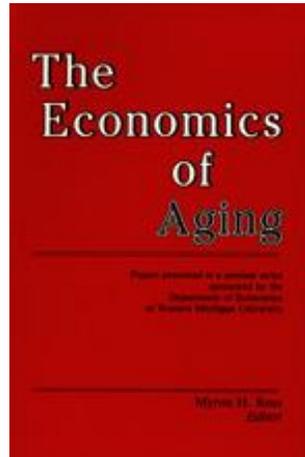

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5 Inflation and the Economic Well-Being of Older Americans*

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Introduction

It has long been believed that the elderly have fixed or constant incomes and thus are more adversely affected by inflation than other demographic groups. For example, at the beginning of the 1970s, Arthur Okun (1970, p. 14) concluded that the “. . . retired aged are the only major specific demographic group of Americans that I can confidently identify as income losers,” in response to inflation. Illustrating the continuing prevalence of this view is the assessment of the 1981 White House Conference on Aging, which stated in its final report (p. 27, 30) that “the elderly are particularly vulnerable to loss from inflation” and that “reduced inflation is especially beneficial to retired persons because it allows them to be better able to take care of themselves.” These comments express a widely believed conclusion that has influenced the development of public policy toward the elderly. During the past few years, that belief has been challenged in the public press and in scholarly papers. This paper contributes to an understanding of the response of the income of the elderly to rising prices, and documents the experience of the 1970s.

*This paper, presented by Robert Clark, was based in part on research reported in more detail in R.L. Clark, G.L. Maddox, R.A. Schrimper, and D.A. Sumner, *Inflation and the Economic Well-Being of the Elderly*. (Baltimore: Johns Hopkins University Press, 1984.)

The hypothesis that the elderly are more vulnerable to inflation is carefully examined in this paper and then rejected. The mistake in the above argument is assuming that older persons live on fixed incomes. In the recent past, the major income sources of the elderly have been earnings, social security payments, pensions, other federal transfer programs and returns on accumulated assets. Wages and interest rates that the elderly earn rise with expected inflation just as for the rest of the population. Explicit indexation, ad hoc adjustments, and in-kind benefit payments have maintained the real value of federally administered transfers to the elderly. Employer pension benefits also tend to rise with inflation, though these do not seem to have kept pace with price increases. Finally, informal transfers from family and consumption from accumulated durable assets are hard to measure but make up a significant factor in the well-being of the elderly. Since most of the sources of income for the elderly are not fixed but increase along with price increases, the real questions are the changes in elderly income relative to changes in the price of goods they purchase and relative to the incomes of other groups and the diversity in consumption and income among older persons.

Our measures of economic well-being indicate that real income of older persons rose during much of the 1970s. This rising real income for persons in the older age groups produced an increase in real consumption for most of the elderly. By contrast, wage increases did not keep up with inflation, so the median weekly real earnings of most groups of full-time wage and salary workers were approximately 10 percent lower in 1981 than in 1973. As a result the income of the elderly as a percent of income of the total population rose. Thus, during the past inflationary decade, the real and relative economic status of the elderly improved. These conclusions are based on comparing the experience of different sets of elderly households over time. Changes in real incomes

and expenditures for the same set of households in a cohort were negative; but this is not the result of inflation, rather it is a part of life-cycle patterns in income and spending.

A review of the experience of the 1970s will be helpful in understanding the future only if general relationships can be identified. Thus, in examining each source of income, we examine past changes in response to inflation and the adjustment mechanism. In the final section, we reexamine these general relationships in an attempt to assess the vulnerability of the elderly to price changes in the 1980s.

Measuring Well-Being and Inflation

In order to examine the effect of inflation on well-being, a measure of well-being must be adopted. We use the principles of a subjective utility function or satisfaction index as our general measure of well-being. Individuals and families are assumed to allocate their productive resources to earn income and to allocate their income and time among goods and services to make themselves as well off as possible. For detailed discussions of utility maximization see textbooks by Layard and Walters (1978) or Henderson and Quandt (1980). The concept of economic welfare is discussed and applied in Moon and Smolensky (1977).

Changes in prices affect both sides of the income-expenditure relationship. For most families wage and interest rates are the most important prices on the income side, but other prices also directly affect the incomes of farmers and other self-employed persons. The amount of goods and services people may consume with their limited resources also depends on prices. Prices that matter most are, of course, those of the goods with the largest budget shares. These budget shares vary from household to household because of differences in age, income and other factors.

Most transactions in our economy use dollars to measure the goods and services being traded. Absolute or money prices are the rates of exchange between dollars and particular goods and services. The general price level or the level of the price index is an average level of the money prices in the economy. This average, however, must be compared to something to be meaningful. Typically, the general price level is compared to past price levels or to prices in other countries or regions. Inflation is the ratio of the sustained increase in the general level of prices compared to past levels. It might be thought of as a shrinking of the measuring rod we use to measure incomes and expenditures. To say that the prices of goods and services in general have risen is to say that the value of a unit of money has fallen. The magnitude of this decline is indicated by an increase in the price index.

Several indicators are available for measuring the increase in prices in the United States. Throughout this analysis we use the consumer price index (CPI) as our indicator of price changes. Wahl (1982) and Kahn (1982) recently have debated the use of the consumer price index as a measure of inflation. It is generally agreed that changes in the CPI have tended to overstate the rate of inflation in the United States. Thus, an upward trend in real income will be understated if nominal income is deflated by the CPI, but for our purposes this problem is not severe. For a discussion of the CPI and other measures of price changes in the context of the elderly, see Clark et al. (1981).

