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THE CONSUMER PRICE INDEX

by Lazare Teper

Editor's Note: Dr. Teper is an Economist and Director of the Research Department of the International Ladies' Garment Workers' Union, and he graciously accepted our invitation to contribute an article on the Consumer Price Index.

It is generally recognized that the purchasing power of a fixed pension declines as retirees find their living costs going up.

It is relatively simple to correct the amount of the pension for price changes by using the Consumer Price Index compiled by the Bureau of Labor Statistics. CPI is published monthly for the United States and monthly or quarterly for 23 Standard Metropolitan Statistical Areas with populations of one million or more. The national sample is based, however, on information gathered in 56 S.M.S.A.'s and smaller nonmetropolitan urban places with populations of 2,500 or more. The list of metropolitan areas for which indexes are published is subject to change whenever CPI undergoes a major revision.

Measures Only Price

Although CPI is frequently spoken of as the cost-of-living index, it is nothing of the sort since it measures but one component of living costs—price. It takes no account of changes in the levels of living brought about by the nation's increased ability to produce goods and services, by changes in consumption patterns as new goods and services become available and are promoted by advertising, by the disapperance of old goods, and by changes in consumer tastes. Thus it does not measure increased costs consumers face when they upgrade their levels of living.

It does reflect sales, excise and real estate taxes which form an integral part of the prices consumers have to meet, but on the other hand, it does not measure changes in purchasing power which occur when federal, state or local income taxes are modified. The scope of the CPI actually conforms more closely to income net of income taxes and savings.

As currently constructed, CPI measures price changes for a "market basket" of goods and services, a weighted sample designed to reflect all prices paid by urban wage earner and clerical worker family or individual consuming units. In 1960-61, the average family represented in the index was made up of about 3.7 persons with an after-tax income approximating $6,230 while single persons had an after-tax income of about $3,560. Single persons were first incorporated in CPI structure in 1964, but an 11-month test showed that CPI, with or without inclusion of singles, behaved substantially the same way.

All index numbers are artificial creations and CPI is no exception. Between revisions, it is compiled with price quotations for individual items or their combinations (the so-called expenditure classes) weighted in proportion to consumer expenditures during a reference period of a specified population group they represent (at the present time, the weights are based on consumer expenditures in 1960-61). Price quotations are obtained for comparable items to eliminate the effect of quality change. Thus, between revisions CPI tends to satisfy the operational criteria of measurement in scientific use—the ratio between any two values of the index approximates absolute significance independent of the size of the units in which the measurement is made.

Since the world does not stand still and major changes do occur in the types of goods and services available for consumption, it is necessary to revise periodically the structure of the index to take this into account. Such major revisions were undertaken in 1940, 1953 and 1964. During the Second World War and the Korean conflict, when some goods were not available and controls were in effect, index weights had to be temporarily modified. Even between revisions BLS has to introduce minor changes in its work when some goods and services become unavailable, their quality changes, or when new products replace the old. Techniques have been developed to minimize the impact of such changes on the conceptual structure of the index.

To provide a continuous series, whenever a new system of weights is adopted after a major revision, the new and old series are spliced so as not to affect the index level. Major revisions based on new consumer expenditure surveys hopefully will be undertaken in the future about 10-year intervals.

Although periodic controversies arise around the accuracy of CPI, no demonstrable proof of major inaccuracies exists. Over the years, techniques of price collection and the coverage of the index have been improved. The present use of replicated sampling techniques permits the computation of sampling errors. Specification pricing used by the Bureau's field agents helps to assure comparability and minimizes errors of observation.

CPI is designed to measure changes in prices paid by urban wage earners and salaried workers. It is used, however, for most other practical purposes involving the measurement of price changes paid by ultimate consumers. The likelihood is that it is equally adequate for adjusting the level of pension payments. (See letter from Preston C. Bassett, *The Actuary*, November 1968.)

As noted at the outset, however, CPI reflects changes in only one element of living costs. Other yardsticks have to be relied upon if one were to adjust pensions to reflect full changes in the cost of living.

Other Yardsticks

A clue for such a yardstick may be gleaned from the data on the cost of City Worker's Budget for a Moderate Living Standard priced in the autumns of 1951 and 1966 and the Retired Couple's Budget for a Moderate Living Standard priced in autumns of 1950 and 1966. These data reflect not only rising prices but also the intervening changes as to what constitutes a moderate living standard.

