on the traditional CPI for beneficiaries whose income or benefits are less than specified amounts or who have received benefits for a long period. Alternatively, lawmakers could compensate those beneficiaries in some other way for a reduction in COLAs. For example, the President's budget request for 2014 proposes raising Social Security benefits for certain groups and excludes some programs (such as Supplemental Security Income and the Supplemental Nutrition Assistance Program) from changing to the chained CPI-U for indexing.

Budgetary Effects

CBO and the staff of the Joint Committee on Taxation estimate that switching to the chained CPI-U on a governmentwide basis starting in calendar year 2014 would reduce the deficit by a total of $340 billion over the next 10 years (see Table 1). Such a change would decrease federal spending on mandatory programs (direct spending) by $216 billion and increase federal revenues by $124 billion over the fiscal year 2014–2023 period.

A little more than half of the reduction in spending would be for Social Security. According to CBO's analysis, using the chained CPI-U for annual COLAs would reduce outlays for Social Security (relative to CBO's current-law baseline) by $1.6 billion in 2014. Those savings would grow each year, reaching $24.8 billion in 2023, and would total $127 billion over the 2014–2023 period. CBO projects that Social Security recipients would face an average benefit reduction of 0.25 percent in 2014 (about $3 per person per month) and approximately 2 percent in 2023 (roughly $30 per person per month). That estimated average reduction in 2023 reflects larger percentage cuts (of up to 2.5 percent) for people who are already receiving benefits today or will become eligible for them shortly (and who thus would have experienced smaller COLAs for nearly a decade by 2023) and smaller cuts for people who will become eligible for benefits later (and thus would have experienced smaller COLAs for a shorter period of time in 2023). By 2033, outlays for Social Security would be 3 percent lower than they would be under current law, or 6.0 percent of gross domestic product (GDP) rather than 6.2 percent.[18] As a result, the gap between Social Security's outlays and tax revenues in that year would shrink by about one-sixth, to 1.0 percent of GDP.

Switching to the chained CPI-U governmentwide would also lower benefits in other programs that apply automatic COLAs, including civil service and military retirement, Supplemental Security Income, and veterans' programs. In addition, the change would reduce federal spending for Medicaid, Medicare, higher education assistance, and nutrition programs, among other mandatory programs. In the case of certain means-tested programs, such as Medicaid and nutrition assistance, those reductions would occur in part because using the chained CPI-U to make annual adjustments to the federal poverty guidelines would decrease eligibility for those programs.

The impact of using the chained CPI-U would vary among participants in the affected programs. Where the index was used to inflate a benefit or payment level, such as with Social Security, all program participants would receive a lower benefit than they would under current law. Where the chained CPI-U was used to inflate a threshold, such as the federal poverty guidelines, there would be a large effect on participants who lost eligibility for certain benefits but no effect on other program participants.

In the case of Medicare, for example, switching to the chained CPI-U would affect both payment rates and thresholds for means-tested elements of the program. CBO estimates that such a policy would reduce net Medicare spending per beneficiary by an average of roughly $3 per month in 2023. Of that amount, about $2 per beneficiary, on average, would reflect reductions in payments to providers and plans for services furnished to beneficiaries; those reductions would affect payments for services furnished to most beneficiaries. The remaining reduction of roughly $1 per beneficiary, on average, would stem from two factors: First, roughly half a million beneficiaries would see their premiums for Parts B and D of Medicare increase by up to $125 per month because they would become subject to higher premiums on the basis of their income. Second, Medicare spending would be reduced by an average of about $300 a month for

18. CBO's most recent long-term projections of Social Security outlays under current law are described in Congressional Budget Office, *The 2012 Long-Term Projections for Social Security: Additional Information* (October 2012), www.cbo.gov/publication/43648.

Table 1.

