Experimental price index for elderly consumers

An experimental consumer price index for older Americans rose somewhat faster than each of two published BLS Consumer Price Indexes; as might be expected, expenditures for medical care accounted almost entirely for this difference

Nathan Amble
and
Ken Stewart

The Consumer Price Index (CPI) of the Bureau of Labor Statistics measures the average change in prices over time for a fixed market basket of goods and services for two population groups. The CPI for All Urban Consumers (CPI-U) represents the spending habits of about 80 percent of the population of the United States. The CPI for Urban Wage Earners and Clerical Workers (CPI-W) is a subset of the CPI-U and represents about 32 percent of the total U.S. population.

The 1987 amendments to the Older Americans Act of 1965 directed BLS to develop an experimental index for a third population of consumers: those 62 years of age and older. In its 1988 report to Congress, BLS observed that from December 1982 to December 1987, the experimental consumer price index for older Americans rose slightly faster than the CPI-U and CPI-W.[1] (See table 1.)

This article updates the analysis of the behavior of the experimental index for older Americans for the period from December 1987 through December 1993. Over this 6-year period, the experimental price index rose 28.7 percent, slightly more than the increases of 26.3 percent for the CPI-U and 25.5 percent for the CPI-W.

Nathan Amble and Ken Stewart are economists in the Division of Consumer Prices and Price Indexes, Bureau of Labor Statistics.

Methodology, data, and limitations

Although the study discussed in this article indicates a higher overall inflation rate for older Americans compared with the rates for the official CPI population groups, any conclusions drawn should be used with caution because of the various limitations inherent in the methodology.

Expenditure weights. For each CPI population group, item strata are weighted according to their importance in the spending patterns of the population. The population of older Americans used for the experimental price index was defined to be all urban noninstitutionalized consumer units that were either

1. unattached individuals who were at least 62 years of age; or
2. members of families whose reference person (as defined in the Consumer Expenditure Survey) or spouse was at least 62 years of age; or
3. members of groups of unrelated individuals living together who pool their resources to meet their living expenses and whose reference person was at least 62 years of age.

In the 1982–84 Consumer Expenditure Survey, which is used as the source of expenditure weights in the current CPI, 19 percent of the total sample of eligible urban consumer units (3,135 out of 16,500) met this definition. Because the number of consumer units used for determining weights in the experimental index was relatively small, expenditure weights used in the construction of the experimental price index have a higher sampling error than those used for the larger populations.

Table 1. **Experimental consumer price index for older Americans, December 1982 through December 1993, for all items and for major CPI expenditure components**

[December 1982 = 100]