Information about price changes is valuable but costly, so consumers and producers use resources to discover how prices have changed. For example, a workers who received a wage increase may not know if the wages of workers in other firms or occupations have risen. She may then not know if a change of employers would be in her interest without searching in the labor market. Especially with variable rates of inflation, the cost of gathering price information and the costs

of mistakes in allocation may be quite sizable. If all prices rise in exact proportion, and if we all knew that this was happening, inflation would have little effect because we would design our institutions and transactions in a way so as to nullify the influence of these price changes. But in any economy, relative prices of goods and services are constantly changing along with wages and other determinants of consumer incomes. In response, people change the quantities of goods and services they buy and sell. They also change hours of work, occupations, and other determinants of income. With inflation added to normal movement of relative prices, allocative mistakes are more common and this constitutes a real cost of inflation in the economy (Dornbusch and Fischer 1981, Gordon 1981).

When people have the opportunity to substitute goods that have become cheaper for goods that become more expensive, they often can mitigate the negative effects of price changes. In fact, if nominal prices and incomes change in a way that leaves the original consumption bundle available, the consumer could always be better off after the price change. One of the major shortcomings of the CPI as a measure of the cost of living is that it does not allow for substitution in response to changes in relative prices.

Major factors in understanding the effects of inflation are: (a) the accuracy of anticipation of inflation, (b) confusion between relative price changes and inflation, and (c) (as an important corollary to the above) the speed and cost of institutional adjustments to inflation. If high rates of inflation were to persist, perceptions, expectations and institutions would more fully reflect potential inflation and its effect would be mitigated. This very important distinction between anticipated inflation and actual inflation should be kept in mind in any discussion of the effects of inflation and especially in drawing conclusions from past inflations about the potential effects of future inflations.

Income and Expenditures of the Elderly and Their Sensitivities to Inflation

The major sources of income of elderly households in the United States are labor market earnings, social security, employer pensions, government cash transfers, private cash transfers, in-kind government transfers, asset income and the use of consumer durables. Some of these income sources are effectively fixed by past choices and circumstances, whereas others are responsive to current decisions. Some decisions are adjusted to changes in the economic environment facing the family (such as changes in actual or anticipated rates of inflation) whereas fixed income sources respond to changes in the economic environment only through institutional or other channels outside a person's direct control.

The elderly might be distinguished from others by their shares of income derived from each of the sources. For example, almost all persons over 65 receive some social security payments, which are now indexed for inflation. But shares of social security income vary widely among the elderly—for some it is the major income source, for others only a minor supplement. Another income source almost universal in coverage is medicare benefits, which form a part of the in-kind government transfers. The importance of medicare depends on the total amount of income available and also on the health of the elderly family. Since this transfer is an in-kind benefit, it is also effectively protected from inflation. Note that as is true for all in-kind transfers, the relative price of the commodity is affected by the form of the transfer.

Income received in the form of specified quantities of consumed goods and services is particularly hard to evaluate. Consider medical services, for example. A household that is eligible for medicare has received a low- (perhaps zero-) pric-

ed insurance plan. Part of the household's income is the value of this insurance. Even if a market value for the insurance could be established, however, some households would not have purchased it at that price. Thus, the household's income is overestimated in valuing medicare at its market value.

These income sources do not depend directly on the current choices of the elderly, but others do depend on individual choice. The choice to retire or to change hours of work are potentially flexible, and the wage earned will be affected by inflation. The value of pension benefits and the decision to accept pensions are also affected by current and anticipated inflation.

Changes in wealth and income from changes in the prices of assets and durable goods affect potential consumption and well-being in each period, even if the asset is not sold and the capital gain is not realized. Take housing services, for example. For a family owning the house in which it resides, part of its total income is the service flow in each period from the house. The family housing expenditure includes use of the house (rather than renting or selling it). An unanticipated increase in the price of houses increases wealth, but on the expenditure side it also increases the value of the service flow of housing received and hence the "expenditure" on housing.

These examples illustrate that inflation may affect the elderly differently from other families and that this effect will not be homogeneous among different segments of the elderly population. The amounts and shares of income received from each source and the decisions about work and other investments determine these differential impacts.

Consumption patterns of the elderly may also differ from the rest of the population. Consumption may be decompos-

ed as current purchases of goods and services, service flows from durables, private in-kind transfers, government in-kind transfers, net savings, and taxes and government services. The issue of taxes is usually dealt with either by using net after-tax income or by letting taxes be an expenditure category. If income tax payments are thought of as a payment for services, then gross income is the measure of income and taxes are one of the expenditure categories.

Given stocks of assets and income, the consumer makes a consumption-savings decision (that is, how much to add or subtract from net wealth) and a portfolio decision (that is, how to allocate savings or dissavings between assets and consumer durables). The saving decision of the household depends on the expected inflation-adjusted interest rate and other factors like expected length of life. The consumer also decides the allocation of current consumption among the potential goods and services. Allocation of consumption depends on the total income to be allocated, prices, and the other constraints that may be placed on the household. An example of these other constraints is the amount and form of in-kind income. Inflation may affect the consumption bundle by affecting relative prices, real current income, or other constraints that apply to the household.

Putting the income and expenditure together allows an accounting of the effect of inflation on potential consumption. In application to elderly Americans, specific facts about institutions, behavior patterns, and relative price changes are considered. This framework does not formally incorporate the increase in costs of mistakes in allocation of resource that follow necessarily from anticipated price changes. Nor does it incorporate the cost of additional resources spent to acquire the process information about price changes.

Measuring the Real Income of the Elderly with the Retirement History Study

This section reports changes in income of older persons using populations from the Retirement History Study (RHS). We show the pattern of income as these groups lived through the inflationary period of the early 1970s. Examining the income of a group of older persons as they age will show the influences of lifecycle decisions along with changing economic conditions.

The RHS is a series of surveys conducted for the Social Security Administration using respondents aged 58-63 in 1969. Married men, nonmarried men, and nonmarried women were interviewed every two years. For this analysis, we use data from the 1969, 1971, 1973 and 1975 surveys. A comprehensive list of income, work and health questions was asked of over 11,000 respondents. The RHS has become the most widely used data for examining the income and work patterns of older persons (Ireland 1972). In each interview, respondents were asked detailed questions concerning their cash income in the preceding year. We focus on average nominal and real income for married couples.

