Price and Income Changes for the Elderly

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It is widely believed that inflation is harmful to the elderly. Two frequent arguments in support of this belief are that some important income sources for the elderly are less than fully indexed to inflation and that the elderly spend heavily on goods and services whose prices rise faster than the average inflation rate. This article focuses on both the income issue and the expenditure issue. The first part of the article evaluates the question of whether an economy-wide consumer price index is an adequate measure of the cost of living for the elderly population. The evaluation is made by constructing a consumer price index using expenditure weights that are more appropriate for the elderly population. It is found that over the 1967–79 period the movement of this constructed index was very similar to that of the economy-wide index. The constructed index did grow slightly faster than the economy-wide index, however. The second part of the article focuses on changes in average real incomes of the elderly over the 1970–77 period. Two dimensions of income change are examined. First, the incomes of families headed by persons aged 65 or over are compared at different points in time. It is found that average real income of this age class was 10 percent higher in 1977 than in 1970. Second, the 1970 and 1977 incomes of the cohort of families headed by persons aged 65 or over in 1970 are compared. It is found that average real income of this cohort fell by 4 percent between 1970 and 1977.

There is an argument that inflation is harmful to the elderly since their income sources tend not to be indexed and since the prices of the goods and services they purchase tend to rise faster than average. Even though social security benefits have been fully indexed to rise with inflation since 1975, other income sources that are important to the elderly are not fully indexed and may not keep pace with inflation. Some believe that the average of prices paid by the elderly increases more rapidly over time than that for the general population because of differences in expenditure patterns between the two groups. Conversely, others believe the average of prices paid by the elderly increases less rapidly. This article presents some descriptive data for examining the validity of these arguments and beliefs for several recent periods of substantial inflation.

The first part of this article questions whether an economy-wide consumer price index is an adequate measure of the cost of living for the elderly population by constructing a crude consumer price index that incorporates expenditure weights more appropriate for that population. This question has recently received much public attention because of the use of an economy-wide consumer price index to index social security benefits. The index presented in this article, and several others specially constructed for the aged, moved in a manner quite similar to the movement of an economy-wide index.

The second part of this article provides a partial perspective on changes in the average real income of the elderly between 1970 and 1977. Two dimensions of income change are examined. The article first analyzes the change in income over time of the elderly age class

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(those families headed by persons aged 65 or older). The article then examines changes in real income for a particular elderly cohort (those families headed by persons aged 65 or older in 1970) as that cohort aged.

Consumer Price Index for Older Consumers

This part of the article presents the construction of consumer price indexes for older persons and for urban wage earners and clerical workers. These two indexes are then compared over time and discussed in terms of other recent research findings.

Published Consumer Price Index

For many years the Bureau of Labor Statistics (BLS) has been publishing the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W).[1] This price index is used to adjust social security benefits for inflation. The CPI-W is a statistical measure of the change in the cost of a fixed market basket of goods and services, that is, it employs fixed quantity weights.

To construct the CPI-W, the BLS collects price and expenditure data on hundreds of goods and services. It also publishes price indexes for many expenditure classes. The seven major expenditure classes for which price indexes are published are as follows: food and beverages, housing, apparel and upkeep, transportation, medical care, entertainment, and other goods and services.

The CPI-W now covers about 40 percent of the total noninstitutionalized population. Its weights for 1964-77 were derived from the 1960-61 Consumer Expenditure Surveys. In 1978 a switch was made to weights derived from the 1972-73 Consumer Expenditure Surveys.

Construction of Consumer Price Indexes

For the period 1967–79, an annual consumer price index for older consumers (CPI–O) is constructed. Table 1 presents a comparison of the CPI–O and a constructed consumer price index for urban wage earners and clerical workers (CPI–W_c; the subscript c denotes constructed).

The CPI–O is constructed using BLS price indexes for the seven major expenditure classes (each equal to 100.0 in 1967). These indexes are weighted together using the expenditure share weights for older consumers given in table 2.[2] For each year the expenditure class price indexes are those for urban wage earners and clerical workers. The seven weights for older consumers are derived from the 1972–73 Consumer Expenditure Surveys so as to approximate the BLS weight estimating procedures.[3] These weights are for all consumer units (urban or rural) headed by persons aged 65 or older and are used in computing the CPI–O for each year of the 1967–79 period.[4]

Table 1.—Constructed consumer price indexes: Annual indexes and percentage changes, 1967–79

[1967 = 100.0]

Year	CPI-O		CPI-W_c	
	Index	Percentage change	Index	Percentage change
1967	100.0	.....	100.0	.....
1968	104.2	4.2	104.2	4.2
1969	109.9	5.5	109.9	5.5
1970	116.5	6.0	116.2	5.7
1971	121.7	4.5	121.2	4.3
1972	125.7	3.3	125.1	3.2
1973	133.1	5.9	132.3	5.8
1974	147.9	11.1	147.0	11.1
1975	162.0	9.5	160.7	9.3
1976	172.0	6.2	170.6	6.2
1977	183.5	6.7	181.7	6.5
1978	197.6	7.7	195.2	7.4
1979	219.9	11.3	217.7	11.5

The published CPI–W is also a weighted average of the price indexes for the seven major expenditure classes. Thus differences between the CPI–O and the CPI–W are due to differences in the major expenditure class weights used. For each year of the 1967–79 period the weights for the CPI–W and the CPI–O should be derived from the same consumer expenditure survey so that differences between the indexes will be the result of differences between the consumption patterns of these two groups during the same time period. Since the published CPI–W for the period 1967–77 used major expenditure class weights derived from the 1960–61 Consumer Expenditure Surveys, it was necessary to construct a consumer price index for urban wage earners and clerical workers (CPI–W_c) using 1972–73 Consumer Expenditure Survey data.

The CPI–W_c is constructed as follows.[5] The published BLS price indexes for the seven major expenditure classes are weighted together using the expenditure share weights for urban wage earners and clerical workers given in table 2. These weights are derived from the 1972–73 Consumer Expenditure

[1] In 1978 the BLS began publishing a second index: Consumer Price Index for All Urban Consumers (CPI-U). Material on the CPI-U is presented in the appendix.

[2] It is shown in the appendix that this procedure produced a consumer price index with fixed quantity weights and a 1967 consumer price index of 100.0.

[3] The derivation of weights is discussed in the appendix.

[4] Due to time and resource constraints, it was not feasible to derive a set of seven weights for older consumers from the 1960–61 Consumer Expenditure Surveys to use in constructing the consumer price index for older consumers for the 1967–77 period.

[5] The appendix also presents constructed consumer price indexes for all urban consumers, for all consumers, and for all nonaged consumers.

Table 2.—Percentage distribution of costs of constructed CPI market baskets,[1] by expenditure class

Expenditure class	CPI-O	CPI-W_c
All classes	100.0	100.0
Food and beverages	21.6	20.0
Housing	38.5	39.1
Apparel and upkeep	5.9	7.2
Transportation	15.8	20.9
Medical care	9.5	4.0
Entertainment	4.2	4.3
Other goods and services	4.5	4.5

[1] Quantities or market baskets for 1972-73 at 1967 prices.

