Automatic Cost of Living Adjustments: Some Economic and Practical Considerations

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Summary

Public policy discussions often involve dollar amounts. Because of rising prices, however, the purchasing power of those dollar amounts changes over time. For that reason, policy makers have seen fit in some cases to arrange for those amounts to be increased automatically, as prices rise, to keep their purchasing power unchanged. Without such an arrangement, either the real value of those amounts would fall or policy makers would have to take periodic steps to increase them to offset the effects of inflation.

Most of the effect on the federal budget of automatic COLAs may be accounted for by three programs: individual income taxes, Social Security, and income support programs tied to the poverty thresholds.

The consumer price index (CPI) is based on prices and quantities of goods and services, which can be directly observed. It measures the change in income required to purchase a fixed marketbasket of goods and services, but that is not a "true" measure of change in the cost of living. A true cost-of-living index would measure the change in income required to maintain a constant level of satisfaction.

If existing measures of price change exaggerate what increase in income is needed to maintain consumer satisfaction, then increases in benefit payments that are indexed are larger than they need to be to maintain their value to beneficiaries, and income tax brackets shift upward more than necessary to avoid bracket creep. Both effects tend to increase the budget deficit. There are other price indexes that may be superior measures of change in the "true" cost of living, but they have some practical disadvantages.

One standard for choosing a price index for automatic COLAs might be which one is most appropriate. In some cases, it might be argued that what is appropriate is not a measure of price change but rather a measure of change in income.

With respect to public policy in general, it has been argued that indexation may have the effect of inhibiting policy makers from making changes to those programs that are indexed. It may be that indexing a benefit implies a kind of guarantee of future benefits, making any future change likely to be more contentious. It may be that there is a loss of policy discretion and an increase in policy inertia with respect to those programs that are indexed. Indexed benefits rise over time with no regard to changes in underlying economic conditions. However, budget priorities are constantly shifting, and if economic growth is sluggish and revenues are less than expected, that may put additional budgetary pressure on those programs that may be relatively more subject to discretion.

This report will not be updated.

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Public policy discussions often involve dollar amounts. Because of rising prices, however, the purchasing power of those dollar amounts changes over time. For that reason, policy makers have seen fit in some cases to arrange for those amounts to be increased automatically, as prices rise, to keep their purchasing power unchanged. Without such an arrangement, either the real value of those amounts would fall or policy makers would have to take periodic steps to increase them to offset the effects of inflation.

These automatic cost-of-living adjustments (COLAs) are also referred to as indexing. Values that are adjusted automatically are said to be indexed because they are linked to an index of prices. As might be expected, there are a number of consequences that follow from indexing.

One implication of indexing is that the index itself becomes an object of scrutiny to those who might otherwise have no interest in it. The index also becomes a potentially powerful policy lever in that it directly influences the federal budget, both outlays and revenues. Indexing may also be a source of policy inertia in that it implies that the amount that is indexed is less susceptible to discretionary changes.

This report looks at how indexing influences the budge and identifies major programs that have indexing provisions. It also explains what price indexes attempt to measure and discusses some of their weaknesses. Finally, it points out some practical things to keep in mind when establishing an indexing provision.

Major Federal Programs Affected by Price Indexes

Most of the effect on the federal budget of automatic COLAs may be accounted for by three programs: individual income taxes, Social Security, and income support programs tied to the poverty thresholds.

Price Indexes

Indexation usually relies on one of two consumer price indexes (CPI). Both are published monthly by the Bureau of Labor Statistics (BLS) of the Department of Labor. One is the consumer price index for all urban consumers (CPI-U), and the other is the consumer price index for urban wage earners and clerical workers (CPI-W). Both are intended to track changes in the prices of the goods and services purchased by a typical household in the populations surveyed. Of the two, the CPI-U reflects a larger share of the population.[1] CPI data are usually released toward the end of the month following the month in which the data are collected.