This cohort analysis reveals significant declines in income with aging as earnings decline in response to reduced labor supply. This expected lifecycle pattern of income must not be confused with an inflation effect. The limited evidence suggests that the real income of older persons remained fairly stable during the years before retirement and through the retirement period.

Real Income Patterns

The sources of income in the RHS used to determine family income are earnings, social security, employer pensions,

other governmental cash transfers, and asset income. The RHS survey does not include enough information to assess carefully the movements in other income sources. Earnings are shown separately for husband and wife and represent both wage and self-employment earnings. The other transfer income includes income from disability and welfare programs. Asset income is composed of income from rent, stock and bonds, and savings accounts.

The sample population of families consists of all husband and wife couples that remained together throughout the survey period; i.e., only those couples interviewed in every survey year are included in the base sample. The mean for each income source is calculated from the set of respondents with useable answers to the question concerning the specific income source in question including zero values.

Table 1 shows the income history of husband-wife couples as the ages of the husbands rise from 57 to 62 in 1968 to 63 to 68 years old by 1974. The mean nominal income of \$9,773 in 1968 falls slightly over the six-year period to \$9,129 in 1974. During this period, the consumer price index (CPI) rose from 104.2 to 147.7. As a result, the real income in 1967 dollars of this sample declined sharply from \$9,380 to \$6,181, a fall of 34 percent. The decline in real income occurs in response to inflation and changes in other economic conditions that alter the real returns to assets and labor supply. But the income pattern mostly reflects individual lifecycle decisions, especially declining hours of work in old age.

The changing composition of income is of particular interest to this study. In 1968, earnings represented 88.2 percent of family income; however, by 1974, nominal earnings of the husband had dropped by almost half, and family earnings accounted for only 45.0 percent of total income. This decline is primarily the result of fewer hours worked per workers and fewer workers. These are expected lifecycle patterns. But

the earnings decline is also influenced by changing real wages and family income, which may be altered by inflation. Though earnings are less important to the elderly, even when the husbands are aged 64 to 69, they comprise half of the average family income.

Table 1
Mean Income for Couples in Retirement History Survey
1968-74

Source	1968	1970	1972	1974
Earnings				
Husband.....	\$7,066	\$6,545	\$5,247	\$2,938
Wife	1,550	1,546	1,396	1,172
Social security income.....	190	320	967	2,102
Pension income	340	551	1,026	1,709
Other government transfers	63	220	291	262
Asset income	565	738	937	1,039
Total nominal income.....	9,773	9,762	9,863	9,129
Total real income ^a	9,380	8,394	7,728	6,181
Sample size.....	3,361	3,416	3,376	3,725

SOURCE: Retirement History Study, 1969-75 interviews.

a. Values in 1967 dollars as measured by the consumer price index.

Employer pension and social security benefits account for an increasing proportion of average family income as the household ages. Pensions represented 3.5 percent and social security 1.9 percent of family income in 1968, but they increase in importance to 18.7 and 23.0 percent, respectively, in 1974. Growth in the mean pension and social security income is primarily attributable to the increased proportion of persons receiving these payments. Inflation may alter pension income by influencing labor supply choices and by reducing the real value of a given nominal pension. Other monetary government transfers represent less than 3.0 per-

cent of income in all years. The effect of inflation on this form of income depends on the government response to higher prices in the form of increased benefits.

The significant rise in mean asset income between 1968 and 1972, while the average age of the sample increases for 60 to 64 years, is consistent with a growth in personal wealth in the years immediately prior to retirement. Hurd and Shoven (1982b) found that the real value of stocks and bonds for RHS couples fell, but the real value of bank accounts rose. Real income from current assets depends on the rate of return compared with the change in prices. The elderly experience inflation effects different from others only if the makeup of their investment portfolios differs.

Table 1 suggests that the fall in real income is due primarily to the change in labor market income. This finding is supported by the data in Table 2, which shows real income is fairly stable during the final work years, declines at retirement, and then remains constant during the retirement years. Disaggregating this sample by age of husband, race and residence reveals a similar pattern of decline in real income with age. This decline and changing composition of income is also observed for nonmarried men and women. This conclusion is further supported by an examination of older cohorts in the Panel Survey of Income Dynamics and of respondents in the 1972-73 Consumer Expenditure Survey (see Clark et al., 1984). These findings concerning trends in the real income of older persons as they age are also in general agreement with related findings of Hurd and Shoven (1982a), Barnes and Zedlewski (1981) and Bridges and Packard (1981). For a better understanding of the response of real income to inflation, specific income sources are examined in more detail. This analysis clearly indicates that most sources of income of the elderly rise with increases in consumer prices.

Table 2
Real Income for Families in the Retirement History Study
by Year of Husband's Retirement

	Real income ^a			
	1968	1970	1972	1974
Retire between 1969-71	10,036	7,281	5,229	5,154
Retire between 1971-73	9,953	9,994	7,712	5,327
Retire between 1973-75	9,972	9,602	9,754	7,051
In labor force 1969-75	9,980	9,711	9,718	9,003

SOURCE: Retirement History Study, 1969-75 interviews.

a. Values in 1967 dollars are measured by the consumer price index.

Earnings

Individuals develop lifecycle plans for time and resource allocation that generate anticipated age-earnings patterns. As persons age, they tend to reduce their labor supply either by entirely leaving the labor force or by working fewer hours. The declines in mean cohort earnings reported earlier are not unexpected and should not be considered mainly a response to inflation. However, unanticipated events such as unexpectedly high rates of inflation may cause persons to change their lifetime plans of work and retirement. These changes would occur in response to changes in the real wage rate and to shifts in the real value of wealth.