Month and year	All items	Food and beverages	Housing	Apparel and upkeep	Transportation	Medical care	Entertainment	Other goods and services
1982:								
December	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1983:								
January	100.4	100.5	100.5	98.5	99.5	101.0	100.6	101.2
February	100.5	100.9	100.6	99.0	98.5	102.1	101.3	101.9
March	100.6	101.5	100.6	100.3	97.7	102.4	101.8	101.9
April	101.2	102.0	101.1	100.9	99.4	102.7	101.9	102.5
May	101.7	102.2	101.6	101.2	100.6	102.9	102.0	102.7
June	102.0	102.2	102.0	101.1	101.3	103.2	102.3	103.0
July	102.4	102.3	102.4	100.7	101.9	103.8	102.7	104.0
August	102.7	102.3	102.6	102.2	102.4	104.5	102.8	104.7
September	103.2	102.4	103.1	104.0	102.7	104.8	103.4	105.9
October	103.4	102.5	103.2	104.0	103.1	105.3	104.2	106.3
November	103.5	102.2	103.3	103.9	103.4	105.8	104.5	106.9
December	103.7	102.7	103.4	103.2	103.4	106.2	104.6	107.2
1984:								
January	104.4	104.9	104.0	101.5	103.4	107.2	104.8	107.8
February	105.1	106.0	104.7	101.4	103.4	108.3	105.4	108.2
March	105.3	106.0	104.8	103.3	103.7	108.7	105.4	108.4
April	105.7	106.0	105.3	103.5	104.4	109.0	106.4	108.7
May	106.0	105.6	105.7	103.3	105.2	109.3	106.3	108.9
June	106.3	105.9	106.1	102.5	105.4	109.6	106.9	109.4
July	106.7	106.3	106.8	101.7	105.4	110.3	107.2	110.2
August	107.2	106.9	107.2	103.7	105.5	110.8	107.7	110.5
September	107.6	106.6	107.7	106.0	105.7	111.1	108.1	111.8
October	107.8	106.7	107.7	106.7	106.3	111.7	108.7	112.3
November	107.9	106.5	107.6	106.3	106.5	112.3	109.1	112.7
December	108.0	106.8	107.8	105.3	106.5	112.7	109.5	112.8
1985:								
January	108.3	107.6	108.0	103.4	106.2	113.5	109.9	113.6
February	108.8	108.5	108.5	104.3	106.1	114.3	110.0	114.2
March	109.2	108.6	108.9	106.4	106.9	115.0	110.5	114.4
April	109.7	108.5	109.3	106.9	108.0	115.5	111.0	114.8
May	110.1	108.3	110.1	106.5	108.6	116.0	111.2	115.1
June	110.5	108.4	110.7	106.0	108.8	116.6	111.8	115.4
July	110.8	108.5	111.0	104.8	109.0	117.3	112.4	116.1
August	111.1	108.5	111.4	106.2	108.7	118.1	112.4	116.5
September	111.4	108.5	111.7	108.7	108.5	118.6	112.9	117.9
October	111.7	108.6	111.9	109.5	108.9	119.2	113.7	118.5
November	112.1	108.9	112.2	109.6	109.7	120.0	113.9	118.6
December	112.4	109.7	112.5	108.4	110.0	120.5	113.7	119.0
1986:								
January	112.9	110.7	112.8	106.0	110.1	121.6	114.6	119.9
February	112.7	110.7	112.6	105.7	108.6	122.9	115.2	120.4
March	112.3	110.8	112.6	107.0	105.5	123.9	115.4	120.8
April	112.3	111.1	113.0	107.5	103.4	124.6	115.6	121.1
May	112.6	111.4	113.1	106.8	104.3	125.1	115.8	121.3
June	113.1	111.4	113.8	105.7	105.3	125.8	116.2	121.5
July	113.3	112.5	113.9	105.2	104.2	126.7	116.5	122.3
August	113.6	113.4	114.1	107.3	103.1	127.5	116.7	122.7
September	114.1	113.5	114.5	110.0	103.4	128.1	117.1	123.9
October	114.2	113.7	114.3	110.5	103.5	128.9	117.7	124.3
November	114.2	113.9	114.0	110.4	104.2	129.6	118.2	124.5
December	114.4	114.1	114.1	109.1	104.5	130.3	118.1	124.8
1987:								
January	115.2	115.5	114.8	107.1	105.8	131.0	118.4	125.8
February	115.7	116.0	115.2	107.8	106.3	131.8	118.6	126.4
March	116.1	115.9	115.7	111.5	106.5	132.5	119.0	126.8
April	116.7	116.2	116.1	113.5	107.3	133.0	119.6	127.1
May	117.1	116.9	116.6	113.0	107.7	133.4	119.9	127.5
June	117.7	117.5	117.3	110.9	108.4	134.0	120.1	127.9
July	117.9	117.2	117.7	108.4	109.0	134.8	120.8	128.7
August	118.6	117.2	118.5	111.1	109.6	135.3	120.7	129.3
September	119.0	117.6	118.6	115.5	109.7	135.8	121.2	130.5
October	119.3	117.7	118.6	117.6	110.0	136.4	122.0	130.9
November	119.5	117.5	118.6	117.8	110.8	136.9	122.3	131.1
December	119.5	118.2	118.7	114.3	110.5	137.2	122.5	131.4

Table 1. **Continued—Experimental consumer price index for older Americans, December 1982 through December 1993, for all items and for major CPI expenditure components**

[December 1982 = 100]