Surveys and are used in computing the CPI-W_c for each year of the 1967–79 period. All differences between the CPI–O and the CPI-W_c are due to the use of different major expenditure class weights.

Comparison of Constructed Indexes

During the period 1967–79, the CPI–O increased slightly faster than the CPI-W_c. The CPI–O increased from 100.0 to 219.9 and the CPI-W_c increased from 100.0 to 217.7. The average annual rates of increase were 6.8 percent and 6.7 percent, respectively. The CPI–O increased 1.02 percent for each percent increase in the CPI-W_c ($119.9 \div 117.7 = 1.02$). The slightly faster increase of the CPI–O was rather persistent. As shown in table 1, for 11 of the 12 years, the percentage increase of the CPI–O was slightly greater than (7 years) or the same as (4 years) that of the CPI-W_c. For the last year of the period, however, the percentage increase of the CPI O was slightly less than that of the CPI-W_c.[6]

Expenditure class price indexes that rise faster (slower) than the overall CPI-W_c are said to rise relatively fast (slow). Expenditure classes, which account for a larger (smaller) share of the cost of the market basket for older consumers than of the cost of the market basket for urban wage earners and clerical workers, are said to be relatively more (less) important to the aged. The two expenditure classes of medical care and food and beverages, which clearly were relatively more important to the aged (table 2), had relatively fast rates of price increase over the 1967–79 period. The following tabulation shows 1979 price index values for the seven major expenditure classes. Medical care contributed substantially to the CPI–O rising faster than the CPI-W_c. Apparel and transportation, which clearly were relatively less important to the aged, had relatively

Expenditure class	CPI-W (1967 = 100.0)
Food and beverages	228.7
Housing	227.5
Apparel and upkeep	166.4
Transportation	212.8
Medical care	240.1
Entertainment	187.6
Other goods and services	196.3

slow rates of price increase. The remaining three expenditure classes are not clearly either more or less important for the aged. The differences shown in table 2 are 0.6 percentage points or less and the estimated expenditure shares for the aged are subject to error. (Appendix table II may give some rough indication of the direction and magnitude of these errors.)[7]

Other Recent Research

Three papers recently have been published that estimate consumer price indexes for older consumers. Another recent paper examines the more general topic of group-specific consumer price indexes.

Borzilleri (1978)[8] constructed a monthly consumer price index for older persons (CPI-O_b; the subscript b denotes Borzilleri) for January 1970 through March 1977. He derived 15 expenditure class weights from the 1972–73 Consumer Expenditure Interview Surveys. His method gives housing weights considerably lower than those produced by the method used for the CPI–O constructed for this article, which closely approximates the BLS method. He also constructed a "new" consumer price index for all consumers using the same approach.

For the period 1970–76, the CPI-O_b increased slightly faster than the CPI–O; on the contrary, the new CPI and the CPI-W_c increased at almost the same rate. The CPI-O_b increased 48.8 percent (6.8 percent per year) while the CPI–O increased 47.6 percent (6.7 percent per year). The CPI-O_b increased 1.025 percent for each percent increase in the CPI–O ($48.8 \div 47.6 = 1.025$). The new CPI increased 46.9 percent (6.6 percent per year) while the CPI-W_c increased 46.8 percent (6.6 percent per year).[9] The CPI-O_b increased 1.04 percent for each percent increase in the new CPI

[6] Recall that for the 1968–77 period the CPI-W_c and CPI-W used substantially different weights. For 7 of these years (1968–72 and 1976–77) the CPI-Wc and the CPI-W differed by 0.2 percentage points or less. For 1973, 1974, and 1975, however, the CPI-W_c was less than the CPI-W by 0.8 percentage points, 0.7 percentage points, and 0.5 percentage points, respectively.

[7] Seven "partial" CPI–O's and seven "partial" CPI-W_c's were also constructed. Each partial index excluded one of the seven major expenditure classes. Over the 1967–79 period, each partial CPI–O increased slightly faster than each corresponding partial CPI-W_c. The exclusion of two components of housing expenditure (home purchase and mortgage interest) from the CPI–W is examined in the appendix.

[8] Source documents cited in the text refer to author and year of publication. The full citations are grouped under References at the end of this article.

[9] For this period, the constructed consumer price index for all consumers—shown in the appendix as CPI–A—increased 46.6 percent.

(48.8 ÷ 46.9 = 1.04) while the CPI–O increased 1.02 percent for each percent increase in the CPI–W_c. The slightly faster increase of the CPI–O_b than of the new CPI was rather persistent. For 5 of the 6 years, the percentage increase of the CPI–O_b was greater than (4 years) or the same as (1 year) that of the new index for all consumers.

Molefsky (1980) constructed an annual consumer price index for older consumers (CPI–O_m; the subscript m denotes Molefsky) for 1978 and 1979 only. For the seven major expenditure classes (the same ones used in the CPI–O), he derived seven expenditure weights for older consumers (somewhat different from those used in the CPI–O) from the 1972–73 Consumer Expenditure Interview Surveys. These weights were used to weight together the BLS expenditure class price indexes for all urban consumers. (Each expenditure class index was 100.0 in 1967.)

For the period 1967–79, the CPI–O_m increased slightly faster than the CPI–O. The CPI–O_m increased 121.4 percent (6.85 percent per year) while the CPI–O increased 119.9 percent (6.79 percent per year). The CPI–O_m increased 1.01 percent for each percent increase in the CPI–O (121.4 ÷ 119.9 = 1.01). On the other hand for 1978–79, the CPI–O_m increased at a slower rate than the CPI–O (10.3 percent versus 11.3 percent).

The CPI–O_m and the CPI–O differ because of (1) differences in major expenditure class weights, and (2) differences in major expenditure class price indexes used. Apparently, the weight estimating procedures used for the CPI–O approximate the BLS procedures more closely than do Molefsky's procedures. For 1978 and 1979, the CPI–O used expenditure class price indexes for urban wage earners and clerical workers while Molefsky used expenditure class price indexes for all urban consumers.

As part of a study done for the American Association of Retired Persons, Data Resources, Inc. (DRI) constructed consumer price indexes for five age groups (under 55, 55–61, 62–64, 65–71, and 72 or older) for the 1967–90 period (Duffy and others 1980). The DRI study derived weights for seven expenditure classes (not from the same set used for the CPI–O) based partly on the 1972–73 Consumer Expenditure Surveys. These weights were changed over time to take account of historical and forecast changes in the distributions of income and family status. For each of the five age group indexes the DRI study shows average annual growth rates for six periods: 1967–70, 1970–73, 1973–75, 1975–80, 1980–85, and 1985–90.