As long as real wages and real wealth are unchanged in response to inflation, older persons would likely not modify their work and retirement plans during periods of rising prices. The important issues are how inflation alters the real compensation package and wealth that a person expects. Clearly, the wage may change in late life even without price changes. The wage could be changing in response to economy-wide productivity gains, other macroeconomic

conditions, individuals augmenting their skills, or persons suffering declines in their talents, perhaps because of health declines. Lifecycle models usually predict declining real wages during the final work years (Ghez and Becker 1975).

Various institutional arrangements such as labor contracts and equal opportunity laws may limit wage adjustments by hampering reductions in nominal wage rates while allowing real wage reductions. Inflation may permit some firms to lower real wages and encourage earlier retirement. Even if the cash wage rises at the same rate as prices, the total compensation may fall because of the effect of inflation on the real value of fringe benefits. For example, the real value of initial pension benefits decline with rising prices if the benefit is determined using a salary averaging period (Clark and McDermed 1982).

Table 3 shows that the labor force participation rate for husbands fell from 79.4 to 25.2 percent between 1968-1974. For men in the labor force, average hours of work declined from 42.6 to 34.4 hours per week. Smaller declines occurred for wives in both of these measures of labor supply. These reductions in labor supply reflect declines in work with age and responses to inflation and other economic events.

Table 3
Labor Supply of Couples

	Husbands		Wives	
	Labor force participation	Hours per week	Labor force participation	Hours per week
1969	79.4	42.6	33.1	35.9
1971	65.1	41.3	31.7	35.8
1973	40.5	39.4	25.5	34.9
1975	25.2	34.4	20.1	32.9

SOURCE: Retirement History Study, 1969-75 interviews.

During this period, average earnings for men declined by more than 57 percent, reflecting reduced market work. Earnings of wives fell by 23 percent. These declines in nominal earnings occurred despite rising nominal wages. The average nominal wage of working men rose by one-third from \$3.71 in 1969 to \$4.93 in 1975 and the mean nominal wage of working wives rose by 60 percent. However, the real wage of men fell by almost 10 percent and average real earnings dropped 70 percent. By contrast, the real wage of the wives, who are usually slightly younger than their husbands, rose by 10 percent, but their real earnings fell because of reduced labor supply.

Social Security

Throughout the first three decades of the existence of the social security system, benefits were increased periodically by specific congressional action. The 1972 amendments provided for automatic indexing of benefits starting in 1975. Past earnings records were indexed to provide for rising real initial benefits. Both the indexing and the *ad hoc* changes have actually increased the real value of social security benefits for many retirees. For example, the benefits of a person retired in 1967 would have risen by 171 percent between 1968 and 1979. Since the CPI rose by 117.7 percent, real social security benefits have increased by approximately 25 percent. Most of these real increases occurred between 1968 and 1972, prior to the automatic adjustment of benefits. Since that time, benefits have risen in step with increases in the CPI, and the real value of benefits has by and large remained constant. Nominal increases in benefits after retirement between 1968 and 1982 are shown in Table 4.

An examination of increases in social security benefits in the RHS sample indicates that real social security income was largely insulated from erosion by price increases. The ad

Table 4
Social Security Benefits in January of Each Year^a as a Percent of Initial Benefits

Year	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
1968	100	113	130	143	143	172	172	190	106	219	212	247	271	310	345
1969		100	115	127	127	152	152	168	182	194	205	218	240	274	305
1970			100	110	110	132	132	147	158	168	178	190	209	239	266
1971				100	100	120	120	133	144	153	162	173	190	217	241
1972					100	120	120	133	144	153	162	173	190	217	241
1973						100	100	111	120	128	135	144	158	181	201
1974							100	111	120	128	135	144	158	181	201
1975								100	108	115	122	130	142	162	180
1976									100	106.4	113	120	132	151	168
1977										100	105.9	113	124	142	158
1978											100	106.5	117	134	149
1979												100	109.0	126	140
1980													100	114.3	127
1981														100	111.2
1982															100

SOURCE: *Social Security Bulletin: Annual Statistical Supplement*, 1977-79, p. 26 and recent issues of *Social Security Bulletin*.

a. The values along a row indicate the Social Security benefit in each year as a percent of benefits in the year a person retired. For example, find the year of retirement on the left-hand column, say 1971. In 1974, the benefit for a person who retired in 1971 is 120 percent of the initial benefit received in 1971. These percentages represent the minimum percentage increase in primary insurance amounts.

hoc increases in post-retirement benefits were sufficient to stabilize or increase real benefits during this decade. Initial benefits were rising more rapidly than the rate of inflation. These findings have important implications for the impact of inflation on the well-being of the elderly. First, this important component of income of older persons has not declined with price increases. Since over 90 percent of persons 65 and over receive social security benefits, this is a significant observation. Second, low income persons rely more heavily on social security benefits since they tend not to have other forms of cash income. For example, the 1970 Survey of Newly Entitled Beneficiaries indicated that for the lowest income groups social security benefits accounted for over 80 percent of total cash income, but for high income groups, social security is less than 20 percent of income.

Initial benefits at retirement also have risen rapidly. Table 5 illustrates the rise in initial benefits when average monthly earnings are held constant over time. Rising lifetime earnings of successive cohorts of retirees have produced additional gains in initial benefits because of higher average monthly earnings.

Pension Benefits

The real value of pension benefits during retirement is determined by the rate of inflation and the extent of any post-retirement benefit increases. One method of illustrating the effect of inflation on the real value of pension benefits is to calculate the expected wealth value of a constant benefit over a person's life. In this formulation, the value of the pension annuity is discounted by an interest rate and the probability of remaining alive to receive the benefit. For a 60-year-old male retiree, a 7 percent annual rate of inflation lowers the discounted value of his pension wealth by 58 percent (Clark and McDermed 1982).