Estimated Budgetary Effects of Using the Chained CPI-U for Mandatory Programs and the Tax Code Starting in 2014

(Changes from CBO's February 2013 baseline, by fiscal year, in billions of dollars)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total, 2014-2018	Total, 2014-2023
Changes in Outlays for Direct Spending Programs												
Social Security	-1.6	-3.7	-6.0	-8.5	-11.2	-13.8	-16.5	-19.2	-22.0	-24.8	-31.0	-127.2
Other Benefit Programs With COLAs[a]	-0.5	-1.2	-2.0	-2.6	-3.1	-4.0	-4.8	-5.5	-6.6	-7.0	-9.5	-37.5
SNAP Interaction With COLA Programs[b]	*	0.1	0.1	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.7	2.8
Health Programs[c]	-0.2	-0.5	-1.0	-1.4	-2.1	-2.7	-3.8	-4.6	-5.5	-6.7	-5.2	-28.5
Refundable Tax Credits	0	-0.3	-0.6	-1.3	-1.8	-1.7	-2.4	-2.8	-3.3	-3.7	-4.1	-17.9
Other Federal Spending[d]	*	-0.2	-0.4	-0.6	-0.8	-0.9	-1.0	-1.1	-1.2	-1.3	-2.1	-7.8
Total Change in Direct Spending	-2.2	-5.9	-10.0	-14.3	-18.7	-22.9	-28.1	-32.8	-38.2	-43.0	-51.2	-216.0
Changes in Revenues												
Total Change in Revenues[e]	1.2	2.6	5.5	7.8	9.4	13.0	15.8	19.2	22.7	26.3	26.5	123.7
Net Decrease (-) in the Deficit												
Total Change in the Deficit	-3.4	-8.5	-15.4	-22.1	-28.1	-35.9	-44.0	-52.0	-60.8	-69.3	-77.7	-339.8
On-budget	-1.9	-4.8	-9.4	-13.6	-17.0	-22.1	-27.4	-32.7	-38.6	-43.9	-46.7	-211.5
Off-budget[f]	-1.6	-3.7	-6.0	-8.5	-11.1	-13.8	-16.5	-19.4	-22.3	-25.4	-31.0	-128.3

Sources: Congressional Budget Office; staff of the Joint Committee on Taxation. This estimate was first published in Congressional Budget Office, *Preliminary Estimate of the Budgetary Effects of Using the Chained CPI for Mandatory Programs and the Tax Code Starting in 2014* (March 1, 2013), www.cbo.gov/publication/43965.

Notes: These estimates reflect an assumption that the policy change is enacted by October 1, 2013. The estimates are subject to change, depending on legislative language.

Numbers may not add up to totals because of rounding.

CPI-U = consumer price index for all urban consumers; COLA = cost-of-living adjustment; SNAP = Supplemental Nutrition Assistance Program; * = between -$50 million and $50 million.

a. Includes civil service retirement, military retirement, Supplemental Security Income, veterans' pensions and compensation, and other retirement programs whose COLAs are linked directly to COLAs for Social Security or civil service retirement.

b. The policy change would reduce payments from other federal programs to people who also receive benefits from SNAP. Because SNAP benefits are based on a formula that considers such income, a decrease in those payments would lead to an increase in SNAP benefits.

c. Consists primarily of changes to various payments and collections in Medicare and Medicaid and changes in outlays associated with subsidies for health insurance purchased through exchanges and other health insurance provisions established under the Affordable Care Act. Includes the effects on health programs of using the chained CPI-U to update the federal poverty guidelines.

d. Includes changes to various benefits and levels in other federal programs, such as Pell grants and student loans, SNAP, and child nutrition programs. Also includes the effects on nonhealth programs of using the chained CPI-U to update the federal poverty guidelines.

e. Includes changes to revenues from indexing parameters of the tax code and changes in the revenue portion of refundable tax credits for health insurance purchased through exchanges, as well as other effects on revenues of the Affordable Care Act's provisions related to insurance coverage.

f. Off-budget changes reflect changes to outlays for Social Security benefits and changes to Social Security revenues.

approximately 100,000 beneficiaries who would qualify for the Part D low-income subsidy program (LIS) under current law, because those beneficiaries would receive less generous or no LIS subsidies for Part D premiums or cost sharing under the policy.

