Implications of Overstating Inflation for Indexing Government Programs and Understanding Economic Progress

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Many private contracts, including indexed bonds, are explicitly tied to consumer price indexes, and an even larger number calibrate informally. About one-third of federal budget outlays are automatically escalated each year by the change in the consumer price index (CPI). Social Security is by far the most important of the federal outlays that are indexed by the CPI, compiled by the Bureau of Labor Statistics. However, Supplementary Security Income, Military Retirement, and Civil Service Retirement are similarly indexed. Other federal retirement programs, Railroad Retirement, veterans' compensation and pensions, and the Federal Employees' Compensation Act also contain provisions for indexing. The Economic Recovery Tax Act of 1981 indexed individual income tax brackets and the personal exemption to the CPI (but unfortunately not to the definition of income).

The issue posed for fiscal policymakers by an upward bias in the CPI as a measure of the cost of living has been stated with admirable clarity by the Congressional Budget Office (1994 p. 32):

> The budgetary effect of any overestimate of changes in the cost of living highlights the possibility of a shift in the distribution of wealth. If the CPI has an upward bias, some federal programs would overcompensate for the effect of price changes on living standards, and wealth would be transferred from younger and future generations to current recipients of federal programs—an effect that legislators may not have intended.

Upward biases in the CPI raise the question: how important are the budgetary consequences historically? A precise answer to this question requires extended analysis, taking into account the timing of the bias, the parallel development of indexing provisions in specific federal outlays and revenues, and interest on the accumulation of the debt that has resulted. In Section I we summarize a careful study of this type, focusing on Social Security benefits, which has been conducted by the Office of Economic Policy of the Department of the Treasury.

A second question raised by persistent upward biases in the CPI is: what would be the effect of an upward bias on future budget deficits? More than half of federal spending of $1.6 trillion is now attributable to entitlements and mandatory spending programs. In Section II we summarize testimony presented by the Congressional Budget Office (CBO) to the Committee on Finance in 1995 showing that a hypothetical correction of 0.5 percent in cost-of-living adjustments for the fiscal years 1996–2000 would reduce the federal deficit by more than 10 percent in the final year. Projections of a 1.0-percent correction are more dramatic.

An upward bias in the CPI results in substantial overpayments to the beneficiaries of federal entitlement and mandatory spending programs. In addition, such a bias reduces federal revenues by overindexing the individual income tax. Correction of biases in the CPI, while designed to adjust benefits and taxes more accurately for changes in the cost of living, would also contribute importantly to reductions in future federal deficits and the national debt. These reductions can be attributed to higher revenues, lower outlays, and less debt service.

The implications of the overstatement of inflation for understanding and measuring economic progress are as profound as the ramifications for the federal budget. Measures of economic progress must be converted to constant prices. If the price index is growing

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more rapidly than the cost of living, the growth of the variable being deflated will be understated. This is particularly important given concerns over the sharp slowdown in productivity growth over the past quarter century, alleged declines in average real hourly wages, apparent stagnation of median real family income, and persistence of poverty. In Section III we consider the implications of bias in the CPI for these measures and for growth in the real GDP.

I. Housing Costs

On 25 February 1983, the Bureau of Labor Statistics introduced an important modification in the Consumer Price Index for All Urban Consumers (CPI-U). This altered the treatment of housing costs by shifting the costs for homeowners to a rental-equivalent basis. The new treatment of housing costs was incorporated into the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W), which is used to index Social Security benefits, in 1985.

The rental-equivalent measure of housing costs was a conceptual improvement and has been retained in subsequent official publications. However, housing costs in preceding years employed a "home ownership" measure "... based on house prices, mortgage interest rates, property taxes and insurance, and maintenance costs" (Robert Gillingham and Walter Lane, 1982 p. 9). The treatment of housing costs prior to 1983 was not modified in publishing the revised CPI-U, so that the new treatment of housing introduced a discrepancy in the conceptual basis for the CPI-U before and after 1983. Similarly, housing costs in the CPI-W prior to 1985 have not been modified.

Daniel T. Slesnick (1991) has estimated that the CPI-U incorporated an upward bias of about 10 percent during the period 1964–1983, due to inadequacies in the treatment of costs of owner-occupied housing. The CPI tracks the cost-of-living index reasonably well until the early 1970's. At that time the treatment of housing costs began to diverge sharply from the rental-equivalent value of housing appropriate for measuring the cost of living. More recently, the Advisory Commission to Study the Consumer Price Index (Boskin et al., 1996) has reported to the Senate Committee on Finance that the CPI has a persistent upward bias of 1.1 percent per year.

While the index-number approach to cost-of-living measurement is conceptually sound as well as empirically robust, difficulties in implementation have resulted in very substantial and persistent upward biases in the CPI. This raises the question: how important have the budgetary consequences of these upward biases been historically? For the bias resulting from inconsistencies in the treatment of housing costs, this question has been answered by a careful study, focusing on Social Security benefits, conducted by the Office of Economic Policy (OEP) of the Department of the Treasury (James E. Duggan et al., 1996).

