INDEXING WITH THE CONSUMER PRICE INDEX: PROBLEMS AND ALTERNATIVES

The Congress of the United States
Congressional Budget Office

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402

PREFACE

For the past several years, the behavior of the Consumer Price Index (CPI) has differed noticeably from that of other measures of price changes. This, together with the growing impact of indexation on the federal budget, has raised concern about current indexing practices. The Food Stamp Act Amendments of 1980 (P.L. 96-249) instruct the Congressional Budget Office (CBO) to review the CPI and various alternative price measures, examining the limitations of each and the reasons why they differ in their measurement of inflation or the cost of living. The purpose is to develop information that will assist the Congress in determining whether the CPI is the most appropriate indexation base for the Food Stamp Program, or whether alternative measures may better reflect changes in consumer prices or the cost of living. In keeping with CBO's mandate to provide objective and impartial analysis, this study offers no recommendations.

Lawrence E. DeMilner of CBO's Fiscal Analysis Division wrote the report. Robert W. Staiger assisted in its preparation and was primarily responsible for Appendix A. Sandra Christensen of CBO's Human Resources and Community Development Division prepared Appendix B under the supervison of Nancy M. Gordon. The author gratefully acknowledges helpful comments and information from James E. Annable, Jr., Stephen Chaikind, Robert A. Dennis, Heywood Fleisig, and Frederick O. Ribe of CBO, and G. William Hoagland and Robert D. Reischauer, formerly of CBO. In addition, information and comments were provided by Walter Lane and Jack E. Triplett of the Bureau of Labor Statistics, Vee Burke of the Congressional Research Service, Joseph J. Minarik of the Brookings Institution, and Robert J. Gordon of Northwestern University. In accordance with the legislation mandating this study, designated officials of the Departments of Agriculture, Commerce, and Labor were consulted in its preparation. In January of this year, a draft was submitted to the House Agriculture Committee and the Senate Agriculture, Nutrition, and Forestry Committee. Francis S. Pierce edited the manuscript; Kathleen M. Quinn, Marsha L. Mottesheard, Debra M. Blagburn, Dorothy J. Kornegay, and Margalo Ashley-Bennett typed the many drafts.

Alice M. Rivlin
Director

June 1981

CONTENTS

TABLES

FIGURES

SUMMARY

The purpose of this study is to assess the appropriateness of current indexation practices in the Food Stamp Program. Many of the issues discussed here will have relevance for other indexed federal programs as well. In particular, the study addresses the stated concern over the accuracy of the Consumer Price Index (CPI) and its consistency with other inflation measures.

THE INDEXATION PROBLEM

Considerable growth has occurred in the practice of indexing federal transfer programs in the last decade and a half. Between 1966 and 1980, the number of individual programs containing indexed provisions grew from 17 to 90. At present, almost a third of federal expenditure is directly linked to the CPI or related price measures, and over half of the federal budget is affected if indirectly indexed expenditures are added. A one percent increase in the CPI will automatically trigger nearly $2 billion of additional federal expenditures, at 1981 program levels.

The CPI, the measure most widely used for indexation, has been criticized for exaggerating increases in the cost of living. As the table shows, for the better part of the past decade the CPI has registered larger increases than has an alternative measure of consumer prices--the PCE chain index. Most of this discrepancy is attributable to a difference in the way homeownership costs are measured. Because the CPI does not distinguish between a home as an investment and as a source of shelter services, the rapid rise in the asset value of homeownership has been treated as an increase in the cost of living rather than as the increase in wealth that it has been for anyone already owning a home. In addition, homeownership is given an unrealistically large weight in the index because mortgage costs are counted along with the full purchase price. This makes the CPI very sensitive to swings in the mortgage rate of interest.