Approaches for Dealing With the Delay in Determining the Final Value of the Chained CPI-U

Switching to the chained CPI-U in government programs and the tax code would be complicated by the fact that it can take up to two years to release the final value of that index for a given month. That delay could be handled in various ways for different programs and tax provisions. For simplicity, this discussion focuses on Social Security.[19]

One approach to surmounting the delay in determining the final value of the chained CPI-U would be to base Social Security COLAs on the difference between the initial releases of the chained CPI-U from one year to the next, with no further adjustments as those initial estimates are revised. The initial value of the chained CPI-U is released at the same time as the CPI-W and CPI-U, so such a switch would be straightforward technically: In the formula for computing COLAs, the CPI-W could be replaced with the initial release of the chained CPI-U, and no additional changes would be needed. In that case, as under current law, all beneficiaries would receive the same annual cost-of-living adjustment.

However, under that approach, COLAs would not incorporate revisions to past releases of the chained CPI-U—so errors in the initial estimates of the chained CPI-U would lead to permanently lower or higher benefits for a cohort of beneficiaries (people who become entitled to benefits in the same year) than the benefits that would correspond to the best estimates of inflation. As an illustration, retired workers who turn 62 in 2015 will receive their first cost-of-living adjustment in 2016. If the chained CPI-U was adopted using this approach, that adjustment would equal the growth in the initial value of the chained CPI-U between 2014 and 2015. The second COLA for that cohort, which would affect 2017 benefits, would equal the growth in the initial value of the chained CPI-U between 2015 and 2016, and so on. Therefore, the total increase in the benefits for those workers since they began receiving COLAs would equal the difference between the *initial* 2014 value of the chained CPI-U and the most recent initial value. That difference would not be the best estimate of overall price growth over that period, however; the best estimate would be the difference between the *final* 2014 value of the chained CPI-U (which will become available in 2016) and the most recent initial value. If the initial 2014 estimate was lower than the final estimate, benefits would always be higher than they would have been without that error. Conversely, if the initial estimate was higher than the final estimate, benefits would be permanently lower.

An alternative, more complex, approach to using the chained CPI-U for Social Security would link the COLA for each cohort of beneficiaries to the most recent estimate of total inflation since that cohort became entitled to benefits. Specifically, the annual COLA for a cohort would be calculated so that the cumulative COLAs that cohort would receive since becoming entitled to benefits would equal the difference between the value of the chained CPI-U from the year before entitlement—which, after two years of entitlement, would be the final value—and the latest initial value of the chained CPI-U.

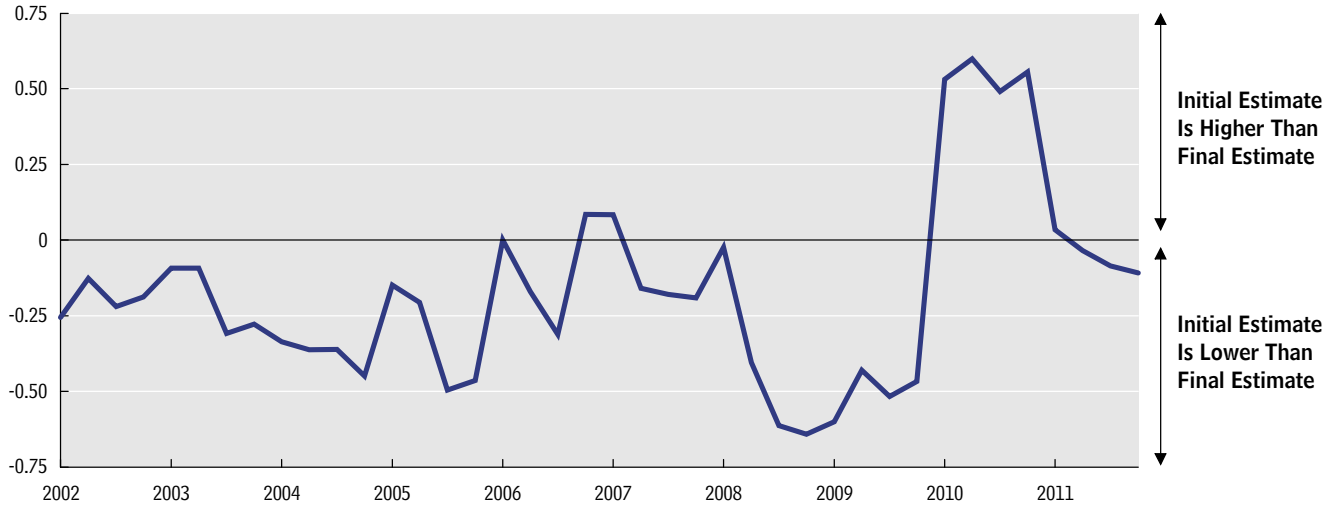
For beneficiaries who had been receiving benefits for several years, that calculation would yield COLAs that would be, perhaps surprisingly, the same as under the first approach: the difference between the initial releases of the chained CPI-U. Consider a simplified example in which the chained CPI-U is revised only once rather than twice. Suppose that the final value of the chained CPI-U for year 1 is 100, that the initial value for year 2 is 101, and that the following year that initial value is revised to 102. The COLA based on the change from year 1 to year 2 will be 1 percent, which is about 1 percentage point lower than the final change in the chained CPI-U (102/100). Now suppose the initial value for year 3 is 105. The COLA between year 2 and year 3 that will make cumulative COLAs equal to the most recent estimate of cumulative inflation since year 1 will be about 4 percent, because that will make cumulative COLAs equal to about 5 percent (1 percent plus 4 percent) and cumulative inflation is also 5 percent (105/100). However, that COLA of 4 percent also equals the difference between the initial

