

# Impact of Inflation on Private Pensions of Retirees, 1970-74: Findings From the Retirement History Study

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Many private pension plans have provided benefit increases or other forms of protection against inflation to their retired workers in recent years. This article, based on panel data from the Retirement History Study, examines the extent to which completely retired persons in their sixties benefited from these increases from 1970 to 1974. The private pension benefits of retirees rose slightly during the period, but their purchasing power declined sharply on account of the considerable growth in the inflation rate. Social security benefits, on the other hand, rose substantially more than the consumer price index. As a result, total retirement benefits largely maintained or nearly maintained their purchasing power.

Inflation has become a serious problem for all Americans, but for those relying heavily on fixed incomes—such as private pensions—the problem is even worse. The consumer price index (CPI) rose 27 percent in the period 1970-74, compared with 5 percent for 1960-64 and 16 percent for 1965-69. It increased an additional 13 percent from 1975 to 1977 and is continuing its steep upward climb in 1978.

The adequacy of private pension benefits can be evaluated partly in terms of the size of the replacement rate—that is, the proportion of preretirement income—usually earnings—replaced by private pensions, either alone or in combination with social security benefits. Although the establishment of adequate replacement rates is an important first step in maintaining standards of living upon retirement, these standards will deteriorate with the passage of time unless pension income is adjusted for inflation.

Table 1, which is taken from Robert Clark's discussion<sup>1</sup> of this point, demonstrates how the purchasing power of retirement income declines under different rates of inflation. Given an initial replacement rate of 100 percent, a 3-percent annual rate of inflation, and no increase in benefit levels, the real replacement rate would decline to 86 percent after 5 years of retirement

and 64 percent after 15 years. At higher inflation rates, real replacement rates would obviously decline even more rapidly.

**Table 1.**—Real replacement rates after 5, 10, 15, and 20 years of retirement with alternative rates in inflation<sup>1</sup>

Years in retirement	Real value of retirement income based on initial replacement rate of 100 percent			
	No inflation	Annual rate of inflation		
		3 percent	5 percent	10-percent
0	100	100	100	100
5	100	86	78	62
10	100	74	61	39
15	100	64	48	24
20	100	55	38	15

<sup>1</sup>Appears as table 11 in Robert Clark, *op cit*.

A growing number of pension plans, especially those covering large numbers of workers (such as those in the automobile industry), per retirement at age 55 with at least 10 years of service or contain a "30-and-out" provision that permits retirement with unreduced benefits after 30 years of service at any age.<sup>2</sup> According to industry spokesmen, early retirement under these plans is increasingly popular.<sup>3</sup> At General Motors, for

<sup>2</sup>Bankers Trust of New York, *1975 Study of Corporate Pension Plans, 1975*, and Evan L. Hodgins, "Key Changes in Major Pension Plans," *Monthly Labor Review*, July 1975, pages 22-27.

<sup>3</sup>Bureau of National Affairs, "Early Retirement GM, Chrysler Spokesmen See Trend in 1976 Figures for Auto Industry," *BNA Reporter*, No. 141, June 13, 1977, A14-15.

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<sup>1</sup>See Robert Clark, *The Role of Private Pensions in Maintaining Living Standards in Retirement*, National Planning Association, October 1977, table 11.

example—where “30-and-out” is available—29 percent of those retiring in 1976 were under age 55, 60 percent were aged 55–64, and 11 percent were aged 65–68

The growing availability and apparent popularity of liberalized early-retirement provisions for nondisabled workers under private pension plans will probably mean that many retirees who have private pension income will have long periods of retirement. In 1975, men at ages 55, 62, and 65 were expected to live 20.3, 15.5, and 13.7 years, respectively.<sup>4</sup> Unless private pension benefits are systematically adjusted for inflation, persons retired for a long time will find their private pension income seriously eroded over the years.

Moreover, the economic position of these retirees will fall behind that of the working population because retirement benefits—private pension and social security benefits—are not automatically adjusted for increases in real wages after retirement. An analysis of 1971 income among older nonmarried women social security beneficiaries showed that OASDI (old-age, survivors, and disability insurance) primary insurance amounts and total money income decreased monotonically with age.<sup>5</sup> The major conclusion of that analysis was that the poorer income situation of the oldest cohort of beneficiary women was due largely to the fact that the OASDI benefits of long-term beneficiaries did not reflect the higher wage levels and taxable maximums in effect following the date of initial benefit receipt.