Income Taxes

A number of elements in the individual income tax are automatically adjusted for inflation. Indexation was introduced beginning with the Economic Recovery Tax Act of 1981 (P.L. 97-34), and the number of provisions of the individual income tax code that are indexed has continued to grow. In the absence of indexation, inflation in combination with progressive tax rates tends to raise the average effective tax rate. As an individual's income rises to keep pace with rising

[1] For more detail on how the CPIs are calculated, see CRS Report RL30074, *The Consumer Price Index: A Brief Overview*, by Brian W. Cashell.

prices, more of it is subject to higher marginal tax rates even though there has been no real gain in purchasing power. This has been referred to as "bracket creep." Linking the income levels that define the tax brackets to a price index prevents that from happening. Only those increases in income that represent real gains above and beyond inflation are subject to higher tax rates. Other elements of the individual income tax code that are linked to a price index are the earned income tax credit, the standard deduction, and the personal exemptions.[2]

These automatic adjustments are based on changes in the CPI-U. Specifically, the automatic adjustment in each year is based on the average level of the CPI-U for the 12-month period ended in August of the previous year, relative to the average CPI-U for the 12-month period ended in August of a particular base year.[3] For example, the inflation adjustment factor for the standard deduction for any given year is determined by the ratio of the average CPI-U for the 12-month period ended in August of the previous year to the average CPI-U for the 12-month period ended in August 1987. The data required to calculate the automatic adjustments for the coming year are usually available in late September.

Social Security

Social Security benefit payments are adjusted in January every year to reflect increases in the CPI-W. The adjustment is based on the average value of the CPI-W for the three months of the third calendar quarter in the previous year relative to the average of those same three months from the year before. For example, the COLA for January 2008 will be based on the percentage change in the CPI-W between the third calendar quarter of 2006 and the third calendar quarter of 2007. The data required to calculate the COLA for the coming year are usually available in late October.

Civil Service Retirement System

Retirement benefit payments under the Civil Service Retirement System (CSRS) are automatically adjusted in January of each year to reflect increases in the CPI-W. Like the Social Security COLA, the adjustment is based on the third quarter over third quarter change in the CPI-W.

Federal Employee Retirement System

Retirement benefit payments under the Federal Employees Retirement System (FERS) are also based on the third quarter over third quarter increase in the CPI-W. There are, however, some additional adjustments to calculate the COLA. If the increase in the CPI-W is 2% or less, then the COLA is equal to the CPI-W increase. If the increase in the CPI-W is more than 2% but less than 3%, the COLA is 2%. If the increase in the CPI-W is more than 3%, the COLA is 1% *less than* the increase in the CPI-W. This COLA only applies to FERS retirees aged 62 and over.

[2] See James C. Young, "Inflation Adjustments Affecting Individual Taxpayers in 2006: Analysis and Commentary," *Tax Notes*, October 3, 2005, pp. 105-114.

[3] The base years are different for different components of the income tax.

Military Retirement

Military retiree pension benefit payments are adjusted in the same way as Social Security benefits. The January increase in benefit payments is increased by the third quarter to third quarter increase in the CPI-W.

Railroad Retirement

Benefits paid to retirees in the railroad retirement system are adjusted in the same way as Social Security benefits. The January increase in benefit payments is increased by the third quarter to third quarter increase in the CPI-W.

Poverty Thresholds

Poverty thresholds (or some percentage of them, usually more than 100%) are used to establish eligibility for a number of federal government income support programs, including food stamps, Medicaid, the subsidized portion of Medicare prescription drug coverage, and the low income home energy assistance program (LIHEAP). Benefits paid by the programs are not indexed, but the poverty thresholds themselves are adjusted each year to reflect increases in the CPI-U. Each year, the poverty thresholds are increased by the increase in the CPI-U between the two prior calendar years. For example, the poverty thresholds for 2007 were calculated by increasing the 2006 thresholds by the increase in the average CPI-U for 2006 over the average CPI-U for 2005.

The Cost of Living from a Theoretical Perspective

The CPIs, as they are now calculated, are based on prices and quantities of goods and services, which can be directly observed. They measure the change in income required to purchase a fixed marketbasket of goods and services; however, that is not a "true" measure of change in the cost of living. A true cost-of-living index would measure the change in income required to maintain a constant level of satisfaction, or "utility," in the jargon of economists.