19. For details about this and other challenges in implementing changes to COLAs for civil service and military retirement benefits and to indexing parameters of the tax code, see Congressional Budget Office, "Indexing with the Chained CPI-U for Tax Provisions and Federal Programs" (technical appendix to *Using a Different Measure of Inflation for Indexing Federal Programs and the Tax Code,* February 24, 2010), www.cbo.gov/sites/default/files/cbofiles/ftpdocs/112xx/doc11256/webappendix.pdf (76 KB).

Figure 2.

Difference Between Initial and Final Estimates of the Chained CPI-U

(Percent)



Source: Congressional Budget Office based on data from the Bureau of Labor Statistics.

Notes: Data are quarterly and are plotted through the fourth quarter of calendar year 2011.

CPI-U = consumer price index for all urban consumers.

releases of the chained CPI-U (105/101). Essentially, a COLA that looks erroneously high given the change in the CPI-U between years 2 and 3 (a 4 percent COLA, compared with the best current estimate of inflation between those years of only about 3 percent [105/102]) offsets the erroneously low COLA that occurred on the basis of the initial estimate of the change in the chained CPI-U from year 1 to year 2.

Newer beneficiaries, however, would receive different COLAs under the alternative approach than under the first approach, because they would not have been subject to erroneous COLAs in previous years. In the simplified example, beneficiaries who begin to receive benefits in year 2 receive a 3 percent COLA from year 2 to year 3 because that corresponds to the most recent estimate of cumulative inflation since that cohort became eligible for benefits (105/102). As a result, under this approach, new cohorts of beneficiaries would receive different COLAs than other cohorts. (For details of how this approach could be applied, see the appendix.)

The magnitudes of the average error in initial values of the chained CPI-U (that is, the average difference between the initial and final values) and of the deviations around that average are important considerations in choosing between the two approaches. Under the first approach, if the initial index value was always lower than the final value *by the same amount*, benefits would not be affected by those errors, because the errors would cancel out when the differences between the initial values of the index were calculated. However, *unusual* errors in the initial values of the index would affect benefit amounts for each subsequent year because those errors would not cancel out over time. Thus, benefits under the first approach would be affected by deviations from the average error. In contrast, under the alternative approach, unusual errors in the index would be corrected in a subsequent year. Therefore, lifetime benefits would not be affected by deviations from the average error under that approach, but they would be affected by the average error. For instance, if the initial index value was always lower than the final value by the same amount, lifetime benefits would be lower by the same percentage.