## Changes in Pension Plan Provisions

Recognizing the negative effects of inflation on the purchasing power of social security benefits, Congress has periodically legislated benefit increases. In the face of accelerating inflation, Congress amended the Social Security Act in 1972 to provide for automatic cost-of-living increases in line with increases in the CPI. The automatic escalator, modified in 1973, became effective for 1975.<sup>6</sup> Between January 1971 and June 1974, legislated benefit increases resulted in a cumulative increase of 47 percent<sup>7</sup> in benefit levels, which is substantially higher than the 23-percent increase in the CPI over the same period. The particularly high (20 percent) increase in 1972 was a one-time, unusual adjustment designed to reflect inflation as well as to provide beneficiaries with an adjustment for increased productivity.

<sup>4</sup>National Center for Health Statistics, *Vital Statistics of the United States, 1975 Life Tables* (vol II, sec 5), 1977

<sup>5</sup>Gayle B. Thompson, “Aged Women OASDI Beneficiaries: Income and Characteristics, 1971,” *Social Security Bulletin*, April 1977

<sup>6</sup>For a description of the automatic provisions in the Social Security Act, see the *1975 Annual Statistical Supplement to the Social Security Bulletin*, page 28

<sup>7</sup>Social security benefit increases, by effective date, were 10 percent, January 1971, 20 percent, September 1972, 7 percent, March 1974, and 4 percent, June 1974

According to analyses performed by the Bankers Trust Company and the Bureau of Labor Statistics,<sup>8</sup> many private plans also were amended during the first half of the 1970's. These changes were made in response to accelerated inflation.

Benefit plan changes can be divided into two types: (1) accrual-stage changes—affecting future benefits of currently employed workers and (2) payment-stage changes—affecting the benefits of currently retired workers. At the accrual stage, benefit rates (measured either as a percent of earnings or as a flat benefit per year of credited service) were raised in a substantial number of private plans from 1970 to 1975. Another major accrual-stage change implemented in that period to combat inflation converted many earnings-based plans from career-earnings to final-earnings formulas.

Among plans already using a final-earnings formula, many shortened the earnings base period from the final 10 to the final 5 years of earnings. Eliminating years of outdated earnings from benefit calculations keeps benefit levels more in line with wage increases up to the point of retirement.

The extension of periodic (nonautomatic) benefit increases to retirees, achieved through collective bargaining or done at the employer's initiative, was by far the most common method used in the early 1970's to provide retired workers with some protection against inflation. About two-thirds of the plans studied by the Bankers Trust Company provided at least one benefit increase to retirees in the period 1970–75, many had more than one increase. About one-sixth of these plans, however, have never raised retired workers' benefits.

A small number of plans made automatic cost-of-living adjustments based on changes in the CPI. Most of these plans limited the annual increase to some fixed percentage. Employers are reluctant to adopt this approach, however, because of the effect of such adjustments on the long-range costs of pension plans.<sup>9</sup>

A few private pension plans provided retirement benefits in the form of variable annuities, the value of which rises or falls with the market value of the investment portfolio. The theory behind the use of the variable annuity for retirement income is that, over the long run, equity investments will keep pace with both inflation and increases in industrial productivity. Many people have come to challenge this assumption, however, in the wake of the recent economic experience of simultaneous high inflation and depressed stock values.<sup>10</sup>

<sup>8</sup>Bankers Trust Company of New York, *op cit*, and Evan L. Hodgins, *op cit*. These studies do not include a representative sample of all private pension plans but provide useful information on current trends in plan provisions.

<sup>9</sup>Robert Clark, *op cit*, page 42, and Everett T. Allen, Joseph J. Malone, and Jerry S. Rosenbloom, *Pension Planning: Pensions, Profit Sharing, and Other Deferred Compensation Plans*, Richard D. Irwin, Inc., 1976, pages 204–205.

<sup>10</sup>E. T. Allen, J. J. Malone, and J. S. Rosenbloom, *ibid*.

## Plan of Analysis

Many private pension plans have extended benefit increases or other forms of protection against inflation to retired workers in recent years. No known national data are available, however, concerning the number of pensioners who have received benefit increases or the extent to which these increases have maintained the purchasing power of their benefits. This article examines changes from 1970 to 1974 in the private pension benefits of completely retired persons in their sixties. Of primary interest are the extent to which the private pension benefits of retired individuals have kept pace with inflation and the effectiveness of social security benefit increases in preventing the erosion of retirement income among private pensioners.