The Bureau of Labor Statistics (BLS) has developed an "experimental" price index, CPI-U X1, based on a rental-equivalent treatment of housing costs back to 1967. This provides the basis for the OEP assessment in the CPI-W used for indexing Social Security benefits. The bias for 1975, the first year that Social Security was indexed to the CPI-W, was 1.1 percent. This bias mounted over subsequent years, reaching 6.5 percent by 1982 and then declining to 4.7 percent in 1984.

Overpayments of Social Security benefits resulting from the bias in the CPI-W mounted through 1983, reaching a total of $8.75 billion, or 5.55 percent of benefits paid in that year. These overpayments have resulted in a lower balance in the OASI trust fund and a larger federal deficit and debt. OEP estimates interest costs associated with these deficits at the rate of interest paid or projected to be paid on the OASI trust fund. Beginning in 1985 interest costs predominate in the total. In the current fiscal year the total cost is $22.09 billion, of which $17.76 billion is interest. The cumulative source of just this one source of bias in the CPI-W via this one program on the federal debt amounts to $273.0 billion, as of 1996.

The increases in federal outlays resulting from the bias in the CPI-W cannot be justified as cost-of-living adjustments. These increases are the consequence of an inappropriate treatment of housing costs before 1985 and have resulted in large transfers to beneficiaries of the OASI program that are devoid of any eco-

nomic rationale. The overpayments have continued up to the present but are declining in importance. However, the resulting decline in the OASI trust fund continues to mount due to rising interest costs and now contributes more than two hundred billion dollars to the federal debt.

II. Future Deficits

What will be the effect of an upward bias in the CPI on future budget deficits? More than half of federal spending of $1.5 trillion is now attributable to entitlements and mandatory spending programs. In January 1995 the annual Congressional Budget Office outlook for the economy and the federal budget showed that this proportion is expected to rise to almost two-thirds of federal spending during fiscal-year 1998. Cost-of-living adjustments at a projected rate of 3.0 percent will contribute $43 billion to total spending on mandatory programs in that year and $80 billion in fiscal-year 2000 (see Congressional Budget Office, 1995).

The Congressional Budget Office has provided updated projections for the impact of a hypothetical correction in cost-of-living adjustments of 1.0 percentage point. The total change in the deficit in the year 2006 is $134.9 billion. Federal revenues would be increased by $44.5 billion, and federal outlays reduced by $110.5 billion; of the reduction in outlays, $26.1 billion can be attributed to lower debt service and $64.4 to lower outlays on indexed programs.

Stated differently, if the change in the CPI overstated the change in the cost of living by an average of one percentage point per year over this period, this bias alone would contribute almost $135 billion to the deficit in the year 2006. This is one-third the projected baseline deficit (which assumes no policy change such as the current balanced-budget proposals). More remarkably, the upward bias by itself would constitute the fourth-largest federal outlay program, behind only Social Security, health care, and defense. By 2008 the increased deficit would be $180 billion and national debt $1 trillion. The corresponding figures for the Commission's estimate of the upward bias of 1.1 percentage points are over

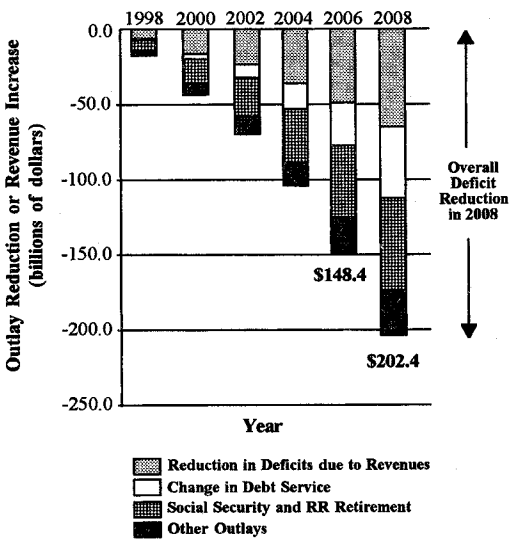

FIGURE 1. EFFECT OF CORRECTING AN OVERSTATEMENT OF 1.1 PERCENTAGE POINT IN THE CPI ON ANNUAL FEDERAL DEFICITS

Sources: For 1998–2006, Congressional Budget Office (1996); for 2007–2008, Commission estimate.

$200 billion and $1.1 trillion. Figures 1 and 2 provide additional detail.

In summary, the upward bias incorporates into the federal budget every year an automatic, real increase in indexed benefits and a real tax cut. Correction of biases in the CPI, while designed to adjust benefits and taxes for changes in the cost of living more accurately, would also contribute importantly to reductions in future federal budget deficits and the national debt. Lower outlays (cuts in indexed federal spending programs and reduced interest payments) account for over two-thirds of the long-run deficit reduction, while higher revenues account for the rest.