Initial values of the chained CPI-U have generally been slightly lower than final values (see Figure 2). For example, from 2002 through 2005, the initial quarterly values were lower than the final values by 0.09 percent to 0.49 percent. In recent years, that gap has widened: Initial values have been lower than final values by as much as 0.64 percent, or in some cases have exceeded final values

by up to 0.60 percent. As a result, under the first approach, benefit payments would have differed from those that would have occurred if the final values of the chained CPI-U had been known right away. On average over the 2002–2011 period, the initial values for the third quarter of the calendar year—the quarter whose values are used to index Social Security benefits and civil service and military retirement benefits—were 0.26 percent lower than the final values. As a result, under the alternative approach, benefit payments would have been 0.26 percent lower, on average, than if the final values of the chained CPI-U had been used. The alternative approach would have led to different benefit payments for different cohorts, because it would have corrected errors in each cohort's early COLAs that differed from the average error.

When the chained CPI-U was first published, in 2002, BLS had little historical data available on which to base the methodology it used to estimate the initial and interim values, so it began with a simple model. If better estimating methods are adopted in the future, the initial and interim values of the index will still differ from the final value, but the differences may be notably smaller than in the past.

Measures of Inflation for Specific Populations

The consumer price index reflects prices paid for the goods and services purchased by an average household, not by any specific individual or by the average person in certain age groups, income groups, or other categories. Therefore, most people experience price changes that are either higher or lower than reported in the CPI. Computing changes in the cost of living separately for each person would not be feasible, but different indexes could be calculated for subgroups of the population or for different policy purposes. For example, the purchasing patterns of disabled Social Security beneficiaries presumably differ, on average, from those of elderly Social Security beneficiaries, which provides a rationale for indexing Disability Insurance benefits differently from Old-Age and Survivor's Insurance benefits. In addition, beneficiaries of federal income support programs presumably buy different combinations of goods and services, on average, than other consumers do. Nevertheless, there is some evidence that the average change in prices for the types of goods purchased by low-income people does not differ substantially from the average change in prices overall.[20]

The possibility that the cost of living may grow at a different rate for the elderly than for the rest of the population is of particular concern in choosing a price index for Social Security COLAs because Social Security benefits are the main source of income for many older people. BLS computes an unofficial index that reflects the purchasing patterns of older people, called the experimental CPI for Americans 62 years of age and older (CPI-E). Since 1982 (the earliest date for which that index has been computed), annual inflation as measured by the CPI-E has been 0.2 percentage points higher, on average, than inflation as measured by the traditional CPI-U (see Figure 3) or the CPI-W. However, since December 2007, when the most recent recession began, inflation as measured by the CPI-E has generally been lower than inflation as measured by the CPI-U or CPI-W.