Table 5
Benefits for Persons Starting Payment at Age 65
in Various Years When Average Monthly Earnings
are \$250, \$500, \$750, \$1,000

Year	AME			
	\$250	\$500	\$750	\$1,000
1969	114.51	117.51	218.00 ^a	218.00 ^a
1970	131.68	209.13	250.70 ^a	250.70 ^a
1971	144.85	224.56	295.40 ^a	295.40 ^a
1972	144.85	224.56	295.40 ^a	295.40 ^a
1973	173.82	269.46	354.97	404.50 ^a
1974	192.93	299.10	394.01	449.54
1975 ^b	208.37	323.03	425.53	485.48
1976 ^b	221.69	343.66	452.73	516.50
1977 ^b	234.77	363.94	479.454	547.00
1978 ^b	250.03	387.60	510.62	582.57
1979 ^b	274.78	425.60	561.18	640.25

SOURCE: Derived from information in *Social Security Bulletin: Annual Statistical Supplement, 1977-79*, pp. 15-19.

a. Reached or exceeded the maximum level of PIA.

b. Law was effective in June of the given year.

This illustration assumes that pension benefits are not increased after a person retires and begins receiving benefits. Many pension plans, however, are increased in response to inflation, so benefits rise when the CPI increases. For example, the Federal Civil Service Retirement system has been fully indexed since 1962 and many private plans provide ad hoc increases (King 1982). Allen, Clark and Sumner (1984) report that the average pension benefit for persons who retired before 1973 rose by 24 percent between 1973 and 1979. This represented 40 percent of the CPI rise during the period. These increases were widespread, as 75 percent of all beneficiaries received at least one increase.

Table 6 shows the mean real pension benefit of married men in the RHS between 1968 and 1974. The sample is divided by the survey year in which these men first are shown to be receiving benefits. For persons who were receiving benefits in 1968, the mean real 1974 benefit was only 3 percent lower. Somewhat larger declines are observed for the groups that began to receive benefits in 1970 and 1972.

Table 6
Real Pension Benefits of Married Men in RHS, 1968-74

Year of first benefit	Real pension benefit ^a			
	1968	1970	1972	1974
1968	2,619 ^b	2,325	2,341	2,547
1970		2,159	2,107	2,071
1972			2,220	1,956
1974				1,942

SOURCE: Retirement History Study, 1969-75 interviews.

a. Benefits are in 1967 dollars as measured by the consumer price index.

b. The 1969 survey did not identify the proportion of family pension income in 1968 attributable to the husband and wife. The 1968 figure represents our estimate based on examination of information in subsequent surveys and 1969 data on family members receiving pension benefits.

These declines seem surprisingly small, especially for those who have been retired the longest. This is due to the use of the mean as a summary statistic and the fact that some people report large increases in pension benefits from one survey to the next. The pension income of these men may rise because firms have raised their benefits or because they begin to receive a second pension. The addition of a second benefit may substantially boost pension income and have a significant effect on the sample mean. This possibility is shown in Table 7 by the fact that over 20 percent of the men have a 25 percent or larger gain in real benefits between the year of in-

initial benefits and 1974. Table 7 also shows that when the sample is divided at the mean of initial benefits, fewer persons with initial benefits below the mean had a decline in the real value of their benefits. Further evidence that much of the gain in real pension income is due to the starting of a second pension is the finding that almost 90 percent of persons with gains of 25 percent or more are persons who had pension income below the mean when they first started receiving benefits. Thus, it seems likely that these men began pensions from previous jobs as soon as they were eligible for benefits. These relatively low benefits were eventually supplemented by retirement income from more recent employment.

Table 7
Percent of Beneficiaries with Change in Pension Income
Between Initial Year of Benefits and 1974

	1968 retirees	1970 retirees	1972 retirees
Any increase in nominal benefits	49.1	52.9	53.2
Loss in real benefits	70.0	64.7	69.0
Gain in real benefits	30.0	35.3	31.0
Above mean benefit			
Loss in real benefits	79.3	78.3	81.4
Gain in real benefits	20.7	21.7	18.6
Below mean benefit			
Loss in real benefits	64.9	57.7	62.1
Gain in real benefits	35.1	42.3	37.9

SOURCE: Retirement History Study, 1969-75 interviews.

These results are generally consistent with the findings of Thompson (1978) that the median pension benefit for completely retired pensioners in the RHS aged 63-64 rose from \$1,980 in 1970 to \$2,160 in 1974. This represents a fall in the

real value of the benefits, since the CPI increased by 14 percent and the nominal benefits rose by only 9 percent. The use of completely retired persons probably eliminates many persons who acquired a second pension but continued employment. This restricting of the sample population reduces the variability of pension income over the period and reduces much of the gains in pension income.

Evidence on Real Incomes of Persons 65 and Older

In contrast to the cohort analysis that follows a specific group of individuals over time, this section uses aggregate data to indicate the rising real income of all persons 65 and older in each year. This analysis starts with a review of the trend in cash income and then extends the discussion to include the use of time and the value of in-kind benefits.

The median cash income, deflated by the CPI, of families whose head is aged 65 or older rose by almost 100 percent between 1950 and 1980. This rising real income of the elderly is own in Table 8. Compared to that of all families, the relative income of older families declined by 10 percent in the 1950s, remained fairly stable during the 1960s and rose by 20 percent during the 1970s. Because the median income of all families can be substantially affected by the age-composition of the population, the real income of older families is compared in Table 8 with that of families whose head is age 45-54. Heads of these families are in their peak earnings years, thus the ratio of the income of elderly families to that of families with heads aged 45-54 will be lower than when compared to the relative income of all families. Compared to the income of these middle-aged families, the relative income of older families fell by 13.4 percent during the 1950s and by 6.7 percent in the 1960s before rising by 13.4 percent during the 1970s (see Table 9). During these decades, the consumer price index rose by 23.3 percent, 31.1 percent, and 112.4 per-

cent, respectively. Thus, the loss in relative income was greatest when inflation was the lowest and there was a significant gain in relative income during the high-inflation decade of the 1970s. It could be argued that the rise in relative income of the elderly occurred because of the virtual cessation of real economic growth during the 1970s which stopped the growth in the real income of workers. By contrast, the real income of the elderly continued to rise with increases in the real value of government transfers.