For the 18 cities where data were available for both periods, BLS estimated the increases in budget costs and the price impact based on special CPI tabulations for the particular groups and cities. Between 1951 and 1966, the cost of City Worker's Budget rose 104%, or on an average about 4.9% per year with prices rising about 2.3% per year and improvement in living levels about 2.6%. Between 1950 and 1966, the cost

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of the Retired Couple's Budget moved up 130% or about 5.3% per year, with prices up about 3.0% per year and improved levels of living 2.3%. Computations based on comparable data for autumns of 1959 and 1966 show that real upgrading in the level of living approximated an annual rate of 2.2% for City Worker's Families and 2.3% for Retired Couples.

These budgets reflect changes in the cost of living for the particular groups at a moderate level. Unfortunately, they are compiled infrequently and the older data are limited in terms of city coverage. The available figures, however, provide a rough check of other more regularly available data for such measurement. The quarterly and annual data on the changes in personal income and on wage and salary disbursements compiled by the Office of Business Economics of the Department of Commerce can readily be used for this purpose. These figures, computed per capita, reflect the wherewithal available to Americans for the maintenance of their changing levels of living as affected by price increases, i.e. changes in their cost of living.

Other Comparisons

Between 1950 and 1966, using annual data, the per capita personal income increased at the approximate annual rate of 4.4% and wage and salary disbursements at the rate of 4.7%. CPI during this period advanced at the average rate of 1.9% per year. Improvements in the real levels of living approximated on this basis 2.4% per year when measured in terms of personal income and 2.7% when related to wages and salary disbursements.

Data on per-capita personal income or wage and salary disbursements can be used as suitable approximations in adjusting pensions for changes in the cost of living. They are available on a current basis, though with a lag of a few months following the end either of a calendar quarter or of a year. They are also subject to subsequent revisions. CPI is typically not revised except in case of major computational or reporting errors. Should these figures be used, cumulative corrections would be introduced whenever the pension levels are scheduled for subsequent revisions through the use of the latest available figures and their comparison with the data last utilized.

It is also possible to compute the effect of the changes in the cost of living by combining CPI with data on the output per man-hour in the private economy. The latter statistics may be deemed to measure the ability of the nation to improve consumption, i.e. its real level of living. As shown by BLS, output per man-hour in the private economy gained between 1950 and 1966 at the approximate annual rate of 3.1% (the rate was about the same whether man-hours were derived from establishments reports or household surveys). With CPI moving up at about 1.9% a year, the estimated rise in the cost of living computed from these figures approximates 5.0% per year.

Initial Pension Adequate?

Information on the output per man-hour in the private economy is periodically released by the Bureau of Labor Statistics and is also published in the annual Economic Report of the President. The use of the current data on changes in output per man-hour could of course be replaced by data on its long range average behavior.

The adjustment of pensions for price changes alone or for changes in cost of living affected both by price changes and upgrading in living standards do not provide needed corrections if pensions were inadequate when first established. In the case of negotiated pensions, a review of their adequacy can take place in the course of contract negotiations. In the case of social security benefits, this is up to the Congress. No pre-determined formula can be provided to correct initial shortcomings of a pension structure. To be otherwise, all parties to the drafting of initial pension formulae would have to agree on the extent of inadequacies. This is not likely to occur. □

Social Security Integration

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for all employees and applicable to all service.

(4) The complex transitional clause has been simplified, but is still far from a full grandfather clause. Benefits accrued up to Jan. 1, 1972 under existing plans may be preserved without change, with formula changes affecting only future service benefits. Further, the prospective benefit at retirement, projected on the basis of current pay levels and the present formula, may be preserved as a minimum benefit for all employees at retirement, except for major stockholder-employees. This latter change is largely for the benefit of individual policy plans.

(5) The integration limits for females may be tested at age 60, rather than age 65 as in the proposed regulations. However, no liberalization is indicated for easing integration rules applicable to subsidized early retirement provisions which have become popular recently.

At present the full implications of the new regulations cannot be accurately determined until IRS issues a supplemental Revenue Ruling, which presumably will contain more detailed explanations and examples of the applications of the new rules.

With IRS now approaching the finale on this long-discussed integration question, one must conclude that the entire experience has been frustrating and disappointing. Despite sound actuarial and practical objections to the so-called mathematical approach from most experts in the field, including the actuaries at the Social Security Administration, Treasury did not change its approach. Most experts in the field believe that the integration regulations have always gone well beyond the intent of the Congress in writing the non-discrimination rules, but have been willing to go along with the prior rules as long as they produced a reasonable answer. Many observers now feel that the long-range implications of the new regulations on integrated plans are serious enough that it would be worthwhile to bring the whole matter before the Congress in order to clarify the intent of the original Internal Revenue Code provisions. □