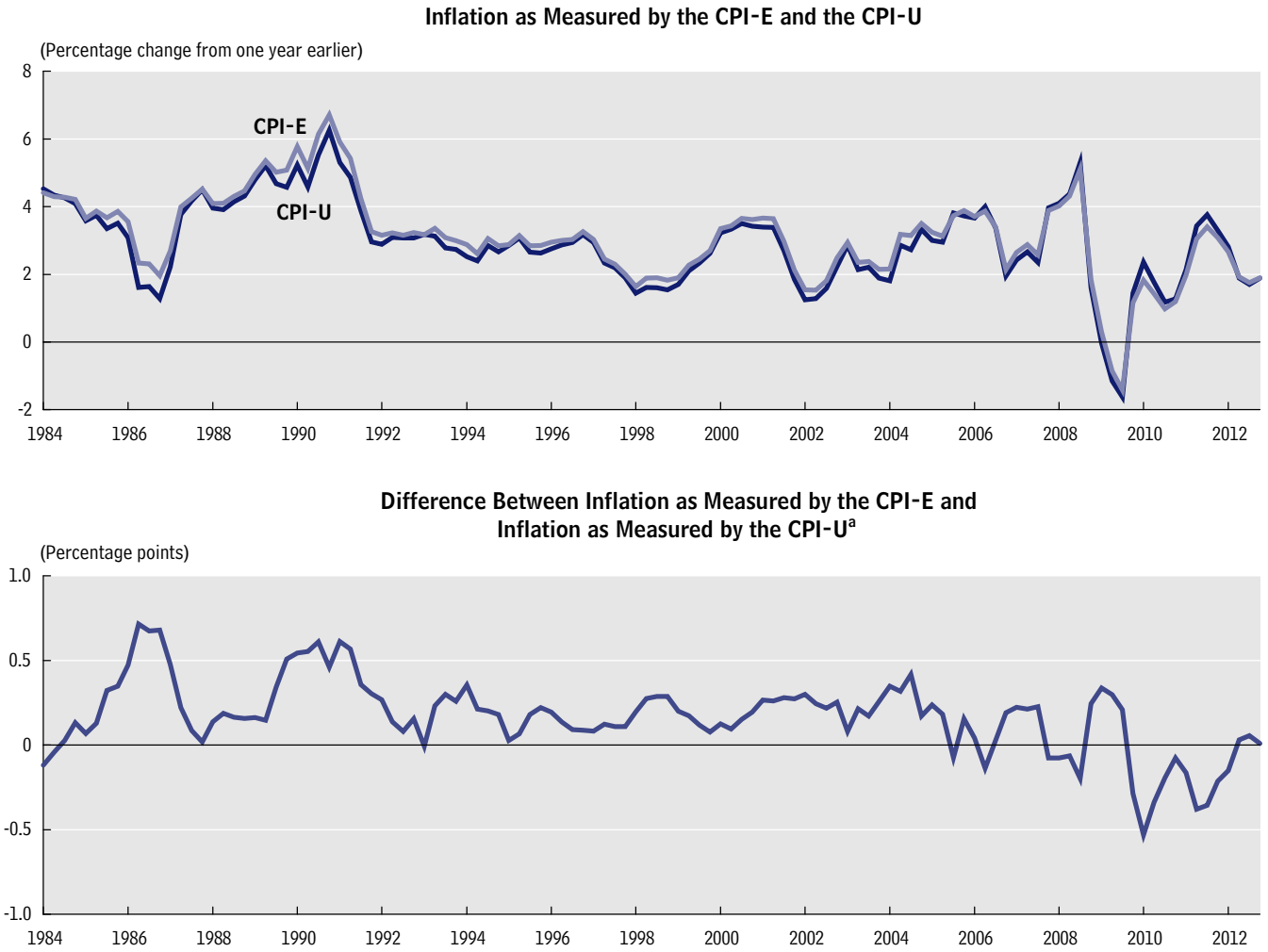
The longer-term difference between the growth rates of the CPI-E and CPI-U mainly reflects the fact that a larger percentage of spending by the elderly is for items whose prices rise especially quickly. In particular, compared with the overall population, the elderly devote a much larger percentage of their spending to medical care. That difference in spending patterns alone accounts for about half of the long-run difference between the CPI-E and the CPI-U. (The CPI covers all health care spending by individuals, including for insurance premiums, but excludes health care paid for by governments or employers. In addition to inflation, changes in the quality and quantity of care contribute to changes in total health care costs; such changes are not reflected in the CPI on a monthly basis, but only when the market basket of goods in the index is updated and only to the extent that changes in the quality of care are accurately measured.)

The other half of the longer-term difference between the growth rates of the CPI-E and CPI-U occurs primarily because other goods and services that receive greater emphasis in the CPI-E have prices that tend to rise at an above-average rate—most notably, housing. The effect of the greater emphasis on housing, however, has reversed in recent years. Over the past five years, the CPI for housing—which accounts for 45 percent of the CPI-E but a smaller percentage of the CPI-U—has risen less than the overall CPI has. That situation may be at least partly

20. See Thesia I. Garner, David S. Johnson, and Mary F. Kokoski, "An Experimental Consumer Price Index for the Poor," *Monthly Labor Review*, vol. 119, no. 9 (September 1996), pp. 32-42, www.bls.gov/mlr/1996/09/art5abs.htm.

Figure 3.

Comparison of the CPI-E and the CPI-U



Source: Congressional Budget Office based on data from the Bureau of Labor Statistics.

Notes: Data are quarterly and are plotted through the fourth quarter of calendar year 2012.

CPI-E = experimental consumer price index for Americans 62 years of age and older; CPI-U = consumer price index for all urban consumers.

a. In this panel, positive numbers indicate that inflation as measured by the CPI-E was higher than inflation as measured by the traditional CPI-U.

attributable to the collapse in housing prices that largely resulted from overbuilding during the previous economic boom. Housing prices have started to rise again, however, and CBO expects that increase to continue in the coming decade, so it anticipates that the CPI-E will outpace the CPI-U in the future.