Month and year	All items	Food and beverages	Housing	Apparel and upkeep	Transportation	Medical care	Entertainment	Other goods and services
1988:								
January	120.0	119.2	119.5	111.9	110.1	138.5	123.4	132.7
February	120.3	119.2	119.9	112.0	109.7	139.5	123.7	133.8
March	120.9	119.4	120.5	116.3	109.5	140.4	124.4	134.3
April	121.5	120.1	120.8	119.6	110.2	141.0	125.1	134.5
May	121.9	120.6	121.2	118.9	111.1	141.8	125.2	134.9
June	122.5	121.1	122.0	116.8	111.5	142.3	125.6	135.3
July	123.0	122.4	122.5	114.6	111.9	143.7	126.2	136.4
August	123.6	123.0	123.1	114.8	112.5	144.4	126.5	137.0
September	124.2	123.9	123.3	120.1	112.6	145.2	127.0	138.6
October	124.6	124.0	123.3	123.3	112.8	146.2	127.5	139.1
November	124.8	123.8	123.4	122.4	113.5	146.9	127.8	139.6
December	124.9	124.2	123.7	120.0	113.7	147.5	128.4	140.1
1989:								
January	125.7	125.8	124.3	117.0	114.0	149.1	129.8	142.2
February	126.3	126.6	124.7	117.2	114.5	150.6	130.2	143.0
March	127.1	127.3	125.4	122.0	114.8	151.7	130.6	143.5
April	127.9	128.1	125.6	124.2	117.6	152.5	131.5	143.9
May	128.6	128.9	126.1	123.2	119.0	153.3	131.6	144.9
June	129.0	129.0	126.9	120.2	118.9	154.4	132.3	145.9
July	129.6	129.6	128.0	117.4	118.4	155.8	133.2	146.8
August	129.8	129.8	128.4	116.9	117.4	156.9	133.4	148.1
September	130.0	130.1	128.5	117.1	117.7	157.5	133.7	148.5
October	130.8	130.8	128.9	120.5	118.5	158.7	134.3	149.0
November	131.1	131.1	129.2	120.1	119.1	160.1	134.7	149.2
December	131.4	131.6	129.6	116.6	119.3	160.8	135.1	150.4
1990:								
January	133.0	135.2	130.9	114.0	121.4	162.6	136.0	151.7
February	133.6	136.2	131.0	118.0	121.4	164.4	136.4	152.4
March	134.4	136.2	131.8	123.0	121.3	166.1	137.0	153.2
April	134.6	135.7	131.7	124.3	121.8	167.3	137.5	154.0
May	134.9	135.8	132.0	123.4	122.3	168.7	137.8	154.7
June	135.8	136.5	133.2	121.0	122.8	170.0	138.3	156.0
July	136.6	137.4	134.3	118.5	123.0	172.0	139.2	157.4
August	137.9	137.5	135.6	120.0	125.3	173.7	139.4	158.1
September	138.8	137.7	135.8	123.9	128.0	174.7	140.5	159.3
October	139.6	138.1	136.1	126.0	130.8	176.3	140.7	159.8
November	140.0	138.5	136.0	124.8	132.1	177.8	141.0	160.3
December	140.1	138.7	136.1	122.4	132.6	178.9	141.3	161.3
1991:								
January	141.2	141.1	137.6	121.5	130.9	180.9	142.5	163.2
February	141.6	141.1	138.2	124.5	129.1	182.9	143.1	164.4
March	141.9	141.5	138.5	127.1	127.6	184.4	143.9	165.1
April	142.0	142.5	138.1	128.1	127.4	185.2	145.0	166.0
May	142.4	142.6	138.3	127.7	128.5	186.1	145.3	166.5
June	142.9	143.2	139.0	125.0	128.8	187.2	145.3	167.5
July	143.2	142.2	139.9	123.5	128.6	188.7	145.9	168.0
August	143.6	141.5	140.3	125.6	129.0	190.1	146.7	169.2
September	144.0	141.5	140.3	129.1	129.0	191.1	147.5	170.7
October	144.1	141.0	140.3	129.8	129.2	192.1	147.9	171.3
November	144.5	141.5	140.4	129.6	130.5	193.2	147.9	171.9
December	144.8	142.0	140.8	126.5	130.8	194.1	147.5	172.7
1992:								
January	145.4	142.6	141.7	125.2	130.3	195.9	147.8	173.7
February	146.0	143.0	142.2	127.8	129.9	197.9	148.5	174.6
March	146.7	143.7	142.7	130.5	130.5	199.2	149.0	175.2
April	146.8	143.7	142.5	130.7	131.2	199.9	150.1	175.7
May	147.0	142.9	142.6	130.7	132.1	200.6	150.0	176.8
June	147.3	142.1	143.5	130.2	131.8	201.3	150.3	177.2
July	147.8	142.0	144.3	128.3	132.2	202.6	150.7	177.8
August	148.2	142.9	144.7	128.9	131.9	203.4	150.9	179.0
September	148.4	143.3	144.3	131.9	131.8	204.1	151.6	180.4
October	149.0	143.2	144.5	135.0	133.3	205.3	151.9	181.1
November	149.2	143.0	144.4	134.6	134.7	206.3	152.0	181.2
December	149.2	143.4	144.5	131.2	134.6	206.9	152.2	182.3