The idea of utility is pervasive in economics. With a given income, which constrains choices, consumers decide how to spend their money based on how much utility, or satisfaction, is derived from the various goods and services available. There is, however, no unit of measure for utility, so there is no way of quantifying the utility associated with a particular good or basket of goods and services. The inevitable gap between any practicable cost-of-living measure and its theoretical ideal makes it difficult to know exactly how close any actual measure may be to that ideal.

The issue of price index accuracy may seem arcane, but it is not trivial. Suppose that existing measures of price change exaggerate what increase in income is needed to maintain consumer satisfaction. If that is the case, then increases in benefit payments that are indexed are larger than they need to be to maintain their value to beneficiaries. That means federal outlays rise more than necessary to maintain the value of those benefits. Similarly, income tax brackets shift upward more than necessary to avoid bracket creep, and tax revenues are less than they would be if the price index were measured ideally. A price index that overstates the true increase in the cost of living thus causes outlays to be higher than necessary and revenues to be less than was intended. Both effects tend to increase the budget deficit.

Price Index Complications

There are a number of weaknesses in the CPIs as they are now calculated. Whether they cause overstatement is subject to dispute. In 1996, a special commission established by the Senate Finance Committee (the "Boskin" commission, named after its chairman) issued a report estimating that the CPI overstated inflation by about 1.1% per year.[4] Since that report was released, BLS has introduced a number of changes that may have reduced some of any upward bias in the CPI.[5]

The CPIs are fixed-weight price indexes.[6] From one period to the next, they measure the change in total price of an unchanging mix of goods and services. Consumers, however, regularly vary their spending habits.

Even as the average level of prices rises, relative prices also change. Some prices rise more rapidly than others, and in some cases, prices may fall. Over time, as relative prices change, consumers will tend to buy more of those goods and services whose prices are rising less rapidly than average and fewer of those goods and services whose prices are rising more rapidly than average. By changing spending patterns in this way, consumers can partially insulate themselves from the general increase in prices, at least as measured by a fixed-weight price index like the CPI.

To the extent that spending patterns change solely in response to changes in relative prices, it may be that the CPI tends to overstate the effect of inflation on consumer well-being. However, spending patterns change for other reasons. Over time, tastes and preferences change. Food purchases may change, for example, for dietary reasons. As incomes rise, consumers may demand more luxuries—for example, substituting restaurant meals for those prepared at home. If changing spending patterns simply reflect changing consumer preferences, it is less likely that the CPI overstates the effects of rising prices on consumer well-being.

BLS now publishes a price index that attempts to eliminate any bias resulting from changing consumer spending patterns. The chained consumer price index for all urban consumers (C-CPI-U) is not a fixed-weight index. To measure the change in prices between two periods, it uses both prices and quantities from both periods, and so takes changing marketbaskets into account.[7] Data for the C-CPI-U are available beginning with December 1999. Although there is some variation in the differences, on average, increases in the C-CPI-U have been between 0.3% and 0.4% slower than the CPI-U.

Another difficulty with the CPIs is the introduction of new goods to the indexes. Typically, the indexes register the change in price of existing goods and services, but when a new good is introduced, there is no price for it in the previous period, so there is usually a delay before new goods can be introduced to the index. Cell phones, for example, were added to the CPI

[4] Advisory Commission to Study the Consumer Price Index, Michael Boskin, Chairman, "Toward a More Accurate Measure of the Cost of Living: Final Report to the Senate Finance Committee," December 4, 1996, p. 93.

[5] The Boskin Commission report was not without its critics. See Economic Policy Institute, *Getting Prices Right: The Debate Over the Consumer Price Index*, edited by Dean Baker, 1997, p. 190.

[6] BLS currently updates the CPI marketbasket every two years.