Table 8
Real Median Family Income

	Head of family 65 and over (1)	Head of family aged 45-54 (2)	Relative income of elderly families [(1 ÷ 2)x100]
1950	\$2,639	\$ 5,110	51.6
1955	2,900	6,344	45.7
1960	3,266	7,303	44.7
1961	3,377	7,491	45.1
1962	3,536	7,770	45.5
1963	3,655	8,086	45.2
1964	3,634	8,344	43.6
1965	3,661	8,717	42.0
1966	3,750	9,116	41.1
1967	3,927	9,676	40.6
1968	4,348	10,012	43.4
1969	4,374	10,561	41.4
1970	4,345	10,422	41.7
1971	4,495	10,706	42.0
1972	4,763	11,218	42.5
1973	4,827	11,437	42.2
1974	5,081	11,210	45.3
1975	4,998	10,899	45.9
1976	5,115	11,165	45.8
1977	5,019	11,478	43.7
1978	5,193	11,580	44.8
1979	5,202	11,661	44.6
1980	5,215	11,035	47.3

SOURCE: U.S. Bureau of Census, *Current Population Reports*, Series P-60, various years.

a. Values derived by deflating nominal income by CPI, 1967 = 100.

Table 9
Change in Real and Relative Income

	Percent increase in real cash median income		Percent change in relative income of elderly ^a	Percent change in consumer price index
	Family head aged 65 & over	Family head aged 45-54		
1950-60	23.8	42.9	-13.4	23.3
1960-70	33.0	42.7	-6.7	31.1
1970-80	20.0	5.9	13.4	112.4

SOURCE: Table 8.

a. Percent change in last column of Table 8.

A further indication of the improving relative income of the elderly is the decline in the incidence of poverty among older Americans. Table 10 shows this decline along with the change in the poverty rate for the total population. The decline of poverty among the elderly has been much greater than among other groups, and in 1982 for the first time the poverty rate of the elderly was less than that for the population at large.

The subsection on earnings showed that households also vary the way in which they allocate their time in order to influence their level of living. Instead of market work, time can be used to produce services consumed by the family. These services may be in the form of meal preparation, home repairs, leisure time, etc. Time at home is an important aspect of family well-being. The trends in cash income presented above do not include changes in time at home that would affect family well-being.

Age-specific labor force participation rates are one measure of the intensity of market work by a population group and hence are an indirect measure of time available for home activities. Table 11 shows that the participation

rate for males aged 65 and over fell by over 50 percent between 1950 and 1980. Participation rates for older women have fallen slightly during this period. Thus, the rise in real income reported in Table 8 understates the increase in welfare because of significant increases in home time by the elderly. By contrast, the total work effort of persons 45-54 increased during these three decades and the gains in income for them overstates the rise in their well-being.

Table 10
Poverty Rates of the Elderly and Total Population

	Elderly		Total population	
	Poverty rate	Number of persons (in millions)	Poverty rate	Number of persons (in millions)
1959	32.2	5.5	22.4	39.5
1968	25.0	4.6	12.8	25.4
1969	25.3	4.8	12.1	24.1
1970	24.5	4.7	12.6	25.4
1971	21.6	4.3	12.5	25.6
1972	18.6	3.7	11.9	24.5
1973	16.3	3.4	11.1	23.0
1974	15.7	3.3	11.6	24.3
1975	15.3	3.3	12.3	25.9
1976	15.0	3.3	11.8	25.0
1977	14.1	3.2	11.6	24.7
1978	14.0	3.2	11.4	24.5
1979	15.2	3.7	11.6	25.3
1980	15.7	3.9	13.0	29.3
1981	15.3	3.9	14.0	31.8
1982	14.6	3.8	15.0	34.4

SOURCES: U.S. bureau of Census, *Current Population Reports*, Series P-60, No. 127, "Money Income and Poverty Status of Families and Persons in the United States: 1980" (Advance Data from the March 1981 Current Population Survey), GPO, Washington, 1981, p. 29 and U.S. Bureau of Census, *Current Population Reports*, Series P-60, No. 140, "Money Income and Poverty Status of Families and Persons in the United States: 1982," GPO, Washington, 1983, p. 4.

Table 11
Labor Force Participation Rates

	65 and over		45-54	
	Males	Females	Males	Females
1950	45.8	9.7	95.8	37.9
1955	39.6	10.6	96.5	43.8
1960	33.1	10.8	95.7	49.8
1965	27.9	10.0	95.6	50.9
1970	26.8	9.7	94.2	54.4
1975	21.7	8.3	92.1	54.6
1979	20.0	8.3	91.4	58.4
1980	19.1	8.1	91.2	59.9

SOURCE: U.S. Bureau of the Census, *Current Population Reports*, Series P-60, various years.

Cash income also ignores the value of in-kind transfers received by older persons. Besides family and other private transfers, the federal government provides in-kind benefits in the form of health insurance and payment for medical services, food stamps and other nutritional programs, housing assistance, and energy assistance. Most of these programs have been initiated and expanded during the last two decades. For example, medicare and medicaid were established by legislation in 1965 and Table 12 shows the significant increase in the real value of these benefits per older person during the 1970s. The combined real value of medicare and medicaid for the average older person rose from \$324.25 in 1970 to \$580.98 in 1981, or an increase of 79 percent. Thus, the inclusion of medical in-kind benefits with cash income would result in an even greater rise in the real income of the elderly during the 1970s than that indicated in Table 8. Other in-kind transfers have also increased in real value. For example, the real value of the subsidy for food stamps rose from \$95.16 per older recipient in 1970 to \$144.55 per older recipient in 1981.