Table 1. **Continued—Experimental consumer price index for older Americans, December 1982 through December 1993, for all items and for major CPI expenditure components**

[December 1982 = 100]

Month and year	All items	Food and beverages	Housing	Apparel and upkeep	Transportation	Medical care	Entertainment	Other goods and services
1993:								
January	150.1	144.7	145.4	129.7	134.9	208.8	152.8	184.5
February	150.7	144.8	145.9	133.3	135.1	210.5	153.0	185.1
March	151.2	145.1	146.5	135.9	134.8	211.2	153.3	186.0
April	151.7	145.6	146.7	137.1	135.2	212.0	154.0	186.5
May	152.0	146.2	146.8	135.4	136.0	213.3	153.7	187.7
June	152.2	145.2	147.8	131.5	135.9	214.0	154.5	187.6
July	152.4	145.2	148.2	129.3	136.0	215.2	154.1	188.0
August	152.8	145.8	148.6	132.7	136.0	216.0	154.7	186.9
September	152.9	146.0	148.5	135.4	135.8	216.6	155.5	185.0
October	153.4	146.7	148.4	136.1	137.5	217.7	156.2	185.3
November	153.6	146.9	148.2	136.1	138.5	218.3	156.8	185.7
December	153.8	147.7	148.6	133.2	138.1	218.7	157.0	186.3

For each population group, the base expenditure weight of any component represents the actual expenditure on that component in the base period. The *relative importance* of any component is its expenditure weight (updated for changes in relative prices) and represents the proportion of that weight to total expenditures for the population. The relative importances of selected components for each of the three population groups are shown in table 2 for December 1987, the first month of the study.

Areas and outlets priced. The experimental consumer price index for older consumers is a weighted average of price changes for the same set of item strata collected from the same sample of urban areas as are used in calculating the CPI-U and CPI-W.

Retail outlets are selected for pricing in the CPI based on data reported in a separate survey representing all urban households. The experimental index also uses the same retail outlet sample. Thus, the outlets selected may not be representative of the places where older persons purchase their goods and services.[2]

Items priced. As with retail outlets, a major limitation of the experimental index is that the categories of items to be priced are selected using expenditure weights calculated from the expenditure surveys for the urban population. As a result, the specific item classes selected for each stratum may not be representative of those classes used by the older population.

Prices collected. A final source of uncertainty about the appropriateness of using the CPI-U prices for the index of the older population concerns the availability of discount prices for older Americans. For example, senior-citizen discount rates are used in the CPI-U in proportion to their use by the urban population as a whole. To the extent that senior-citizen discounts take the form of a percentage discount from the regular price, this may not be a problem. If, however, the discount is not a fixed percentage of the price, the scarcity of senior-citizen discount prices in the current CPI could lead to error in the experimental index.

Because of the preceding limitations, any conclusions drawn from the analyses presented in this article should be treated as tentative.