For the 1967–75 period, DRI's price indexes for older persons increased slightly faster than the CPI–O. The indexes for consumers aged 65–71 and 72 or older increased 63.0 percent (6.3 percent per year) and 64.1 percent (6.4 percent per year), respectively, while the CPI–O increased 62.0 percent (6.2 percent per year). The DRI study also found that prices increase slightly faster for older consumers than for all consumers.

According to DRI, the rate of inflation increased slightly with age. For 1967–80 DRI price indexes increased at average annual rates of 6.9 percent for those under age 55; 7.0 percent, aged 55–64; 7.1 percent, aged 65–71; and 7.2 percent for the 72 or older group. This general pattern begins about 1970 and is forecast to continue during the 1980's. The three expenditure classes—food at home, medical care, and fuel and utilities, which consistently increased in relative importance as age increased—all had relatively fast rates of price increase. In addition to finding a slightly higher inflation rate for the oldest group than for those aged 65–71, DRI also found a somewhat higher inflation rate for the low-income elderly than for the high-income elderly.

In another recent paper, Michael (1979) presents the construction of a separate consumer price index for each of about 12,000 families that were interviewed in the 1960–61 Consumer Expenditure Surveys. For each family, the BLS price indexes for 52 expenditure classes are weighted together using weights specific to that family. Indexes were computed from January 1967 through June 1974.

For each of seven age groups, Michael computes the means and standard deviations of the family-specific price indexes. He found that the rate of inflation (as measured by mean price indexes) increased somewhat with age. For the period 1967–72, inflation was faster than average for the three aged 50 and older groups (50–59, 60–69, and 70 or older) and slower than average for three of the four under age 50 groups (20–29, 30–39, and 40–49). On the other hand, Michael found that the differences between age group rates of inflation (means) were quite small compared with the dispersion of rates of inflation within age groups (as measured by standard deviations); from such findings it can be argued that age-group-specific price indexes may well not provide much greater precision than an economy-wide consumer price index about the impact of inflation on average price changes experienced by households in these various age groups.

A study now underway at the Bureau of Labor Statistics also examines the more general topic of group-specific consumer price indexes. Separate consumer price indexes have been constructed for each of about 14,000 urban families interviewed in the quarterly 1972–73 Consumer Expenditure Surveys. For each family the BLS price indexes for about 40 expenditure classes have been weighted together using weights specific to that family. These family-specific indexes are now being analyzed. An important feature of the BLS study is that it examines alternative treatments of home ownership in the consumer price index.

Summary and Comments

For the 1967-79 period, the CPI–O rose slightly faster than the CPI–W_C. This slightly faster increase of the CPI–O was fairly persistent. Medical care (which was relatively more important to the aged and had a relatively fast rate of price increase) contributed substantially to the faster increase of the CPI–O. These findings and those of the other recent studies are rather consistent.

The DRI study found that the rate of inflation increases slightly with age. Thus the aged 72 or older group experienced slightly higher rates of inflation than did the group aged 65–71. Michael's data give some support to this finding. The study by DRI also found a somewhat higher inflation rate for the low-income old than for the high-income old. The DRI study forecasts these general patterns to continue during the 1980's. Michael found the differences between age group rates of inflation are quite small compared with the dispersion of rates of inflation within age groups; this is an important finding.

The CPI–O constructed for this article has clear weaknesses. It weights together seven expenditure class indexes published by BLS for urban wage earners and clerical workers (W) using expenditure share weights for older consumers. In calculating such expenditure class indexes, the BLS uses weights and item prices for W; thus, these weights and prices are not those for older consumers, retired consumers, or social security beneficiaries. The problem of inappropriate weights can be lessened by disaggregating, that is, by weighting together a larger number of W expenditure class indexes using the corresponding expenditure share weights for older consumers. The BLS study uses some 40 expenditure classes. It is not clear how the use of more expenditure classes would affect a consumer price index for older consumers. Disaggregation could produce a higher or lower index for older consumers. The effect of disaggregation needs to be determined empirically.

The distribution of expenditures of older consumers by type of selling outlet may well differ substantially from that of the W. Thus, at the item level, percentage changes in average prices paid by older consumers may differ from percentage changes in prices paid by the W. It is not clear how the use of item price data for older consumers would affect a consumer price index for older consumers. The effect of using item prices for older consumers would need to be determined empirically. Item price data for older consumers, however, are not available and would be fairly expensive to collect.[10]

[10] Home ownership is not treated very satisfactorily in the CPI–W, the CPI–W_C, or the CPI–O. Improving the treatment of home ownership in these indexes is outside the scope of this article. Alternative experimental treatments of home ownership in the CPI–U are discussed in **CPI Issues**, BLS Report No. 593, 1980.

Changes in the Real Income of the Elderly, 1970–77

This part of the article provides a partial perspective on changes in the economic status of elderly family units between 1970 and 1977. This was a period of substantial inflation even though it contained one of the severest recessions this country has experienced since World War II. The focus here is on changes in average (mean) real before-tax money income of the elderly.[11] The income data used are from the March Current Population Surveys (CPS).[12] The CPS income measure is not ideal for the purposes of this analysis. Income in kind (items such as food stamps, Medicare, and job-related fringe benefits), capital gains and losses (on stocks, bonds, real estate, and other assets and debts), and the value of leisure time are not included in this income measure. Another problem with the CPS income data is that they contain substantial reporting errors. There is substantial net underreporting of income amounts on the CPS.[13] Also, the CPS gathers data on before-tax income, but the interest here is the change in disposable income of the elderly. An after-tax income measure is therefore preferred. These problems of omission and measurement may cause a substantial underestimate of total family income, especially for the elderly. The estimates of the change in average real family income will be biased if the percentage rate of change of "ideal" income differs from the percentage rate of change of CPS income. Finally, changes in the CPS questionnaire and in methods of imputing responses for the 1970-77 period may affect the comparability of the data over the period.

It should be noted that this article does not deal with income adequacy or with income distribution among elderly units. Questions concerning whether the level of real income is high enough according to some standard of adequacy or whether the distribution of income is fair according to some equity criteria are not addressed. The focus here is on the change in average real income from one point in time to another.

Two dimensions of income change are examined. First, the article analyzes changes in real income over time for the same age class. Then, it examines changes in income for a given elderly cohort as that cohort aged. The first approach compares incomes at different points in time for the elderly age class (those families headed

[11] No tests were made that would indicate whether these income changes were statistically significant.

[12] For a description of this survey, see Department of Commerce, Bureau of the Census, **The Current Population Survey: Design and Methodology** (Technical Paper No. 40), January 1978. It should be noted that the data used for 1974 are from the revised CPS income data tape for that year. For a discussion of the revision, see Bureau of the Census, "Consumer Income," **Current Population Reports** (Series P-60, No. 105), June 1977.