If policymakers believe that the CPI-E is an appropriate measure of inflation for the elderly, they could use it to index programs that serve that population. A chained version of the CPI-E could also be developed to better account for economic substitution by older consumers, but doing so would require collecting significantly more data about the purchasing patterns of the elderly.

It is unclear, however, whether the cost of living actually grows at a faster rate for the elderly than for younger people, despite the fact that changes in health care prices play a disproportionate role in their cost of living. Determining the impact of rising health care prices on the cost of someone's standard of living is problematic because it is difficult to measure the prices that individuals actually pay and to accurately account for changes in the quality of health care.[21] Both treatment costs and the value of improved treatments often increase rapidly. Thus, more uncertainty exists about measures of price growth for health care than for other goods and services. Many analysts think that BLS underestimates the rate of improvement in the quality of health care, and some research suggests that such improvement may make the true increase in the price of health care more than 1 percentage point a year smaller, on average, than the increase in that price measured in the CPI.[22] If that is the case, then all versions of the CPI overstate growth in the cost of living, with the overstatement being especially large for the CPI-E because of the large weight on health care in that index. However, if health care increases in both price and quality, the previous lower-quality care may become less accessible, reducing patients' options for making lower-cost substitutions.

The CPI-E differs from the CPI-U only by using different percentage weights for the 211 categories of goods and services in the CPI market basket. For the CPI-E, BLS calculates those weights on the basis of the spending patterns of people ages 62 and older as observed in the Consumer Expenditure Survey, whereas for the CPI-U, BLS calculates expenditure weights on the basis of the spending patterns of all urban consumers in the survey. Both indexes use the same underlying price data from the more than 8,000 item-area indexes. That may be problematic because *within* each item-area index, elderly consumers probably have different purchasing patterns than all urban consumers. To address such differences in purchasing patterns, new indexes could be constructed that would also reflect the differences in different populations' purchasing patterns within each item-area index. If the prices of goods that elderly consumers buy within a category rise particularly rapidly—for example, if they consume more medical care with rapidly increasing prices than the general population does—then those new indexes would reflect that extra growth. However, if the prices of goods that elderly consumers buy within a category do not rise particularly rapidly, then those indexes would not differ appreciably from the current indexes.

21. When the price of a good or service changes, it can be difficult to determine what portion of the price growth is attributable to underlying improvements in the quality of the good or service and what portion is attributable to inflation—especially in the case of electronic goods and medical services. Most analysts think that this difficulty leads to an upward bias in the CPI, which is known as quality bias. Such bias is present in all forms of the CPI and is not limited to the CPI-E.

22. See Robert J. Gordon, *The Boskin Commission Report: A Retrospective One Decade Later*, Working Paper 12311 (National Bureau of Economic Research, June 2006), pp. 24–25, http://papers.nber.org/papers/w12311.

Appendix: Cohort-Specific Approaches to Indexing Social Security With the Chained CPI-U

For Social Security retirees, annual cost-of-living adjustments (COLAs) could be based on the growth in the chained consumer price index for all urban consumers (CPI-U) since the third quarter of the year in which they turned 61. With that method, not every cohort of beneficiaries (all of the people born in a given year) would receive the same COLA, but the differences would be small (generally about 0.1 percentage point). That approach would have the advantage of not adjusting new recipients' benefits for errors in past years' COLAs, because those new recipients would not have benefited or suffered from past errors in preliminary values of the chained CPI-U. The most straightforward way to implement cohort-specific COLAs would be to switch from the present system, in which someone's benefit is based on the previous year's benefit and the COLA, to a computation in which the person's benefit equals a base-year benefit (the primary insurance amount in the first year of eligibility for Social Security benefits) adjusted for total estimated growth in the chained CPI-U between the base year and the current year.