The data examined are from the Retirement History Study (RHS) of the Social Security Administration—a national sample 10-year panel study of the retirement process in the United States.<sup>11</sup> In 1969, the first year in which data were collected, the respondents were aged 58–63. The same individuals have been reinterviewed every 2 years since then. The target population includes men—married and nonmarried—and women who were not married (widowed, divorced, separated, never married, and married with spouse absent from the household) at the time of sample selection.

This article is based on data obtained from members of the sample who completed interviews in 1969, 1971, 1973, and 1975. During this period, the age of the group changed from 58–63 to 64–69 and the members moved from a predominantly preretired to a predominantly retired status. As the group aged, the proportion of completely retired persons—defined here as those who earned no money during a full calendar year—and the proportion of completely retired persons who received private pension income rose steadily from 1968 to 1974 (table 2). In 1968, 17 percent of the sample members were completely retired, 12 percent of these retired persons had income from private pensions. By 1974, 54 percent were completely retired, with 28 percent of these retirees receiving private pension income.

The objective here is to examine the private pension and total retirement benefits of individual retirees over a period of time and to determine how well that income kept pace with inflation. Thus the analysis focuses primarily on individual data for completely retired persons who received private pension income in both 1972 and 1974 (referred to as 1972–74 recipients) and on trend data for 1970, 1972, and 1974 for all completely retired recipients. Only completely retired persons are studied because of the need to eliminate, to the extent possible, the effect of part-year recipient status on income change.

<sup>11</sup> See Lola M. Irelan et al., *Almost 65: Baseline Data from the Retirement History Study*, Office of Research and Statistics, Social Security Administration, 1976.

Benefit changes for completely retired persons who received private pension income in both 1970 and 1974 are not discussed in the text because they may have been substantially affected by age-related changes in the amount of supplemental early-retirement allowances (as described in the following section) and because each of the age groups represents very few persons (Individual data for the 1970–74 recipients are provided in tables II–IV at the end of the article.)

The specific research questions analyzed in this article are

To what extent did the private pension benefits of completely retired persons change from 1970 to 1974 in both nominal and real terms?

To what extent did the total package of retirement benefits—defined here as private pension benefits plus OASDI—received by completely retired persons change during this period in both nominal and real terms?

To what extent did the ratio of private pension benefits to total retirement benefits change during this period among completely retired persons?

“Nominal” change in benefit levels refers to change measured in current dollars—that is, unadjusted for changes in the CPI. “Real” change refers to change measured in constant (1974) dollars—that is, adjusted for changes in the CPI.

## Change in Benefit Levels

Some private pension plans—notably those in the automobile, steel, and rubber industries—provide a supplemental early-retirement allowance in addition to a basic benefit for a worker retiring before he is eligible to receive social security benefits. The supplemental al-

**Table 2.**—Number and percent of persons with no earnings and of nonearners receiving private pension benefits, 1968, 1970, 1972, and 1974, by age

Age	Persons with no earnings				Nonearners receiving private pension benefits			
	1968	1970	1972	1974	1968	1970	1972	1974
	Number							
Total	1,310	1,881	3,134	4,151	161	283	737	1,151
57–58	344				27			
59–60	402	441			51	42		
61–62	564	627	716		83	93	135	
63–64		813	1,013	1,078		148	236	293
65–66			1,405	1,512			366	441
67–68				1,561				417
	Percent							
Total	17	24	39	54	12	15	24	28
57–58	13				8			
59–60	16	16			13	10		
61–62	23	24	25		15	15	19	
63–64		32	38	39		18	24	28
65–66			55	59			27	30
67–68				64				27

lowance is dropped either at age 62 or age 65, or at an earlier age if the worker becomes eligible for social security disability benefits. In some plans, the supplement is eliminated either at age 62 or 65, usually the former. In others, it is substantially reduced at age 62 and eliminated entirely at age 65.