[7] Unlike the CPIs the C-CPI-U is subject to revision. For a detailed explanation of the C-CPI-U, see CRS Report RL32293, *The Chained Consumer Price Index: How Is It Different?*, by Brian W. Cashell.

marketbasket years after their introduction, and thus the CPI failed to reflect significant price declines as they became ubiquitous.

The characteristics of goods also change over time, making it difficult to compare prices from one period to the next. For example, cars are safer, color television replaces black and white, standard sets are replaced by high definition ones, and computers make more calculations per second. A true cost-of-living index would take into account that some of any change in price in a good might be due to the change in characteristics.

Measuring the value of a change in quality is not always straightforward. In some cases, an improved good may be sold alongside its outmoded version, and the difference in price can be taken as a measure of the value of the improvement. Even that method may be flawed, however, because the introduction of a new model may cause the price of the older one to fall because it is perceived as obsolete. The introduction of a new generation of computers, for example, may cause the price of the previous one to fall because consumers know that future software releases may not run on that model.

One method that BLS uses to adjust some goods for quality change views goods as bundles of characteristics or attributes. For example, personal computers are adjusted for quality change based on the attributes of their components, such as processor speed, amount of memory, and storage capacity. Changes in the characteristics of many goods and services, however, are more difficult to quantify, and so quality adjustments are far from straightforward.

The characteristics of goods are not the only changes that must be addressed in a cost-of-living index. How those goods are sold also changes over time. In recent years, the proliferation of buying clubs and other "big box" retailers has provided consumers with a lower-price alternative. The shift to self-service gasoline stations is another example. Just as the CPI may be slow to reflect changes in the mix of goods and services that consumers buy, changes in the nature of retail markets are not immediately taken into account.

BLS efforts to improve the CPI as a cost-of-living index began long before the release of the Boskin Commission report, and they continue. Specific changes subsequent to the Boskin report include the introduction of the new C-CPI-U, more frequent updating of the expenditure weights used in the CPIs, and increased efforts at quality adjustments, especially for durable goods.[8]

Robert Gordon, who was a member of the Boskin Commission, recently published an assessment of the CPI 10 years after the commission's report.[9] He found that in some cases, the commission may have overestimated the bias because of inadequate adjustment for quality change in the CPI, but may have underestimated the upward bias attributable to inadequate accounting for the effects of consumer substitution. Reviewing the post Boskin Commission changes in CPI methodology, Gordon estimates the current upward bias in the CPI to be 0.8 percentage points.

[8] John S. Greenlees, "The BLS Response to the Boskin Commission Report," *International Productivity Monitor*, Spring 2006, pp. 23-41.

[9] Robert J. Gordon, "The Boskin Commission Report: A Retrospective One Decade Later," National Bureau of Economic Research Working Paper 12311, June 2006, p. 35.

A study published by BLS also reviewed some of the recent methodological changes in the CPI.[10] It found that some of the bias reported by the Boskin Commission that was due to consumer substitution had been reduced. The study also found that although BLS has greatly expanded efforts to make adjustments for quality change, those adjustments have not had a significant quantitative effect on the index itself. The BLS study also points out that some have argued it is possible that some quality adjustments are overdone and that there could even be a downward bias in the CPI. Most studies, however, have found reason to believe that there is some upward bias. There also seems to be some suspicion that the value of life-extending medical advances, as well as many technological advances, cannot help but be undervalued.

Indexing Alternatives

Once a benefit or an income threshold has been established, it is not surprising that provision is made for inflation protection of those amounts. Most automatic adjustments are tied to one of two CPIs, the CPI-U or the CPI-W. There are, however, other price indexes published by the government that measure change in consumer prices. None is perfect, the choice may reduce to what is most appropriate and what is practical.

Social Security benefits are indexed to the CPI-W. At the time the benefit COLA was first established, there was only one CPI; the CPI-U was not published until 1978. The CPI-W tracks the prices for goods and services purchased by households deriving more than 50% of their income from wages and clerical workers' earnings. That would seem to exclude many retirees, and it might be that the CPI-U would be a more appropriate index to adjust Social Security for the effects of inflation. From a practical standpoint, however, it would not have made that much difference. Between 1978 and 2006 the CPI-W increased at an annual rate of 4.0%, and the CPI-U increased at an annual rate of 4.1%.