[13] For a discussion of differences between CPS income estimates and independent control totals, see Radner (1978).

by persons aged 65 or older), and for the nonelderly age class. The second approach focuses on what happened to the average real income of the elderly cohort over time.[14] The elderly cohort is that group of families headed by persons aged 65 or older in 1970, aged 66 or older in 1971 . . . and aged 72 or older in 1977.

Income Change by Age Class

The literature on the growth of real income of the elderly is not very extensive. The study done by Duffy and others (1980) for the American Association of Retired Persons found that the incomes of the elderly increased relative to both inflation and the incomes of the nonelderly over the period 1967–77. An earlier study by Torda (1972) found that the incomes of the elderly tended to keep pace with inflation because real increases in social security benefits implemented between 1965 and 1970 allowed the average incomes of the elderly to grow at a slightly faster rate than inflation. Several other studies by Brimmer (1971), Budd and Seiders (1971), Nordhaus (1973), and Minarik (1978) have looked at changes in the income distribution during inflationary periods but did not focus specifically on the income of the elderly.

The elderly age class is defined in this article as families headed by persons aged 65 or older. Families include one-person families as well as multiperson families. Through time the families in this elderly age class will change as additional family heads attain age 65 and as some existing elderly family heads leave this age class.[15] The nonelderly age class is defined as families headed by persons aged 64 or younger.

The changes in the income of the elderly age class are appraised by (1) examining changes in average (mean) real income of the elderly age class over the period, and (2) examining the change in the average real income of the elderly relative to that of the nonelderly by using the ratio of the average real incomes of these two age classes. Most of this section discusses how the average real incomes of the elderly and nonelderly were affected by changes in the various components of income and what factors caused changes in these components.

Table 3 shows definite patterns in the growth of the average real incomes of the elderly and nonelderly and of the ratio of these average real incomes over the 1970–77 period. Average real income of elderly families increased about 10 percent between 1970 and 1977.[16] Average real income of the nonelderly was essentially the same at the end of the period as at the beginning. This may, in part, be due to the changing age profile of the nonelderly age class. Thus, the average real income of the elderly increased over this period in relative terms as well as in absolute terms. The ratio or relative income measure increased from 0.49 to 0.54 between 1970 and 1977, with all of the increase occurring by 1974.[17] After 1974 the ratio was essentially a constant. The average real income of the elderly grew between 1970 and 1974 and then fell slightly from the 1974 peak. The average real income of the nonelderly peaked in 1972, fell through 1976, and rose slightly in 1977.

Table 4 presents the shares of total average real income contributed by various income components for each of the two age groups for 1970, 1974, and 1977.[18] For the elderly, the share of earnings in total income fell rather dramatically from 40 percent to 28 percent over the 1970–77 period. This decline resulted in large part from changes in age-specific retirement behavior of that age class rather than from changes in the age distribution within the age class.[19]

[14] The CPS is not a longitudinal data set. Therefore, this analysis does not follow the same individuals through time. However, the CPS is designed to survey a statistically representative sample of the noninstitutionalized population of the United States.

[15] There are many ways a CPS family might enter or leave the elderly age class. A one-person family will enter the elderly age class when the person turns age 65. The person will leave the elderly age class when he dies, becomes institutionalized, or becomes a member (but not the head) of a nonelderly family. The means of entry and exit are more numerous and more complicated for multiperson families than for one-person families. The family will still enter the elderly age class when the family head turns age 65. When the original family head dies or becomes institutionalized, the family leaves the elderly age class only if the new family head is under age 65. The various ways a CPS family can enter or leave the nonelderly age class will not be discussed.

[16] The CPI–O presented in the first part of this article was used to deflate the income of the elderly. The CPI–W was used to deflate the income of the nonelderly. The choice of indexes had little effect on the values presented in table 3. By using separate indexes to deflate the incomes of the elderly and nonelderly the differential impact of inflation on the incomes of the two age classes has been taken into account.

[17] The average family size of the nonelderly fell from 3.2 in 1970 to 2.9 in 1977 while that of the elderly remained constant at 1.7. When family size is taken into account, the economic status of the nonelderly age class also improved over the 1970–77 period. Thus, table 3 overstates the improvement in the economic status of the elderly relative to that of the nonelderly.

[18] The income components used in this article are: Earnings (wages and salaries and farm and nonfarm self-employment income), property income (interest income, dividends, rental income, and income from estates and trusts), social security benefits (retirement and disability income from both the social security and railroad retirement systems), and other transfer income (a catchall category including supplemental security income, public and private pensions, public assistance, unemployment and workers' compensation, veterans payments, alimony, child support, contributions, and other periodic income). Public and private pension income is available as a separate income category beginning 1974. The income component analysis is restricted to 1970, 1974, and 1977 to simplify the discussion. Little information is lost by ignoring data for the other years.

[19] Indeed, from 1970 to 1977 the labor-force participation rate of men aged 65 or older fell from 26.8 percent to 20.1 percent, a 25-percent reduction; that of elderly women decreased from 9.7 percent to 8.1 percent, a 16.5-percent reduction. The average age of elderly men decreased very slightly (0.1 percent) and that of elderly women increased very slightly (0.3 percent) over the period, suggesting that there was little change in the age distribution within the elderly class.

Table 3.—Average real incomes of elderly and nonelderly families and the ratio of these incomes, selected years

Year	Average real family income[1]		Ratio[2]
	Elderly	Nonelderly	
1970	$4,495	$9,165	0.491
1972	4,895	9,565	.512
1974	5,015	9,275	.541
1976	4,915	9,060	.543
1977	4,925	9,140	.539

[1] The CPI-O (1967=100.0) and CPI-W (1967=100.0) were used to deflate the incomes of the elderly and nonelderly, respectively; values rounded to nearest $5.

[2] Ratios reflect unrounded values.

While the earnings share of total income fell by 12 percentage points over the period, the share of social security income increased by 9 percentage points from 28 percent to 37 percent. The share of income from property and other transfer income increased slightly.

On the other hand, the data show that the component shares of nonelderly income remained almost constant over the 1970–77 period. The share of total income from earnings, which was by far the most important income component for the nonelderly, decreased slightly over the period. The shares from both social security income and other transfer income increased very slightly.