The following example illustrates how the supplemental early-retirement allowance works. A recently negotiated contract between the United Automobile Workers (UAW) and three McDonnell-Douglas facilities provides full retirement benefits for employees at age 55 with 30 or more years of credited service. They receive \$600 a month. This amount is payable until a retiree attains age 62, at which time he will receive a full, unreduced basic pension benefit amounting to \$360 monthly. According to the UAW, the \$360 monthly basic pension benefit when added to the social security benefit will, in most cases, exceed the \$600 early-retirement benefit.<sup>12</sup> Total retirement benefits under this plan generally will be higher at age 62. The private pension benefit, however, is reduced by 40 percent at age 62, and the ratio of private pension benefits to total retirement benefits (assuming constant total benefits of \$600) will decrease from 100 percent to 60 percent.

To determine how well private pension benefits kept pace with inflation from 1970 to 1974, it is necessary to control for benefit changes resulting from the reduction or elimination of supplemental early-retirement allowances. Specific individuals cannot be identified and thus may not be excluded. Two other methods are therefore used to eliminate the effects of these supplements. First, the analysis focuses on benefit changes for 1972-74 recipients aged 65-66 in 1972 and aged 67-68 in 1974. This method, by excluding recipients who attained age 62 or age 65 during the study period, eliminates most persons whose benefits could have been affected by changes in the supplemental allowances.<sup>13</sup>

Second, the analysis examines annual trends in benefit levels for different cohorts of completely retired pensioners in 1970, 1972, and 1974. Attention is focused on the group aged 63-64 because it is the only age group for which data are available for all 3 years. This approach eliminates benefit changes associated with the aging of individuals and the aging of the entire sample.

## Private Pension Benefits

**Trend data.** Private pension benefits increased slightly, on the average, during the first half of the

<sup>12</sup>Bureau of National Affairs, "Collective Bargaining UAW Contract Includes 30-and-Out Retirement Plan," *BNA Reporter*, No 185, April 24, 1978, A2-3.

<sup>13</sup>Age is defined as of March 1 of the calendar year. Based on an assumption of an equal distribution of birthdates in each of the 12 months, an estimated 17 percent of the recipients aged 65 in 1972 reached 65 during January and February of that year.

**Table 3.**—Median private pension benefits, 1970, 1972, and 1974, for total and full-year OASDI beneficiary nonearners, by age

Age	Nonearners receiving private pension benefits					
	Total			Full year OASDI beneficiaries		
	1970	1972	1974	1970	1972	1974
	Number					
Total	283	737	1,151	221	629	1,100
59-60	142			122		
61-62	93	135		63	89	
63-64	148	236	293	136	205	274
65-66		366	441		335	419
67-68			417			407
	Current dollars					
Total	\$1,960	\$1,880	\$1,940	\$1,860	\$1,850	\$1,940
59-60						
61-62	2,050	1,920		1,900	1,810	
63-64	1,980	2,020	2,160	1,950	1,990	2,170
65-66		1,790	1,890		1,780	1,910
67-68			1,840			1,840
	1974 dollars					
Total	\$2,490	\$2,220	\$1,940	\$2,360	\$2,180	\$1,940
59-60						
61-62	2,600	2,270		2,410	2,140	
63-64	2,510	2,380	2,160	2,480	2,350	2,170
65-66		2,110	1,890		2,100	1,910
67-68			1,840			1,840

<sup>1</sup>Medians not computed base fewer than 50

1970's, but in real terms their value deteriorated. For the cohorts of completely retired pensioners aged 63-64 in the income years studied, median benefits rose slightly—from \$1,980 in 1970 to \$2,020 in 1972 and to \$2,160 in 1974—an increase of 9 percent over the 5-year period (table 3). Once adjustments are made in the CPI, however, median benefits declined 14 percent.

**Individual data.** The data in table 4 give the ratio of 1974 private pension benefits to those in 1972 (measured in current dollars) among completely retired persons who received benefits in both years. A ratio of 1.18 or greater indicates that private pension benefits kept pace with or exceeded the increase in the CPI from 1972 through 1974. Ratios of 1.01-1.17 indicate some increase in benefits but not enough to match the CPI increase. A ratio of 1.00 indicates that benefits were the same in both years, .99 or less indicates that benefits declined.

Seventeen percent of the pensioners aged 65-66 in 1972 received benefits in 1974 that had been fully adjusted for inflation. An additional 27 percent received benefit increases that did not compensate fully for the rise in prices. The largest group of pensioners received the same benefit in both years.