Another reason why the CPI has tended to overstate the rise in the cost of living is to be found in the use of a fixed market basket of goods and services for tracking price changes. Consumption patterns change over time, particularly in response to changes

SUMMARY TABLE 1. COMPARISON OF TWO PRICE INDEXES

Year	CPI	PCE Chain Index	Difference
1973	8.3	7.6	0.7
1974	12.2	11.0	2.2
1975	7.4	6.4	1.0
1976	5.1	4.9	0.2
1977	6.7	6.3	0.4
1978	9.0	8.0	1.0
1979	12.7	9.9	2.8
1980	12.5	10.4	2.1

NOTE: Figures represent percent changes at annual rates, fourth quarter to fourth quarter.

in relative prices. A fixed market basket measure compares the cost of the market basket in the base year with its cost today. But this does not provide an accurate measure of the change in the cost of living between recent years if current consumption patterns differ from those of the base year. Reductions in the share of gasoline in overall consumption since 1973 illustrate the importance of this point.

Although these two features account for most of the discrepancies between the CPI and the alternative measures of consumer prices, other features of the CPI also bear on its usefulness as an indexation measure. First, the importance of individual items in the market basket is determined by expenditure weights rather than by population weights. This means that when the expenditures of a wealthy family are averaged together with those of a poor family, the buying patterns of the former receive a larger weight. Consequently, luxury goods are given a higher weight and necessities such as food a lower weight than would be the case if each family were treated with equal importance. Second, taxes are treated asymmetrically. Increases in sales taxes show up directly in the CPI, but increases in income taxes do not. Substitution of one tax for another could, in principle, change the CPI without any real change occurring in prices. Third, nonmarket goods such as cleaner air and water and better safety and health are not included in the market basket, although their production requires resources and leads to higher prices for goods whose unregulated production would create noxious by-products. This suggests that some of the price increases during the 1970s may have reflected not just a higher cost of living but also a higher standard of living. Fourth, the use of an aggregate CPI to index programs that are targeted at certain demographic groups may not accurately reflect increases in the prices paid by those groups. Data suggest that the poor and the elderly may have somewhat different consumption patterns than the rest of the population. Finally, the CPI reflects changes in the prices of imported goods; if the intention of indexation is to redress the internal redistribution of income that results from inflation and not to cushion the public from a fall in real income resulting from higher import prices, the CPI is not a suitable measure. It should be added that, except for the homeownership and fixed market basket problems, almost all of these drawbacks are shared by other price measures.

ALTERNATIVES TO INDEXING WITH THE CPI

In considering alternatives to present indexation practices, it is useful to bear in mind the specific purpose of a given indexing provision--such as to maintain a certain minimum absolute living standard or to maintain a consumption standard that is constant in relative terms. It is also important to bear in mind the consequences of indexing to different kinds of price change. Indexing to across-the-board, generalized inflation tends to preserve the existing income distribution. In contrast, indexing that also includes relative price changes tends to redistribute income, since those who receive indexed income tend to gain at the expense of those who do not (see Chapter III).

Other Indexes

The CPI X-1. The Bureau of Labor Statistics now publishes a series of experimental price measures that offer alternative treatments of homeownership costs. While these measures in their current state contain some shortcomings they are, at least conceptually, improvements over the present CPI. The most intuitively appealing measure is the X-1, which isolates the investment aspect of home purchase from the consumption of shelter services by using the measure of market rent as a proxy for the implicit rent that the homeowner pays himself or forgoes by living in the house instead of renting it out.

The PCE Chain Index. A chain-weighted index for personal consumption expenditures is produced as a part of the National Income Accounts. It measures essentially the same market basket as the CPI but employs different concepts for certain items. The most important of these is a rental equivalence treatment of homeownership like that employed in the experimental CPI X-1. In addition, the PCE chain index uses an up-to-date market basket reflecting relatively current consumption patterns. The chain index thus avoids the upward bias associated with fixed-weight indexes and at the same time does not compound shifts in consumption patterns with price change as does the better-known implicit deflator form of PCE.