Under the present system, price indexation through age 60 is done implicitly by indexing benefits to Social Security's national average wage index, which is based on the average of all wages over a calendar year. Because the wage index is a nominal value, it can be considered to incorporate both real (inflation-adjusted) wage growth and price growth—including price growth from the year in which the beneficiary turns 59 to the year in which he or she turns 60. The COLA is then applied to benefits for the December of the year in which the beneficiary turns 62. That COLA equals the price growth between the third quarter of the year in which the person turns 61 and the third quarter of the year in which he or she turns 62.

Benefit amounts are reduced for people who claim benefits before the normal retirement age and are raised for those who claim benefits after that age. But the age of claiming does not affect the initial computation or the application of COLAs, which apply regardless of when people claim benefits.

The chained CPI-U could be used to determine cohort-specific COLAs by setting benefits in a given year (the "benefit year") equal to initial benefits adjusted for growth in the chained CPI-U between the year in which the beneficiary turned 61 and the year before the benefit year. More formally, benefits in year y would equal initial benefits times the ratio of the chained CPI-U in year y-1 to the chained CPI-U in the year in which the beneficiary turned 61. The computation would always use the most recent data available. Specifically, the numerator would always be the initial value of the chained CPI-U. In the first year in which a COLA was applied, the denominator would be the interim value of the chained CPI-U; thereafter, it would be the final value.

For example, if someone turned 62 in 2013, no COLA would be applied to benefits paid in that year; benefits would simply be the primary insurance amount (adjusted for the age of claiming). Then, for benefits paid in 2014,

$$\text{benefit}_{2014} = \text{benefit}_{2013} \times \frac{\text{initial index}_{2013}}{\text{interim index}_{2012}} \qquad (1)$$

For benefits paid in 2015,

$$\text{benefit}_{2015} = \text{benefit}_{2013} \times \frac{\text{initial index}_{2014}}{\text{final index}_{2012}} \qquad (2)$$

And in later years,

$$\text{benefit}_y = \text{benefit}_{2013} \times \frac{\text{initial index}_{y-1}}{\text{final index}_{2012}} \quad (3)$$

Using historical data for the chained CPI-U and third-quarter-to-third-quarter inflation rates illustrates how the above formulas would have applied to a beneficiary who turned 62 in 2005 with a primary insurance amount of $1,000. That person would have received the following monthly benefits (with each value rounded to the nearest 10 cents):

$$\text{benefit}_{2005} = \$1{,}000.00 \quad (4)$$

$$\text{benefit}_{2006} = \text{benefit}_{2005} \times \frac{\text{initial index}_{2005}}{\text{interim index}_{2004}} = \$1{,}000.00 \times \frac{113.945}{110.596} = \$1{,}030.30 \quad (5)$$

That adjustment is the same as applying the initial 2005 inflation estimate of 3.03 percent.

Benefits in 2007 would have been

$$\text{benefit}_{2007} = \text{benefit}_{2005} \times \frac{\text{initial index}_{2006}}{\text{final index}_{2004}} = \$1{,}000.00 \times \frac{117.725}{110.790} = \$1{,}062.60 \quad (6)$$

Applying the initial 2006 inflation estimate of 3.08 percent to the 2006 benefit of $1,030.30 would have produced a 2007 benefit of $1,062.00. The actual 2007 benefit would be 60 cents higher, reflecting the upward revision to 2005 inflation (from an initial estimate of 3.03 percent to an interim estimate of 3.09 percent).

The revisions made to the initial values of the chained CPI-U for 2005 to 2008 would have trimmed about 0.2 percent to 0.6 percent from each year's benefit amount relative to the benefits that would have been paid if the initial values had equaled the final values.

About This Document

This testimony updates *Using a Different Measure of Inflation for Indexing Federal Programs and the Tax Code*, a report written by Noah Meyerson that the Congressional Budget Office (CBO) released in February 2010. In keeping with CBO's mandate to provide objective, impartial analysis, this testimony contains no recommendations.

David Brauer, Sheila Dacey, Robert McClelland, Kevin Perese, and Emily Stern of CBO contributed significantly to the analysis on which this testimony is based. Robert Arnold, Joyce Manchester, and Sam Papenfuss supervised that work.

Christian Howlett edited the testimony, and Jeanine Rees prepared it for publication. The testimony is available on CBO's website (www.cbo.gov).