Substantial proportions of pensioners in all age groups, but particularly in the two youngest groups, reported a reduction in benefits from 1972 to 1974. Al-

**Table 4.—Ratio of 1974 to 1972 private pension benefits and median amount Percentage distribution of total and full-year OASDI beneficiary nonearners, by age**

Item	Nonearners receiving private pension benefits by age <sup>1</sup>							
	Total				Full year OASDI beneficiaries			
	Total	61-62/ 63-64	63-64/ 65-66	65-66/ 67-68	Total	61-62/ 63-64	63-64/ 65-66	65-66/ 67-68
<b>Ratio of 1974 to 1972 benefits</b>								
Total number	529	97	168	264	454	59	150	245
	Percentage distribution							
Total percent	100	100	100	100	100	100	100	100
Under 0 90	14	26	15	9	13	24	15	9
90-99	13	14	14	11	12	12	13	11
1 00	29	16	27	35	31	17	27	36
1 01-1 04	10	9	10	10	10	12	11	10
1 05-1 09	10	10	12	9	10	8	13	9
1 10-1 14	7	7	7	6	7	7	7	7
1 15-1 17	2	2	2	2	2	2	2	2
1 18-1 24 <sup>2</sup>	4	3	4	4	4	5	5	4
1 25-1 49	6	5	4	8	7	7	4	8
1 50 or more	5	6	4	5	4	7	4	4
Median ratio	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
	Amount							
<b>Median benefit</b>								
1972								
Current dollars	\$1 940	\$2,000	\$2,110	\$1,780	\$1 880	\$1 910	\$2 080	\$1,740
1974 dollars	2 290	2,360	2,490	2 100	2 220	2 250	2 450	2 050
1974	1 970	2 100	2 000	1,910	1 930	2 000	1,960	1,880

<sup>1</sup>Individuals aged 61-62 in 1972 and aged 63-64 in 1974, etc

<sup>2</sup>For CPI the 1974 to 1972 ratio is 1 18

though only speculation is possible about the reasons for the reported reduction in benefits, the declining proportion of pensioners in each successive age group who reported such reductions suggests that some of the loss may reflect the decrease in or elimination of supplemental early-retirement allowances

Some of the decline in benefits, however, appears to result from response error. The data therefore should be interpreted with caution. The reader is referred to the technical note on page 22 for a detailed discussion of the problem.

### Total Retirement Benefits

In contrast to the increases in private pension benefits, those in social security benefits during the first half of the 1970's far outdistanced the rise in the consumer price index. As pointed out earlier, the CPI rose 23 percent from January 1971 to June 1974. During the same period, social security benefits rose 47 percent, largely reflecting the unusually high increase (20 percent) in September 1972.

Total retirement benefits, measured as the sum of private pension and social security benefits, largely maintained or nearly maintained their purchasing power because of the increase in social security benefits. If the social security benefit increase had merely matched the rise in the CPI, total retirement benefits would have fallen substantially behind the inflation rate for those receiving private pensions.

**Trend data.** The following tabulation displays the real percentage increase in retirement benefits from 1970 to 1974 for completely retired private pensioners aged 63-64 who were receiving full-year OASDI benefits, by type of benefit and year of receipt (Median

Type of retirement benefit	Real percentage change		
	Total 1970-74	1970-72	1972-74
Private pension	-13	-5	-8
OASDI	+26	+17	+8
Private pension and OASDI	+7	+3	+4

benefits for these pensioners are presented in tables 3, 5, and 6). Real median private pension benefits declined 13 percent from 1970 to 1974. Real median social security benefits, on the other hand, rose 26 percent during the same period.<sup>14</sup> This increase meant that real median total retirement benefits rose 7 percent—from \$4,710 in 1970 to \$5,060 in 1974.

**Individual data.** Data for the completely retired pensioners generally confirm that increases in social security benefits have helped compensate for losses in the purchasing power of private benefits (tables 7 and 8). They provide a less optimistic picture, however, than that shown by the trend data.

In general, the value of total retirement benefits among completely retired 1972-74 recipients receiving

<sup>14</sup>Receipt and size of OASDI benefits were determined from the Social Security Administration master beneficiary record.