GNP Measures. By accepting a price measure that is somewhat broader than the one confined solely to consumption goods, it is possible to measure price change with the direct impact of import prices removed. This can be done with the index of gross national product prices, which measures all goods and services produced by the United States. Alternatively, subsets of GNP that are still free of the direct effect of import prices include GDBP (gross domestic business product), which subtracts principally the government sector, and PNB (private nonfarm business), which additionally subtracts the sometimes volatile farm sector. Personal consumption is the dominant component of each of these, accounting for nearly four-fifths of PNB. As is the case with the PCE, these series are available as fixed-weight, chain-weight, and implicit deflator measures, with the chain-weight being most suitable for measurement of period-to-period price change using up-to-date consumption patterns.

Wage Measurements. Wages can be used for indexation, instead of prices, as in a number of European and South American countries. Indexation with wages tends to preserve a relative standard of living in contrast to an absolute standard. As the economy expands through gains in productivity, these gains are reflected in higher wages. Wage indexation enables those receiving indexed benefits to share in this growth. Similarly, declines in wage growth relative to prices will also be transmitted to indexed benefits. One candidate for a wage index is the Hourly Earnings Index (HEI), which contains adjustments for overtime hours and employment shifts between high- and low-wage industries and occupations that might otherwise affect the measure of wage growth. Another candidate is the Spendable Earnings series that, although lacking the refinements of the HEI, has the advantage of providing a measure of after-tax wage income. This is done by subtracting an estimate of worker payments for Social Security and federal income taxes from gross weekly earnings. Indexation with the latter measure would result in changes in indexed benefits paralleling the spendable earnings of wage earners.

The Switching Proposal

A much-discussed proposal is to use either a wage or a price index, whichever has increased the least. The argument for this proposal is that it is unfair to give more inflation protection to federal beneficiaries than wage earners can obtain, particularly since the benefits are financed largely through payroll and income taxes on wage earners. One consequence of this proposal, however, would be to reduce progressively the real level of indexed federal benefits. Benefits would be reduced when real wages fell, but not restored when real wages rose. This difficulty could be overcome through a modification of the switching proposal that would reduce benefit levels when real wages fell but would make this reduction only temporary until real wages resumed their former level. When real wages resumed growing, the switch back to a price index would be delayed until benefits had reached their previous level in real terms.

Other Approaches to Indexing

Other approaches to indexing include putting a cap on benefit increases. Two variants have been proposed. One would cap benefit increases at some fraction of the CPI increase, say at 75 or 85 percent. The drawback of this formula is that it is arbitrary and automatic. Another approach would use a discretionary cap, similar to the manner in which federal pay is adjusted. Beneficiaries could receive the full index change unless the President proposed a lesser amount and the Congress did not override his proposal. This would have the advantage of being flexible so that it could be adapted to changing economic circumstances and different types of price behavior.

80-400 O - 81 - 2

THE FOOD STAMP PROGRAM

At present, three provisions of the Food Stamp Program are indexed:

- The level of the standard allotment is indexed to the prices of the Thrifty Food Plan;

- Applicants' income, for purposes of determining eligibility and benefits, is adjusted by a standard deduction that is indexed to changes in the CPI less food, and by itemized deductions the limit on which is indexed to a specific index developed from CPI data;

- Eligibility criteria are based on the poverty level defined by the Office of Management and Budget, which is adjusted by year-to-year changes in the CPI.

Policy Options for Indexing the Food Stamp Program

Thrifty Food Plan. The prices of the Thrifty Food Plan resemble the CPI food-at-home category except that some items are excluded and the remainder reweighted to reflect adequate nutritional standards and the consuming habits of low-income households. This method of indexing the level of food stamp allotments is tailored to maintaining the value of the specific benefits provided by the program. It suffers the shortcomings of a fixed, base-weighted index in not allowing for substitution or changing consumption patterns, and this may be more important within the food category where relative price changes are sometimes larger than in an overall consumption measure like the CPI. But these food price changes are often transient, and to capture their effects would require frequent updating of the market basket.

Currently there is no alternative index that would provide greater advantages in indexation, assuming that the purpose of indexation is to hold constant the absolute purchasing power of the food stamp benefits.