Table 5 presents the levels of average real income by source for the elderly and nonelderly for 1970, 1974, and 1977. It also shows the percentage change in total income and in each income component from 1970 to 1974, from 1974 to 1977, and from 1970 to 1977. Real earnings of the elderly fell by more than 20 percent between 1970 and 1977. As stated earlier, this decrease

Table 4.—Percentage distribution of average real family income, by source and age class, selected years

Income source and age class	1970	1974	1977
Total:			
Under age 65	100	100	100
Aged 65 and over	100	100	100
Earnings:			
Under age 65	92	91	90
Aged 65 and over	40	32	28
Property:			
Under age 65	3	3	3
Aged 65 and over	17	17	18
Social security benefits:			
Under age 65	1	2	2
Aged 65 and over	28	35	37
Other transfer income:			
Under age 65	4	4	5
Aged 65 and over	15	16	17
Pensions:			
Under age 65	.....	1	2
Aged 65 and over	.....	12	13
Other transfer income excluding pensions, 1974-77:			
Under age 65	.....	3	3
Aged 65 and over	.....	4	4

Table 5.—Average real family income and percentage change in income, by source and age class, selected years

Income source and age class	Amount[1]			Percentage change[2]		
	1970	1974	1977	1970 to 1974	1974 to 1977	1970 to 1977
Total:						
Under age 65	$9,165	$9,275	$9,140	1.2	-1.5	-0.3
Aged 65 and over	4,495	5,015	4,925	11.6	-1.8	9.6
Earnings:						
Under age 65	8,455	8,400	8,190	-.6	-2.5	-3.1
Aged 65 and over	1,795	1,610	1,390	-10.3	-13.6	-22.5
Property:						
Under age 65	265	290	310	9.1	7.0	16.7
Aged 65 and over	750	850	875	13.3	2.9	16.6
Social security benefits:						
Under age 65	115	160	175	38.5	9.2	51.3
Aged 65 and over	1,265	1,750	1,820	38.3	4.2	44.1
Other transfer income:						
Under age 65	330	420	465	28.3	9.7	40.7
Aged 65 and over	685	810	835	17.8	3.3	21.7
Pensions:						
Under age 65	.....	130	150	.....	15.6	.....
Aged 65 and over	.....	590	615	.....	3.9	.....
Other transfer income excluding pensions, 1974-77:						
Under age 65	.....	295	315	.....	7.1	.....
Aged 65 and over	.....	220	220	.....	1.8	.....

[1] The CPI-O (1967=100.0) and CPI-W (1967=100.0) were used to deflate the incomes of the elderly and nonelderly, respectively, values rounded to nearest $5.

[2] Percentage changes reflect unrounded values.

was primarily due to the declining labor-force participation rate of the elderly. For reasons that are unclear from the data, real property income of the elderly age class increased by 17 percent. The elderly's real social security income increased by almost 45 percent. This large percentage increase, combined with social security's large share of total income, made the growth of social security income the most important factor in the growth of the elderly's total real income over the 1970–77 period. This large increase in social security income may be attributed in part to legislated benefit increases, in part to the increase in the number of beneficiaries, and in part to the higher than average benefits of new beneficiaries. Other transfer income, which includes pensions, increased by more than 20 percent over the 1970–77 period. This increase may have been caused by the increase in the number of pension beneficiaries,[20] the introduction of the supplemental security income program (which replaced old-age assistance), and to a recession-induced increase in unemployment compensation.

The real earnings of the nonelderly fell by about 3 percent over the 1970–77 period (table 5). This decline in real earnings was caused primarily by the 1973–74 recession and the slow recovery from that recession.

[20] According to Skolnik (1976) and Yohalem (1977), the number of pension beneficiaries increased from 4.7 million in 1970 to 7.5 million in 1975. Data are not available beyond 1975.

Other causes include a reduction in the rate of growth of productivity and a shift in the age distribution toward younger families who have lower earnings. This decline in real earnings was large enough to cause the total real income of the nonelderly to decline very slightly even though every other income component showed substantial real gains over the period.

Other transfer income (including pensions) increased more than 40 percent. A large portion of this increase was no doubt due to recession-induced increases in unemployment compensation and public assistance.

Average real social security benefits for the nonelderly increased more than 50 percent. The greatest portion of this increase was caused by a doubling of the number of social security disability beneficiaries to 2.8 million and a 25-percent increase in real disability benefits per beneficiary.[21] The number of social security retirement beneficiaries also increased, from 1.2 million to 1.9 million,[22] but the effect of this increase on nonelderly average real social security income was minor compared with the disability effect. This large percentage increase in real social security benefits did not have much effect on the total real income of the nonelderly because social security is such a small fraction of their total income. Income from property increased about 17 percent in real terms for the nonelderly over the period.

The data show that between 1970 and 1974 the economic position of the elderly, as measured by their average real income levels, improved in both absolute and relative terms. From 1974 to 1977, however, the average income of the elderly did not keep pace with inflation and has essentially remained an unchanging fraction of the nonelderly's income. Table 5 indicates which components of total income led to these results. The earnings of both the elderly and the nonelderly age classes declined over the 1970–77 period. All unearned income components (components of income other than earnings) increased for both age classes over the period. The greatest percentage increases occurred between 1970 and 1974. The increases in unearned income for the nonelderly were dominated by the decrease in their earnings. This decrease led to a very slight reduction in the average real income of the nonelderly age class over the 1970–77 period. The increase in unearned income for the elderly, however, swamped the decrease in their earnings. Thus, the average real income of the elderly age class was substantially higher in 1977 than it was in 1970.

Income Changes of 1970 Elderly Cohort

This section focuses on what happened to the average real income of the 1970 elderly cohort over the 1970–77 period.[23] This cohort consists of families headed by persons aged 65 or older in 1970. It should be noted that in 1970 the elderly age class and the elderly cohort contained exactly the same set of families. Through time many new families entered the elderly age class but very few new families entered the elderly cohort.

Table 6 presents the average real income by component for the 1970 elderly cohort in 1970, 1974, and 1977. It also presents the percentage change in each component between 1970 and 1974, 1974 and 1977, and 1970 and 1977. The average total income of the 1970 elderly cohort increased slightly over the 1970–74 period but fell by more than 5 percent between 1974 and 1977. The net result over the 1970–77 period was a 4-percent reduction in the real average total income of the 1970 elderly cohort.

This decline in the 1970 elderly cohort's total real family income was due solely to a decline in the real earnings of the cohort. All unearned income components increased in real terms over the period. The decline in earnings resulted primarily from a decline in this cohort's labor-force participation as it aged. Other possible reasons for the decline include the higher unemployment rate for the elderly due to the 1973–74 recession and the general decline in the rate of productivity increase that occurred during the 1970's.

Table 7 shows that the percent of cohort families with earnings fell from 41 percent in 1970 to 23 percent in 1977. As the labor-force participation rate for an elderly cohort declines, the average income for that cohort also tends to decline since retirement income such as social security retirement benefits and pension benefits typically does not fully replace the earnings lost due to retirement. Over the 1970–74 period the average real income of the 1970 elderly cohort increased slightly despite the decline in earnings. This unexpected result

[21] **Social Security Bulletin,** June 1978, page 42, table M–12. Deflators are from table M–45, page 69.

[22] **Social Security Bulletin,** June 1978, page 44, table M–14.

[23] Again, this analysis does not follow the same individuals through time since the Current Population Survey is not a longitudinal data set.