In the case of Social Security beneficiaries, the claim is often made that the CPI-W does not reflect the spending patterns of retirees. In particular, it is argued that the elderly spend more than the average household on health care, and that health care costs rise more rapidly than prices for other goods and services. For that reason, some have suggested that a separate price index for the elderly population should be calculated.

BLS's Experimental Index for the Elderly

Beginning with December 1983, BLS began calculating an experimental index for the elderly using data already collected for the CPI program. If the purpose of indexing Social Security benefits was to maintain the value of those benefits to retirees in an environment of rising prices, it might seem appropriate to use a price index that tracked the goods and services purchased by Social Security beneficiaries.[11]

On average, the elderly consume a different basket of goods and services from the overall population. They tend to spend more on health care and less on transportation, for example. As a result, historically, the experimental index for the elderly has risen about 0.3 percentage points

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

[11] Not all Social Security beneficiaries are elderly.

per year faster than the CPI-W.[12] The difficulty with using a separate price index for the elderly to adjust Social Security benefits is that, just as the inflation experience of the elderly varies from that of the overall population, so too are there differences in spending patterns within the elderly population itself. Switching to a price index would still leave some whose inflation experience was underestimated by the index, but they would be fewer.

Although the experimental index differs from the CPI-W, as might have been expected, there are other considerations to keep in mind. Because it is an experimental index, fewer resources are used in its construction. It relies entirely on data collected for the estimation of the other CPIs. The survey on which the marketbasket is based was considerably smaller than the one used for the other CPIs and thus more subject to sampling error. Further, no additional survey was conducted to determine whether the elderly shop in different outlets from the overall population. If BLS were to initiate a more formal program to estimate change in the cost of living of the elderly, it might yield different results.

One further consideration is that, if the experimental index for the elderly is found wanting, any automatic cost-of-living adjustment affecting the elderly might at least rely on the CPI-U rather than the CPI-W, since the elderly are under-represented in the CPI-W. Although the CPI-U might be the more appropriate of the two, it would be unlikely to make much practical difference.

The Chain-Weighted Consumer Price Index

Referred to above, the chain-weighted consumer price index for all urban consumers (C-CPI-U) differs from the CPI-U in that it takes into account changes in spending habits over time resulting from changes in relative prices. For that reason, it is considered to be closer to a true measure of changes in the cost of living.

Historically, the C-CPI-U has increased more slowly than the other CPIs. The annual difference has typically been about 0.3 percentage point but has been as large as 0.8 percentage point.[13]

While the C-CPI-U might be considered a better measure of changes in the cost of living, it might be unsuitable for use in any automatic COLA provision. The reason is that unlike the CPI-U or CPI-W, the C-CPI-U is subject to revision. Once the CPI-W and CPI-U are released, those numbers are final and will not change. The C-CPI-U, however, is subject to two revisions after its initial release. In the case of data for each January, the wait for the final statistic is the longest. The first estimate is released in the following February. The first revision is released in February of the following year, and the final revision is released in February the year after that. The wait for the final number for any given January is more than two years.

If timeliness is an important aspect of COLAs, that may present a problem. In an era of stable inflation rates, it might make little practical difference if COLAs were based on an increase in prices that happened as much as two years earlier. In an era of accelerating inflation, however, delayed adjustments would result in declines in the real value of the indexed amount.[14]

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[12] See CRS Report RS20060, *A Separate Consumer Price Index for the Elderly?*, by Brian W. Cashell.

[13] See CRS Report RL32293, *The Chained Consumer Price Index: How Is It Different?*, by Brian W. Cashell.

[14] Although simplicity may be considered an important aspect of any COLA provision, it would be possible to make adjustments to subsequent COLAs to reflect revisions in earlier data.

Using the first release of the C-CPI-U in an automatic COLA provision would be more timely but might present other complications. For example, if a given benefit payment were indexed to the first release of the C-CPI-U and subsequent revisions indicated a faster rate of increase, beneficiaries would likely be displeased.