Standard Deduction Adjustment. Prior to the Food Stamp Act of 1977, low-income households were allowed to deduct a number of specific expenditures from their gross incomes for determining both eligibility and benefits. The 1977 legislation replaced these itemized deductions for expenditures with a standard deduction in order to simplify program administration. Since the specific expenditures and, therefore, the itemized deductions would have increased automatically over time with price inflation, indexation of the new standard deduction was proposed to maintain real benefits.

The CPI less food was chosen to index the standard deduction since the indexation of food was explicitly reflected in the Thrifty Food Plan index. The shortcomings of this index are essentially the same as those of the overall CPI--a tendency to overestimate because of the fixed market basket and because of the treatment of homeownership. An alternative measure without these shortcomings would be the PCE chain index with the food portion subtracted.

Itemized Deductions. The limit on the deduction for dependent care and for excess shelter costs is indexed to the shelter, fuel, and other utilities component of the CPI. The relationship, however, between dependent care expenses--which presumably would be spent on babysitting, day care, or perhaps home nursing--and this component of the CPI is questionable. Variation in the level of these costs might be better approximated by the behavior of wage rates or some magnitude such as the minimum wage, which is how babysitting prices are currently measured for the CPI.

In the case of excess shelter costs, the CPI shelter component has the shortcomings with regard to homeownership discussed earlier, but here the effect is intensified because the subcomponent measure is undiluted by the other 80 percent of the CPI. It is, furthermore, doubtful that food stamp recipients are numbered among current home buyers. A USDA survey indicates that 80 percent of beneficiaries rent their dwellings. Of the remainder, it is unlikely that a significant number are currently buying houses. In any case the CPI measure of rent would be a more representative index for this purpose.

Indexing the Poverty Level. The alternatives to the CPI as a general consumption price measure have been discussed above. Among currently available measures, the index that corrects the chief shortcomings of the CPI is the PCE chain index. But more is involved here than choosing the most appropriate price index. Articulation of the programs' objectives might include consideration of a relative standard that would adjust the poverty level according to changes either in a general wage index such as the HEI or in a Spendable Earnings series. Alternatively, if a demographic-specific CPI that reflected consumption habits of the low-income population were to become available at some time in the future, it might be a suitable means of indexing the poverty level, particularly if changes were made in the CPI to correct the home-ownership problem and to update the market basket more frequently. Finally, a more flexible approach to indexing might be adopted that would permit adjustments for exceptional circumstances, such as falling real wages or large relative price changes, while permitting increases in benefit levels when productivity gains raised real per capita incomes.

CHAPTER I. INTRODUCTION

The Food Stamp Act Amendments of 1980 (P.L. 96-249) require the Congressional Budget Office to review the Consumer Price Index (CPI) and various alternative consumer price or cost-of-living measures such as the Personal Consumption Expenditure deflator. The review is to examine the limitations of each alternative and the reason why the indexes differ in their measure of inflation or the cost of living. The purpose is to determine whether the CPI is the most appropriate index for the Food Stamp Program or whether alternative measures may better reflect changes in consumer prices or the cost of living.

The concern over indexation procedures in the Food Stamp Program and in other federal programs arises from questions as to:

- The growing impact of indexed programs on the federal budget;
- Accuracy in the CPI--the most widely used index measure;
- The adequacy of an aggregate measure like the CPI as a gauge of the cost of living of groups such as the poor and the elderly; and
- The fairness of allowing beneficiaries of federal programs to keep up with inflation when wage earners are falling behind.

Impact on the Budget

The circumstances leading to this study derive primarily from the impact of inflation on federal benefit programs during the 1970s. One response to inflation was to index provisions that were specified in current dollar amounts. From 1966 to 1980 the number of programs containing indexed provisions grew from 17 to 90.

In most of these programs, an increase in the Consumer Price Index will automatically lead to an upward adjustment of program benefits (or, in some cases, of eligibility criteria specified