Relative behavior of price indexes

Table 3 gives the annual price changes in the all-items CPI-U, CPI-W, and experimental price index during the period 1988–93. Table 4 shows the behavior of these three indexes at the major component levels during the same period.

Over the 6-year period from December 1987 through December 1993, the reweighted experimental price index for older Americans rose 28.7 percent. This compares with increases of 26.3 percent for the CPI-U and 25.5 percent for the CPI-W.

Examining the indexes in more detail, we see that medical care prices during the period rose slightly more than twice as fast as the average for all items in each population group. Because the elderly typically spend more on medical care than does the population as a whole (see table 2), the medical care component accounted for most of the difference between the experimental index and either of CPI-U and CPI-W. In the experimental index, this component increased 59.4 percent during the period 1988–93. By contrast, inflation for the medical care component of the CPI-U was 54.2 percent and that for the CPI-W was 53.3 percent.

The price change for each major expenditure component varied by population because the expenditure weights of the items that comprised the major components varied among the three

population groups the indexes served. The expenditure weight that an item had in a particular population reflected the importance of that item as a proportion of the total expenditures of that population. For example, the relatively high expenditure weights of the medical care component of the experimental index may largely be attributed to the differences in the nature of the demand for medical care services by the elderly, compared with the demand for such services by all urban consumers or by urban wage earners and clerical workers. Within the medical care component, the elderly had larger out-of-pocket costs relative to both of the other groups chiefly because those groups had employer-provided health care benefits more readily available to them. An analysis of the relative importance of the various subcomponents making up the medical care component for the elderly and for all urban consumers indicates that older Americans devote a substantially larger share of their medical care budget to physicians' services, followed by hospital room stays and commercial health insurance coverage.

Of the seven major expenditure components, the apparel category registered the smallest price change for all three population groups over the 1988–93 period.

Within the transportation component, public transportation items such as airline fare, intercity bus fare, intercity train fare, and taxi fare had higher relative importance for the elderly than for all urban consumers. These items contributed to the observed overall higher inflation rates in the transportation component of the experimental index.

Like medical care, another expenditure component that rose significantly in all three indexes during the study period was the "other goods and services" category. However, unlike medical care, this component recorded the *smallest* increase in the experimental price index (41.8 percent), compared with the CPI-U (47.0 percent) and the CPI-W (46.2 percent). The reason for the lesser rise could be found in differences in the composition of the three populations. For instance, the CPI-U and CPI-W, with their relatively larger concentration of younger people, had a significantly higher relative importance for college tuition, which increased faster than the average of all items in each year of the study. In addition, the populations of all urban consumers and urban wage earners and clerical workers spend proportionately more for tobacco and other smoking products, which have also typically increased faster in price than the "other goods and services" component, of which they are a subcomponent. These items have thus contributed to the faster rise in the the "other goods and services" component of the CPI-U and CPI-W relative to the experimental price index for older Americans.

Cost-of-living adjustments

Adjustments to Social Security benefits are currently based on the percentage change in the CPI-W, measured from the average of the third quarter of one year to the third quarter of the succeeding year.

While the Senate Special Committee on Aging stipulated that the current study cover persons 62 years of age and older, this population is not likely to be the most appropriate one for defining and developing an index for use in indexing Social Security benefits. The reason is twofold. First, many Social Security beneficiaries are younger than 62 years and receive benefits

Table 2. **Comparative analysis of relative importances of selected components of consumer price indexes, December 1987**

Component	CPI-U	CPI-W	Experimental index for older Americans
All items	100.00	100.00	100.00
Food and beverages	17.61	19.45	15.49
Food at home	9.86	11.14	9.79
Food away from home	6.19	6.65	4.57
Alcoholic beverages	1.55	1.66	1.13
Housing	42.48	39.95	48.30
Owners' equivalent rent	19.26	16.84	25.47
Apparel and upkeep	6.34	6.36	4.68
Medical care	5.83	4.95	9.47
Transportation	17.45	19.41	14.43
Motor fuels	3.29	4.03	2.67
Entertainment	4.37	4.04	3.34
Other goods and services	5.93	5.84	4.31
College tuition	1.13	.84	.46
Tobacco and other smoking products	1.29	1.70	1.02