III. Understanding Economic Progress

As noted above, the Commission's estimate of the bias from using changes in the CPI as a measure of the cost of living is about 1.1 percentage point per year. A technical problem, introduced into the CPI in 1978 and corrected by the BLS early in 1996, adds about 0.2 percentage points per year. To gain some appreciation for the potential importance and

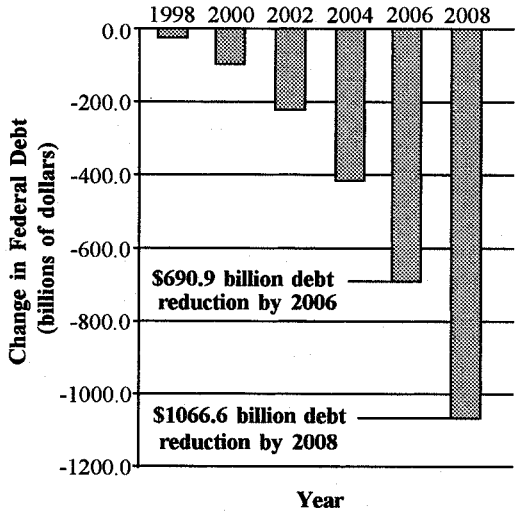

FIGURE 2. EFFECT OF CORRECTING AN OVERSTATEMENT OF 1.1 PERCENTAGE POINT IN THE CPI ON FUTURE FEDERAL DEBT

Sources: For 1998–2006, Congressional Budget Office (1996); for 2007–2008, Commission estimate.

ramifications of the overstatements, suppose that the changes in the CPI have been overstating changes in the cost of living by 1.1 percentage point since 1973 (plus the 0.2 percentage point attributed to formula bias from 1979–1995). Table 1 presents estimates of commonly used measures of economic progress, real average hourly earnings and real median family income, as deflated by the official CPI and by an adjusted cost-of-living index that grows more slowly than the official CPI by the amount of the estimated bias. Instead of falling by about 13 percent, real average hourly earnings have risen about 13 percent. Instead of stagnating, real median family income has risen over 30 percent. Clearly, the pace of improvement in living standards has slowed relative to the previous quarter century, but it has neither stagnated nor declined.

The table also includes an estimate of the poverty rate in 1995, using the adjusted cost-of-living index as opposed to the official CPI, derived from data in the survey of income and program participation (SIPP). The official poverty rate is 13.8 percent; the recomputed poverty rate with the COLI is 9.0 percent.

TABLE 1—HISTORICAL IMPLICATIONS OF A 1.1-PERCENTAGE-POINT UPWARD BIAS IN THE COST OF LIVING (1973–1995)

	Percentages, based on:	
Measure	CPI	Adjusted COLI
Δ Real average earnings	−13.5	12.6
Δ Real median income	4.3	35.7
Poverty rate, 1995	13.8	9.0

The national income and product accounts (NIPA) use the component CPI indexes as inputs. In principle, they would be subject to lower-level substitution bias, outlet bias, and much of the quality-change and new-goods bias. The Bureau of Economic Analysis (BEA), the statistical agency responsible for the NIPA, uses a chained Fisher measure which in principle would eliminate the upper-level substitution bias. The BEA also makes some additional quality adjustments not made by the BLS in producing the CPI component indexes. Thus, perhaps 0.7 or 0.8 percentage points per year would be a reasonable estimate to apply to the overstatement of inflation carrying over from the CPI to the consumption component of the national income accounts. Alternatively, over a long historical period, the personal consumption expenditures (PCE) deflator has grown about 28 basis points more slowly than the CPI. Again, this would get us a number of about 0.8.

Since consumption accounts for approximately two-thirds of GDP, taking 0.7 as a reasonably conservative estimate of the bias flowing into the price data in the NIPA would imply an understatement of the growth of real GDP, as a result of understating the growth of real consumption expenditures, of 0.4–0.5 percentage points per year. There undoubtedly are additional analogous problems raised in the investment-goods price measures, as well as those for government purchases and net exports. But even just relying on the consumption numbers, real GDP would be understated by approximately a half percentage point per year. Even a half percentage point per year compounded over a long span of time accu-

mulates to a sizable number. Real GDP, absolute and per capita, would be about 12-percent higher than the official statistics if such a bias held on average since 1973.

There are numerous other conceptual and measurement issues involved in all of the measures of economic progress. Fringe benefits and bonus payments become more important through time, rendering nominal average hourly earnings less relevant than a broader measure of compensation. Compositional effects change the size, age, and other characteristics of the median family. Poverty estimates based on income are likely to be less informative than those based on consumption, as evidenced by the fact that consumption exceeds income by almost 80 percent for the bottom part of the income distribution (see Jorgenson, 1997).

It is not just across time that economic progress or conditions are compared, but also across countries. While that raises another set of issues, it is important to understand that the basic problems described in Boskin et al. (1996) affect the statistics of every country. While some countries have made progress in ameliorating some of these problems in some areas (e.g., Statistics Canada with the movement to geometric means at the lowest level of aggregation removes some of the substitution bias), in other dimensions the American statistical system is far ahead of most other countries. For example, the widespread sampling done in the United States to collect price statistics undoubtedly gets some quality-change and new-product bias that is not picked up in other countries, even though it can and should be done in a much more timely fashion. Thus, the rates of real GDP growth, inflation, productivity growth, real wage growth, real family-income growth, and analogous measures are all misstated in virtually every country.

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