Table 6.—Average real family income and percentage change in income of 1970 elderly cohort, by source of income, selected years

Income source	Amount[1]			Percentage change[2]		
	1970	1974	1977	1970 to 1974	1974 to 1977	1970 to 1977
Total	$4,495	$4,565	$4,305	1.5	-5.6	-4.2
Earnings	1,795	1,160	830	-35.2	-28.7	-53.8
Property	750	855	900	14.1	5.1	20.0
Social security benefits	1,265	1,800	1,840	42.4	2.3	45.7
Other transfer income	685	745	735	8.7	-1.5	7.1

[1] The CPI-O (1967 = 100.0) was used to deflate the income amounts; values rounded to nearest $5.

[2] Percentage changes reflect unrounded values.

Table 7.—Percent of 1970 elderly cohort families with income from specified sources, selected years

Income source	1970	1974	1977
Earnings	41.0	29.8	23.0
Property	53.1	59.3	60.9
Social security benefits	85.1	93.2	94.9

was due primarily to the large real increase in social security income. It should be noted that the labor-force participation rate for this cohort should be expected to decline since the youngest family heads of this cohort aged from 65 to 72 during the 1970–77 period.

Even though the earnings of the 1970 elderly cohort declined because of retirement, all other income components for this cohort increased. A large part of this increase in unearned income was also retirement related. Social security income increased almost 46 percent in real terms over the full period, and other transfer income, which includes pensions, increased 7 percent. Over the 1970–77 period, the proportion of cohort families receiving social security benefits rose by 12 percent and the average real benefit per beneficiary family rose by 30 percent. The legislated increase (including automatic increases) over the period was 13 percent.

Most of the increase in social security income for the 1970 elderly cohort occurred during the 1970–74 period (table 6). The rate of increase declined dramatically during the 1974–77 period. The two most important explanations for this pattern are changing retirement rates and the indexing of social security benefits. Retirement rates are greater for those aged 65-69 than for those aged 70 and older. Between 1970 and 1974 the youngest family heads in the cohort aged from 65 to 69. Given the age range of this cohort, the declining retirement rate was to be expected.[24] Between 1970 and 1974, Congress adjusted social security benefits on an ad hoc basis. Over this period, the legislated real increase in social security benefits was 16 percent.[25] Starting in 1975, social security benefits were indexed to the CPI–W. Thus, the social security benefits of current recipients effectively increase at the same rate as the rate of inflation. The slight increase in the social security income of the cohort over the 1974–77 period was not caused by legislated increases. Part of this increase resulted from an increase in the proportion of cohort families receiving benefits.

The other transfer income component of this cohort's total income increased by 9 percent between 1970 and 1974 and then fell by 1.5 percent between 1974 and 1977. This pattern, too, can be largely explained by the change in cohort retirement patterns. The other transfer income component includes pension benefits. Between 1970 and 1974, pension income increased primarily because of the high retirement rate of this cohort. Since most private and State and local government pensions are generally not indexed for inflation, the real value of these pension benefits for those retired falls during inflationary periods. The annual inflation rate over the 1974–77 period was about 7.5 percent (versus about 6.2 percent for the 1970–74 period). This high annual inflation rate combined with the cohort's lower retirement rate after 1974 resulted in a decline in the rate of increase of real pension income. In addition, other transfer income excluding pensions decreased in real terms over the 1974–77 period.

Property income for this cohort also increased faster between 1970 and 1974 than after 1974. As stated earlier, the CPS data present no explanation for the increase in property income. Perhaps individuals modify their asset portfolios when they retire so that the portfolios contain more income producing assets.

An additional cause of changing cohort income levels not reflected in the tables is the pattern of withdrawal from the cohort. The two primary reasons for withdrawal according to the CPS are death and institutionalization, which can also affect the average family size as well as its average income level.[26]

In summary, it is found that the average real income of the 1970 elderly cohort fell about 4 percent over the 1970–77 period. This reduction in average income resulted from a 54-percent decline in the average earnings of cohort families and increases in the unearned components of their income that ranged from 7 percent for other transfer income to 46 percent for social security income. This change in the 1970 cohort's sources of income followed the expected pattern for a cohort going through the retirement process.

This analysis shows that the change in the average real income of this elderly cohort was distinctly different in the 1970–74 and 1974–77 subperiods. During the former period the average real income of the 1970 elderly cohort unexpectedly increased. Normally average cohort income could be expected to fall as the cohort undergoes the transition from work to retirement. The slight increase in the 1970 elderly cohort's average real income resulted from the large increases in its unearned income sources, especially the social security income component, that outweighed the relatively

[24] It should be noted that the social security earnings test only applies through age 71. Thus the percentage of cohort families receiving social security benefits will increase over time not only because more family heads retire as they get older but also because more reach age 72 or older and are, therefore, eligible for benefits regardless of their level of earnings.

[25] **Social Security Bulletin, Annual Statistical Supplement, 1976,** page 22. The percentage increase listed was deflated using the CPI–O to arrive at the 16 percent. This percentage increase applies only to those who were receiving benefits in 1970.

[26] Over the 1970–77 period, the average family size of the 1970 elderly cohort fell from 1.7 members per family to 1.6. When family size is taken into account, the decline in the economic status of the cohort is less than that indicated by table 6.

large decrease in its earnings. Over the 1974–77 period, the average real income of this cohort declined primarily because the growth rate of unearned income components was not as high as it had been in the 1970–74 period. Since the decline over the 1974–77 period was greater than the increase over the 1970–74 period, the average real income of the 1970 elderly cohort was lower in 1977 than in 1970.

Summary and Comments on Elderly Income Changes

This part of the article focused on the changing average real income of the elderly over the 1970–77 period. A major question addressed was how the income of the 1977 elderly age class compared with that of the 1970 elderly age class. It is found that the income of this age class increased by 10 percent between 1970 and 1977. The other question was concerned with how the income of the 1970 elderly cohort changed over the 1970–77 period. It is found that this cohort's income fell 4 percent over the period.

The data indicate that the incomes of both elderly groups increased over the 1970–74 period and decreased over the 1974–77 period. The magnitudes of these changes for the two groups were very different, however. As a result, the percentage changes in incomes over the 1970–77 period were very different for the two groups. Between 1970 and 1974 the income of the age class increased almost 12 percent while the elderly cohort's income increased less than 2 percent. Over the 1974–77 period, the incomes of the age class and the cohort fell by about 2 percent and 6 percent, respectively. For the entire 1970–77 period, then, the income of the age class grew by 10 percent while that for the cohort fell by 4 percent.

These different findings result from the use of different definitions of the elderly for the analyses in this article. The elderly age class was defined as those families headed by persons aged 65 or older in the given year. The 1970 elderly cohort was defined as those families headed by persons aged 65 or older in 1970. In 1970 both the age class and the 1970 cohort contained exactly the same set of families. In each subsequent year, however, those families headed by persons who reached age 65 during the year were added to the age class but not to the cohort. By 1977 these "new" elderly families comprised almost half of the elderly age class.