Table 12
Real In-Kind Transfers of Medical Services
Per Persons Aged 65 and Over

	Medicare^a		Federal Medicaid^b
	Health insurance	Supplemental health insurance	
1970	215.07	47.26	61.92
1975	278.70	69.72	76.72
1978	309.42	92.38	90.95
1981	370.54	126.54	83.90

a. Values deflated by the medical component of the consumer price index, 1967 = 100.

b. Estimates for total medicaid expenditures for persons aged 65 and over are divided by population aged 65 and over. Expenditure estimates are from unpublished data from Department of Health, Education and Welfare (1978); Califano (1978) and U.S. Congressional Budget Office, 1982. Nominal values are deflated by the medical component of the consumer price index.

The Growth of Federal Transfer Programs to the Elderly

This section provides documentation of the role of federal transfers in the income of the elderly. During the past half century, the federal government has played an increasing role in the determination of the economic well-being of the elderly. The growth and development of cash and in-kind benefit programs has significantly altered the sources of income for most older persons. Federal expenditures on the elderly include payments through retirement programs, old age survivors disability insurance (OASDI), health-care subsidies, welfare programs, housing assistance and social services. Table 13 lists the specific programs and the costs of transfers from these programs in fiscal 1982 (U.S. Congressional Budget Office 1982; also see Califano 1978).

These federal expenditures have risen dramatically since the early 1960s because of legislative changes and growth in

the older population. The number of people aged 65 and over has increased by 57.5 percent, from 16.7 million in 1960 to 26.3 million in July 1981. Benefit programs to the elderly were \$12.8 billion in 1960, whereas expenditures in 1982 reached \$196.2 billion, a fifteenfold increase. These figures do not include the value of preferential tax treatment given to the elderly.

Table 13
Estimated Federal Outlays for Persons 65 and Older
by Program, Fiscal Year 1982
 (in billions of dollars)

Program	Outlays
Social Security	111.8
Medicare	39.7
Other federal retirement and survivor programs	21.1
Medicaid	6.5
Veterans' benefits	4.3
Housing Assistance	3.3
Supplemental Security Income	2.9
Other federal health programs	2.3
Administration on Aging	0.7
Food stamps	0.6
Title XX Social Services	0.4
Energy Assistance	0.2
Other	2.4
Total	196.2

SOURCE: U.S. Congressional Budget Office, *Work and Retirement: Options for Continued Employment of Older Workers*, Washington: GPO, July 1982, p. 55.

Between 1960 and 1982, the CPI more than tripled. As a result, expenditures measured in 1967 dollars were \$14.4 billion in 1960, and real spending on these programs in 1982 was five times the 1960 level. Thus, although two-thirds of the growth rate in annual spending on the elderly is due to price increases, there still has been a significant increase in

the real resources allocated to these programs. The proportion of the federal budget used to finance these programs rose from 13 percent in 1960 to 26.6 percent in 1982; the proportion of the gross national product allocated to these benefit programs rose from 2.5 to 5.9 percent (Califano 1978; Torrey 1982).

Another way to measure this growth is to note that the average benefit per person aged 65 and older increased from \$768 in 1960 to \$7,948 in 1982. If benefits had been increased only to reflect price increases, the average benefit would have been \$2,516 in 1982; if benefits had risen in accordance with the growth in per capita disposable income, on the other hand, the transfer per elderly person would have been \$3,663 in 1982. This increase is the result of the introduction of new programs, higher benefits under existing programs and less restrictive eligibility conditions. Thus, much of the "graying" of the federal budget has occurred because of explicit policy changes by the federal government (Clark and Menefee 1981). One important change in federal policy has been the indexing of government programs to changes in consumer prices. Presently, 86 federal programs now have one or more provisions that increase in response to a rise in some index, usually a measure of prices or wages (U.S. Congressional Research Service 1981). Indexing reduces the lag and uncertainty of increases caused by ad hoc adjustments.

The Relative Impact Imperfectly Anticipated Inflation

In addition to changes in real income, there are general effects of inflation on well-being that arise from its unpredictability. Correctly anticipated inflation not entailing relative price changes causes people to hold less cash and make more frequent transactions, but these are relatively minor costs (Dornbusch and Fischer 1981; Gordon 1981). However, the

rate of inflation is seldom fully anticipated and higher rates of inflation tend to be accompanied by more relative price variability and by more variability in the rate of inflation (Vining and Elwertowski 1976; Bordo 198]; Parks 1978; Cukierman 1979; Logue and Willett 1976). When incorrectly anticipated, an inflation factor is not built into market transactions and institutions of an economy. This causes the basic losses in well-being and sense of unfairness that make inflation so unpopular.

The elderly share in losses to the whole economy from not fully anticipated inflation, but they are not likely to suffer more, on average, than other groups. Two factors are involved in their relative losses. First, any group that tends to be more mistaken in its inflation expectations would lose more. Given that the elderly have had more experience with economic and political change and have more time away from work to devote to market transactions, they may well do a better job of correctly anticipating inflation rates. Second, any group that has higher costs of adjusting investment and consumption patterns to changes in relative prices implied by inflation would lose more. The elderly are more likely to be retired and thus potentially more mobile; they have more time away from jobs to be used for leisure and consumption, so they may be more flexible in their buying and investment decisions. Thus, there is no presumption that the elderly suffer more or less from the welfare losses due to mistakes and adjustment costs than do others as the economy faces inflation.

Summary and Implications

Earlier sections of this paper have been devoted to examining the historical record of improving real income of the elderly. this analysis will be useful for current policymaking only if general and continuing relationships exist. The objec-

tive of this final section is to assess the findings of this research for projecting the future status of the elderly.

The elderly tend to spend larger proportions of their incomes on food at home, medical care, and utilities than do younger families. Reasons for these differences include lower income for older families, more time at home, and declining health with age. These different spending patterns imply different sensitivities to relative price changes.