Other Price Indexes

There is also a broad array of price indexes associated with the economic accounts used to generate estimates of gross domestic product (GDP). Each of the components of GDP has a corresponding price index. One of those is referred to as the chain-type price index for personal consumption expenditures (PCE). The PCE price index tracks the prices of all household consumption. Like the C-CPI-U, it also takes into account that household spending patterns change over time, and so it avoids some of the overstatement of inflation that is typical of a fixed-weight price index.

The PCE price index, as well as the other price indexes associated with the GDP accounts, is useful as an economic indicator because when the methodology used to estimate it changes, the entire time series is revised. At a given time, the PCE price index time series is based on a uniform methodology. The PCE price index, however, is subject to more frequent revisions which, like the C-CPI-U, may make it unattractive for use in any automatic COLA.

PCE price index data are quarterly. The first release is published in the month following the end of the quarter to which the data refer (the reference quarter). That figure is revised again the following month, and again the month after that. Further, it is subject to revision in each of the next three Julys. Additional revisions are possible after that.

"Diet" COLAs

There is another possible automatic COLA provision, and as mentioned above, there is a version of it applied to pensions in the FERS retirement system. This is sometimes referred to as a "diet" COLA. In this indexing arrangement, the automatic adjustment is something less than the full increase in the price index used. That might be done to limit the budgetary consequences of a benefit program over the long run, but it might also be done because the CPIs are believed to overstate the effect of rising prices on households. The historical gap between the C-CPI-U and the CPI-U thus might be seen as a basis for reducing the automatic adjustment that would result from a direct link to the CPI-U.

Additional Considerations

Aside from any theoretical issues related to indexing, there are a few practical matters that may be important. First is that the timing of the COLA must take into account that the data will be available. That may seem obvious, but it might be prudent to leave some time between when the data are released and when the COLA takes effect. There are two reasons for that. One is for there to be time to advertise the COLA to those affected. Another reason is the possibility that the release of the data might be delayed. In 1995, for example, because of controversy over the federal budget at the end of 1995, there was a temporary government shutdown. That shutdown resulted in delays in the publication of the CPIs for December 1995 and January 1996.

One standard for choosing a price index for automatic COLAs might be which one is most appropriate. However, in some cases, it might be argued that what is appropriate is not a measure of price change but rather a measure of change in income. The poverty thresholds, as described above, are adjusted annually by the change in the CPI-U. Using a price index to adjust them implies that they represent an *absolute* standard of poverty, but some may consider them to be *relative* standards that have meaning only in the context of the overall distribution of income. If poverty is seen as a relative measure, it might be more appropriate to adjust it to keep pace with rising incomes.

From time to time, indexing the statutory federal minimum wage has also been discussed.[15] Like the poverty thresholds, the minimum wage might be viewed either as an absolute standard, in which case, if it were to be automatically adjusted, it might make sense to link it to a price index. If, however, it is considered to be a relative standard for worker pay, it might make more sense to link it to a measure that reflected changes in average wages.

In cases where the benefit to be indexed is intended for a specific purpose, such as health care as opposed to general income support, it might be more appropriate to use a price index that reflected changes in the cost of health care.

With respect to public policy in general, it has been argued that indexation may have the effect of inhibiting policy makers from making changes to those programs that are indexed.[16] It may be that indexing a benefit implies a kind of guarantee of future benefits, making any future change likely to be more contentious. It may be that there is a loss of policy discretion and an increase in policy inertia with respect to those programs that are indexed. Indexed benefits rise over time with no regard to changes in underlying economic conditions. However, budget priorities are constantly shifting, and if economic growth is sluggish and revenues are less than expected, that may put additional budgetary pressure on those programs that may be relatively more subject to discretion.

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[15] See CRS Report RL33791, *Possible Indexation of the Federal Minimum Wage: Evolution of Legislative Activity*, by William G. Whittaker.

[16] R. Kent Weaver, *Automatic Government: The Politics of Indexation*, The Brookings Institution, 1988, pp. 276.