Since the 1970 elderly cohort is a subset of the elderly age class—all families in the cohort are in the age class but, after 1970, not all families in the age class are in the cohort—it follows that the difference in the 1977 average real income levels for these two elderly groups was due solely to the families that entered the age class after 1970. In fact, in 1977 the income of "new" elderly families was more than 30 percent higher than the income of the elderly cohort families. The higher income levels of the new elderly results largely from their higher labor force participation rate and their higher average earnings. These differences resulted primarily from the younger average age of the new elderly. In 1977, there was not much difference in the unearned income of the new elderly and the elderly cohort.

The directions of change over the 1970–77 period for the components of income were the same for both the elderly age class and the elderly cohort. For both groups, earnings declined while all unearned income components increased. Since the youngest family heads in the 1970 cohort aged from 65 to 72 over the 1970–77 period, it would naturally be expected that many of them would have moved from work to retirement because of the aging process. The pattern of change in the income components of the cohort, along with a large (44 percent) decline in the proportion of cohort families with earnings, supports this expectation. Although the pattern of change in income components for the age class is similar to that for the cohort, the explanation is different. The downward trend in labor-force participation cannot be explained by changes in the age distribution of elderly age class family heads since this distribution changed little over the 1970–77 period. Rather, the evidence suggests the retirement behavior of the elderly changed during the 1970–77 period. Indeed, all evidence indicates a trend toward earlier retirement during the 1970's.

Appendix

The first section of the appendix briefly describes the published Consumer Price Index for All Urban Consumers (CPI–U). In the second section, the construction of five all-item consumer price indexes is explained, and a very brief comparison of their movements is presented. The exclusion of two components of housing expenditure (home purchase and mortgage interest) from the CPI–W is examined in the third section.

The Published CPI–U

In 1978 the Bureau of Labor Statistics (BLS) began publishing the CPI–U. The CPI–U employs fixed quantity weights and covers about 80 percent of the total noninstitutionalized population. In addition to wage earners and clerical workers, it includes professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees, and others not in the labor force. Its quantity weights are derived from the 1972–73 Consumer Expenditure Surveys.

Constructed All-Item Price Indexes

For the period 1967–79, five annual all-item consumer price indexes were constructed for this article. The first two (the CPI–O and the CPI–W_C) have been discussed in the preceding text. The other three are the CPI–U_C (for all urban consumers), the CPI–A (for all consumers), and the CPI–Y (for nonaged or "younger" consumers—units headed by persons aged 64 or under). Table I shows the average annual index and the percentage change in the indexes during the period 1967–79 for all five constructed indexes.

In constructing the last three indexes, published BLS price indexes for the seven major expenditure classes were weighted together using expenditure share weights for all urban consumers, all consumers, and younger consumers, respectively. Of course, the 1967–77 expenditure class price indexes were those for urban wage earners and clerical workers. The 1978 and 1979 expenditure class price indexes, however, were those for all urban consumers.[27] Weights for each of these three consumer groups were derived from the 1972–73 Consumer Expenditure Surveys. These weights were used for each year of the 1967–79 period.

The five all-item indexes were constructed as follows. First, for each major expenditure class, 1972–73 expenditure was multiplied by the ratio of the 1967 price index for that class to its 1972–73 index to get the cost of the 1972–73 quantity at 1967 prices:[28]

$$P^j_{72-3}\ Q^j_{72-3}\left(\frac{I^j_{67}}{I^j_{72-3}}\right) = P^j_{72-3}\ Q^j_{72-3}\left(\frac{P^j_{67}}{P^j_{72-3}}\right) = P^j_{67}\ Q^j_{72-3}$$

where P is price, Q is quantity, and I is price index. The superscript j refers to the jth expenditure class. The subscripts 72–3 and 67 refer to 1972–73 and 1967, respectively. $I^j_{67} = 100.0$ for all j.

Next, for each expenditure class an index number weight (W^j) was constructed where

$$W^j = \frac{P^j_{67}\ Q^j_{72-3}}{\sum_{j=1}^{7} P^j_{67}\ Q^j_{72-3}}$$

Finally, the indexes were computed by weighting the I^j_i by the W^j:

$$\frac{CPI_i}{100} = \frac{\sum_j W^j\ I^j_i}{100}$$

$$= \sum_j \frac{P^j_{67}\ Q^j_{72-3}}{\sum_j P^j_{67}\ Q^j_{72-3}}\left(I^j_i / I^j_{67}\right)$$

$$= \sum_j \frac{P^j_{67}\ Q^j_{72-3}}{\sum_j P^j_{67}\ Q^j_{72-3}}\left(P^j_i / P^j_{67}\right)$$

$$= \sum_j \frac{P^j_i\ Q^j_{72-3}}{\sum_j P^j_{67}\ Q^j_{72-3}}$$

$$= \frac{\sum_j P^j_i\ Q^j_{72-3}}{\sum_j P^j_{67}\ Q^j_{72-3}}$$

where the subscript i refers to the ith year. Thus, the CPI is a price index with fixed 1972–73 quantity weights and $CPI_{67} = 100.0$.

The BLS has published expenditure shares by major expenditure class for 1972–73 for (a) urban wage earners and clerical workers and (b) all urban consumers.[29] For older consumers, younger consumers, and all consumers, it was necessary to estimate 1972–73 expenditures by major expenditure class. In order to provide a check on the estimating methods, estimated expenditures and expenditure shares were also estimated for all urban consumers. As shown in table II, estimated shares for all urban consumers are quite similar to the published BLS shares.

In estimating 1972–73 expenditures and expenditure shares, published BLS data were relied on almost totally. For six of the seven major expenditure classes (all except housing), BLS Bulletin No. 1992 was used; published expenditure items were combined so as to closely approximate the major expenditure classes.[30]

[27] Use of 1978 and 1979 expenditure class price indexes for urban wage earners and clerical workers would have produced CPI–U's, CPI–A's, and CPI–Y's very similar to those shown in table I.

[28] What matters are the expenditure shares of the seven expenditure classes and not the absolute levels of expenditures.

[29] Department of Labor, Bureau of Labor Statistics, **The Consumer Price Index: Concepts and Content Over the Years** (Report No. 517), 1977, table 1. For all urban consumers, the correct expenditure share for transportation is 17.7 percent instead of 17.0 percent as originally published.

[30] Department of Labor, Bureau of Labor Statistics, **Consumer Expenditure Survey: Integrated Diary and Interview Survey Data, 1972–73** (Bulletin No. 1992), 1978, tables 3 and 8.