There is no theoretical reason to expect relative price changes of the 1970s to continue into the future. For example, house prices rose rapidly during the 1970s but rose at a slower rate during the early 1980s. Also, food prices have risen more than the CPI in some years and less in others. The importance of relative price changes in determining changes in well-being should not be overlooked, but existing research on age-specific price indices suggests that price increases affecting particular demographic groups do not deviate substantially from the increase for the general population. Recognizing substitution in consumption further moderates the effects of differences in relative price changes on the increase in the price of the market basket actually purchased by different groups.

These basic concepts and review of recent price changes indicate that relative price changes within a general inflation will have only minor effects on the well-being of the elderly compared to those for other demographic groups. Thus, the primary issue governing the effect of inflation on real income of the elderly is the responsiveness of their incomes to rises in the general price level and costs imposed by imperfectly anticipated price changes.

Earnings are determined by the amount of labor supplied and the market wage rate. Although labor supply falls with age, earnings remain an important source of income for

many older persons. Real wages rise with growth in productivity. There is no theoretical reason why growth in the real wage rate for older workers would deviate from this general pattern of wage growth in the economy. This source of income should not cause changes in relative income between the elderly and the total population, and, in general, real wage growth will contribute to rising real income.

Social security retirement benefits and other governmental transfers have increased rapidly in real value during the past two decades. Since government transfers are now a major source of income for older persons, their responsiveness to price increases is an important determinant in the effect of inflation on real income. If the recent legislative patterns were to continue along with the existing indexation of programs, the trend in real income of the elderly established during the last two decades could be expected to continue. However, many demographic, economic and political factors are changing in ways that will limit the growth of transfer payments to the elderly.

Social security legislation passed in 1983 represented the culmination of years of debate concerning the long- and short-run financial crises the system was facing. This legislation provided for significant changes in the system and provided for a projected funding balance over the next 75 years. While the basic tenants of the program were left unchanged, the 1983 cost-of-living increase was delayed six months and full indexing in the future was made conditional on the relative size of wage and price increases. These changes slightly reduce the inflation protection guaranteed through this major source of income to the elderly.

The aging of the population, especially in the first 20 years of the next century, will require a major restructuring of the total income maintenance system for the elderly. Either taxes must be raised substantially, benefits must be lowered or

funds diverted from other national priorities. The 1983 social security legislation attempted to address this long-run problem by raising the age of eligibility for full benefits to 67 in the next century. In addition, medicare must be reevaluated to prevent rapidly rising costs from producing large deficits; in the coming decades other transfers likely will be affected by this demographic pressure which may limit their future growth.

The increase in real benefits for older persons was stimulated in large measure by the belief that many older persons were destitute and private methods would not provide the necessary transfers. The rise in real and relative income of the elderly, along with a sharp decline in the incidence of poverty, has reduced or eliminated some of the pressures for major new programs or increases in real benefits for the elderly in general. Recent budgetary initiatives have reduced benefits and tightened eligibility conditions for medicaid, food stamps, and other welfare programs that provide benefits to some older persons. Social security and medicare benefits have also been altered during the early 1980s.

The trend toward indexation of these benefit programs is attributable to the still commonly held view that the elderly live on fixed incomes. The full and perhaps over indexation of benefits during the past decade when real wages were falling has sharply challenged this belief. As a result, the indexation of social security, government pensions, and other transfers has been critically examined and numerous proposals for their reductions have been made. Changes in the methods of indexing federal pensions and food stamps have already been enacted and further modification of other indexing provisions seems likely during the 1980s.

High rates of inflation may cause financial institutions to be altered so that future payments reflect price changes. For

the elderly, one of the most important of these institutions is the employer pension system. Available evidence indicates that real pension benefits after retirement have declined with inflation. This is despite the fact that many firms provide ad hoc increases. A more formal adjustment mechanism would seem likely if high rates of inflation were to continue for another decade.

Real income from assets depends on changes in the relative rate of return to the items in an individual's investment portfolio. Rates of return fluctuate over time, with price changes in houses, gold, diamonds, and stocks being recent examples. Wealth allocation decisions of the elderly will be based on expected future inflation rates and real rates of return to their assets. In such a framework, the expected effects of inflation on the real wealth of the elderly should not differ greatly from its effects on the rest of the population.

Older persons also consume from their stock of durable goods. These goods include the family car, home, furniture, appliances, etc. The nominal value of consumption rises as the replacement costs of these durables rise. The real value of consumption from durable goods should be unaffected by price increases and since the elderly often have a relatively large stock of durables, the "indexation" of this income source is important.

This summary indicates that most sources of income of the elderly rise in response to increasing prices. There is no fundamental reason to expect real earnings or return to assets to fall with inflation. Most government transfer programs are currently indexed to reflect price increases automatically. However, policy changes in the next few years may alter these provisions. Nominal pension benefits have been increased, but, in general, these increases lag behind price changes; however, future institutional changes may moderate this effect. Thus, income from private sources is not fixed.

Our analysis shows that currently it is not true that the elderly live on fixed incomes and are, therefore, more vulnerable to inflation than the total population. This is especially true for low-income older persons who receive almost all of their income from public sources. Did the elderly ever live on fixed incomes? This question is beyond the scope of this paper; however, several issues are relevant. Prior to World War II, over half the men aged 65 and over remained in the labor force and thus had earnings that rose along with those of other workers. Many lived on farms and retained control of the extended family's resources. Transfers from the family may have been replaced by government transfers during the past several decades.

In the future, the effect of inflation on the real income of the elderly will depend on private responses and government changes. Will children increase their support for their aged parents? Will individuals alter their lifecycle savings plans to provide increased wealth for old age? Will the trend toward early retirement be reversed? Will changes in political and economic climate lead to a reversal of existing inflation protection of the income of the elderly? Answers to these questions will determine the future level of income and the effects of inflation on the well-being of the elderly.

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