Table 3. **Percent change in alternative consumer price indexes, all items, 12 months ended December, 1988–93**

Year	CPI-U	CPI-W	Experimental index for older Americans
1988	4.4	4.4	4.5
1989	4.6	4.5	5.2
1990	6.1	6.1	6.6
1991	3.1	2.8	3.4
1992	2.9	2.9	3.0
1993	2.7	2.5	3.1
Cumulative change, December 1987–December 1993	26.3	25.5	28.7

Table 4. **Percent change in alternative consumer price indexes, by major components, December 1987–93**

Component	CPI-U	CPI-W	Experimental index for older Americans
All items	26.3	25.5	28.7
Food and beverages	24.8	24.8	25.0
Housing	23.1	22.4	25.1
Apparel and upkeep	17.7	16.6	16.6
Transportation	22.8	21.9	25.0
Medical care	54.2	53.3	59.4
Entertainment	25.9	25.0	28.2
Other goods and services	47.0	46.2	41.8

because they are surviving spouses or minor children of covered workers or because they are disabled. The spending patterns of this younger group are excluded in the weights for the experimental index for older Americans. Second, a substantial number of persons 62 years of age and older—especially those 62 to 64 years—do not receive Social Security benefits at all. Although these older consumers are included in the population covered by the reweighted experimental index, they presumably should be excluded from an index designed to reflect the experience of Social Security pensioners. In short, an index designed specifically to measure price changes for Social Security beneficiaries—that is, one that excludes older persons who do not receive benefits, but includes younger persons who receive survival and disability benefits—might well show price movements that differ significantly from those of the experimental index set out in this article.

Conclusions

This article examined changes in three distinct Consumer Price Indexes—the Index for All Urban Consumers (CPI-U), Index for Urban Wage Earners and Clerical Workers (CPI-W), and experimental index for Americans 62 years of age and older—for the period December 1987 through December 1993. Analysis of the relative behavior of the three indexes at the all-items level reveals that the experimental index rose slightly faster than the two published indexes.

The experimental price index, reweighted to incorporate the spending patterns of older consumers, behaves more like the CPI-U than the CPI-W. This is to be expected, because the CPI-U comprises the expenditures of all urban consumers, *including* those 62 years of age and over. The CPI-W, on the other hand, is limited to the spending patterns of families of wage earners and of clerical workers and, therefore, specifically *excludes* the experience of families whose primary source of income is from retirement pensions.

As an estimate of the inflation rate experienced by older Americans, the experimental index has several limitations. One of these is that the samples from which expenditure weights for the index were calculated are substantially smaller than those used in either the CPI-U or the CPI-W. This means that the experimental price index is subject to larger sampling errors than either of the two official indexes.

To produce a more precise CPI for older Americans, sample sizes would need to be strengthened for the Consumer Expenditure Survey to reflect the spending habits of the elderly more accurately. In addition, the point-of-purchase survey and the pricing surveys would need to be improved to reflect which retail outlets and items should be sampled for older Americans. These improvements in the sample design could yield altogether different results from those obtained in the study described in this article. Finally, it should be noted that the medical care component of the CPI has a substantially larger relative weight in the experimental index than in the CPI-U or CPI-W. As a result, this component of the experimental index tends to have a larger impact on the elderly than it does on either all urban consumers or urban wage earners and clerical workers.

Footnotes

[1] Charles C. Mason, "An Analysis of the Rates of Inflation Affecting Older Americans Based on an Experimental Reweighted Consumer Price Index," report presented to Congress, June 1988. During the period from December 1982 through December 1987, the CPI-U rose 18.2 percent, the CPI-W increased 16.5 percent, and the experimental index for older Americans grew 19.5 percent. Over the 11-year period from December 1982 through December 1993, the CPI-U rose 49.4 percent, the CPI-W increased 46.2 percent, and the experimental CPI for older Americans grew 53.8 percent.

[2] The sample size of the current point-of-purchase survey is not adequate to determine whether older Americans typically shop in different types of outlets from those frequented by the general population.