Table I.—Constructed all-item consumer price indexes: Annual indexes and percentage changes, 1967-79
[1967 = 100.0]

Year	CPI-O		CPI-W_c		CPI-U_c		CPI-A		CPI-Y	
	Index	Percentage change	Index	Percentage change	Index	Percentage change	Index	Percentage change	Index	Percentage change
1967	100.0	.....	100.0	.....	100.0	.....	100.0	.....	100.0	.....
1968	104.2	4.2	104.2	4.2	104.1	4.1	104.1	4.1	104.1	4.1
1969	109.9	5.5	109.9	5.5	109.8	5.5	109.8	5.5	109.8	5.5
1970	116.5	6.0	116.2	5.7	116.4	6.0	116.4	6.0	116.3	5.9
1971	121.7	4.5	121.2	4.3	121.5	4.4	121.5	4.4	121.5	4.5
1972	125.7	3.3	125.1	3.2	125.4	3.2	125.4	3.2	125.3	3.1
1973	133.1	5.9	132.3	5.8	132.4	5.6	132.3	5.5	132.3	5.6
1974	147.9	11.1	147.0	11.1	146.9	11.0	146.9	11.0	146.8	11.0
1975	162.0	9.5	160.7	9.3	160.8	9.5	160.7	9.4	160.6	9.4
1976	172.0	6.2	170.6	6.2	170.6	6.1	170.6	6.2	170.5	6.2
1977	183.5	6.7	181.7	6.5	181.9	6.6	181.9	6.6	181.7	6.6
1978	197.6	7.7	195.2	7.4	195.8	7.6	195.6	7.5	195.5	7.6
1979	219.9	11.3	217.7	11.5	217.5	11.1	217.5	11.2	217.2	11.1

Several substantial adjustments to the housing expenditure figures shown in Bulletin No. 1992 were made in order to closely approximate this expenditure class. First, expenditures for purchase and improvement of residences were added, and net receipts from sale of residences were subtracted.[31] Second, contracted mortgage interest cost was added, and actual mortgage interest was subtracted.[32]

Expenditure class weights for the CPI–O, the CPI–U_c, the CPI–A, and the CPI–Y were derived from the estimated 1972–73 expenditures. Expenditure class weights for the CPI–W_c were derived from the published 1972–73 expenditure shares.[33]

As shown in table I, the movements of the CPI–W_c, the CPI–U_c, the CPI–A, and the CPI–Y are quite similar. The CPI–O increased slightly faster than each of the other constructed CPI's.

[31] Data for all consumers and for older and younger consumers are from **Consumer Expenditure Survey: 1972–73** (Bulletin No. 1997), 1978, part 1, table 8. Data for urban consumers are from an unpublished tabulation of the detailed interview tape.

[32] Data on actual mortgage interest for all consumers and for older and younger consumers are from BLS Bulletin No. 1997. Data on actual mortgage interest for urban consumers are from an unpublished tabulation of the detailed interview tape. Contract interest is based on unpublished BLS estimates.

[33] Additional detail regarding the derivation of these weights is available from the authors.

Table II.—Percentage distribution of costs of market baskets[1] for CPI-U_c and CPI-U, by expenditure class

Expenditure class	CPI-U_c	CPI-U
All classes	100.0	100.0
Food and beverages	18.4	18.8
Housing	41.9	42.9
Apparel and upkeep	7.0	7.0
Transportation	16.9	17.7
Medical care	5.3	4.6
Entertainment	5.3	4.5
Other goods and services	5.2	4.5

[1] Quantities or market baskets for 1972–73 at 1972–73 prices.

Exclusion of Housing Components From the CPI–W

Home ownership is not treated very satisfactorily in the CPI–W, the CPI–U, the CPI–W_c, the CPI–U_c, or the CPI–O. Improving the treatment of home ownership in these indexes is beyond the scope of this paper.

It is, however, of interest to examine the effects of two housing components on the CPI–W. Thus, in this section two "partial" CPI–W's are presented. One excludes contracted mortgage interest costs and the other excludes home purchases. Note that these partial indexes are not intended as proxies for a consumer price index for older consumers.

For urban wage earners and clerical workers, the BLS publishes a CPI for all items except mortgage interest (CPI–W_{emi}). The CPI–W_{emi} series starts in 1961. Over the 1967–79 period, the CPI–W_{emi} increased less rapidly than the CPI–W. For 1979, the CPI–W_{emi} was 5.9 points less than the CPI–W (table III). More than half of this 5.9-point difference resulted from the very rapid 1977–79 rise of the mortgage interest cost index. Note the volatility of the mortgage interest cost index shown in the table.

The BLS does not calculate a CPI for all items except home purchase costs. Using the BLS home purchase price index for urban wage earners and clerical workers and constructed home purchase weights, it was possible to construct for 1967–79 an annual CPI–W for all items except home purchases (CPI–W_{ehp}). The 1967–77 home purchase weight was based on the 1960–61 Consumer Expenditure Surveys,[34] and the 1978–79

[34] **Consumer Price Index: History and Techniques** (Bulletin No. 1517), 1966.

Table III.—Consumer price indexes: Annual indexes and percentage changes, 1967–79

[1967 = 100.0]

Year	CPI-W		CPI-W_{emi}		Mortgage interest cost	
	Index	Percentage change	Index	Percentage change	Index	Percentage change
1967	100.0	.....	100.0	.....	100.0	.....
1968	104.2	4.2	104.0	4.0	110.1	10.1
1969	109.8	5.4	109.2	5.0	131.6	19.5
1970	116.3	5.9	115.1	5.4	156.8	19.1
1971	121.3	4.3	120.3	4.5	150.7	-3.9
1972	125.3	3.3	124.4	3.4	153.3	1.7
1973	133.1	6.2	132.1	6.2	164.6	7.4
1974	147.7	11.0	146.1	10.6	201.7	22.5
1975	161.2	9.1	159.1	8.9	230.0	14.0
1976	170.5	5.8	168.4	5.8	240.1	4.4
1977	181.5	6.5	179.3	6.5	252.2	5.0
1978	195.3	7.6	192.1	7.1	293.5	16.4
1979	217.7	11.5	211.8	10.3	376.4	28.2

weight was based on the 1972–73 Consumer Expenditure Surveys.[35]

Over the 1967–79 period, the CPI–W_{ehp} increased slightly less rapidly than the CPI–W. For 1979 (1978), the CPI–W_{ehp} was 0.5 (0.1) points less than the CPI–W (table IV). During this period the CPI–W was slightly less than the CPI–W for 5 years and slightly more for 5 years; the two indexes were equal in 1969 and 1973.

[35] **Relative Importance of Components in the Consumer Price Indexes, 1977** (Report No. 595), 1980, table 1. Additional detail regarding the derivation of these weights is available from the authors.

Table IV.—Consumer price indexes: Annual indexes, 1967-79

[1967 = 100.0]

Year	CPI-W	CPI-W_{ehp}	Home purchase index
1967	100.0	100.0	100.0
1968	104.2	104.3	102.8
1969	109.8	109.8	109.5
1970	116.3	116.2	118.3
1971	121.3	121.1	124.8
1972	125.3	125.0	130.0
1973	133.1	133.1	132.7
1974	147.7	148.0	142.7
1975	161.2	161.3	160.3
1976	170.5	170.6	168.4
1977	181.5	181.6	179.5
1978	195.3	195.2	196.6
1979	217.7	217.2	223.1

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