**Table 5.**—Median OASDI benefit, 1970, 1972, 1974, for full-year OASDI beneficiary nonearners receiving private pension benefits, by age

Age	1970	1972	1974
Current dollars			
Total	\$1 750	\$2 200	\$2 880
59-60	( <sup>1</sup> )		
61-62	1 830	2 160	
63-64	1 690	2 130	2 700
65-66		2,340	2 930
67-68			3 000
1974 dollars			
Total	\$2 220	\$2 600	\$2,880
59-60	( <sup>1</sup> )		
61-62	2 320	2 550	
63-64	2 150	2 510	2 700
65-66		2 760	2 930
67-68			3 000

<sup>1</sup> Not computed base fewer than 50

full-year OASDI benefits declined slightly during the period studied. Among those aged 65-66 in 1972, for example, real median total retirement benefits declined by 1 percent—from \$4,800 in 1972 to \$4,760 in 1974—despite a 5-percent rise in the value of social security benefits. The median ratio of 1974 to 1972 total retirement benefits, measured in current dollars, was 1.16 for all age groups, compared with 1.18 for the 1974/1972 CPI ratio.

Although the statistics on median benefits and median benefit ratios indicate some decline, on the average, in the purchasing power of total retirement benefits, the combined benefits for a substantial number of persons receiving both private pensions and social security

**Table 6.**—Median total retirement benefits, 1970, 1972, and 1974, for total and full-year OASDI beneficiary nonearners receiving private pension benefits, by age

Age	Nonearners receiving private pension benefits					
	Total			Full year OASDI beneficiaries		
	1970	1972	1974	1970	1972	1974
Current dollars						
Total	\$3,660	\$4 100	\$4,800	\$3,620	\$4,090	\$4,840
59-60	( <sup>1</sup> )			( <sup>1</sup> )		
61-62	3 620	4 000		3,690	4 000	
63-64	3 720	4,150	4 960	3,710	4 120	5 060
65-66		4,100	4 790		4,110	4 840
67-68			4,720			4,750
1974 dollars						
Total	\$4 650	\$4,840	\$4 800	\$4,600	\$4 830	\$4 840
59-60	( <sup>1</sup> )			( <sup>1</sup> )		
61-62	4 600	4 720		4 690	4,720	
63-64	4,720	4 900	4,960	4 710	4 860	5,060
65-66		4,840	4 790		4,850	4 840
67-68			4,720			4 750

<sup>1</sup> Not computed base fewer than 50

benefits in 1974 were fully protected from inflation. Among those aged 65-66 in 1972, 37 percent of the retirees received total benefits that matched or exceeded the rate of inflation (benefit ratios of 1.18 or higher) and an additional 19 percent had benefits that fell just below the breakeven point (benefit ratios of 1.15-1.17).

### Contribution of Private to Total Retirement Benefits

Because of erosion in the purchasing power of private pension benefits accompanied by large increases in social security benefits, private pension amounts declined as a percent of total retirement benefits in the period 1970-74. If private pensions continue to fall short of the increase in inflation and if social security benefits match or exceed that increase, private benefits will continue to decline as a proportion of total retirement benefits.

**Trend data.** A comparison of the three cohorts of completely retired private pensioners aged 63-64 with full-year OASDI benefits shows the median ratio of private pension to total retirement benefits dropping from 54 percent in 1970 to 45 percent in 1974—down nine percentage points, as table 9 shows. The decline in that median was even greater for the single cohort aged 63-64 in 1970 and aged 67-68 in 1974, it dropped from 54 percent to 38 percent, or 16 percentage points. The latter finding suggests that the loss of supplemental early-retirement allowances by some members of the cohort at age 65 may have contributed, along with inflation, to the decline in the cohort's aggregate private pension benefit.

**Individual data.** Data for completely retired individuals who received private pension and full-year OASDI benefits in both 1972 and 1974 follow the pattern described above (table 10). Thirty-six percent of the individuals aged 65-66 in 1972—those minimally affected by changes in supplemental early-retirement allowances—received half or more of their total retirement benefits from private pensions in 1972. By 1974, only 25 percent of the pensioners were in this situation. Median ratio of private pension to total retirement benefits for this age group dropped from 43 percent in 1972 to 40 percent in 1974.

**Table 7.**—Median OASDI benefit, 1972 and 1974, for full-year OASDI beneficiary nonearners receiving private pension benefits in both years, by age

Median benefit	Amount, by age <sup>1</sup>			
	Total	61-62/ 63-64	63-64/ 65-66	65-66/ 67-68
Total number	454	59	150	245
1972				
Current dollars	\$2 240	\$2,140	\$2 130	\$2 370
1974 dollars	2 640	2 520	2 510	2,800
1974	2,790	2 650	2 680	2 930

<sup>1</sup> See table 4 footnote 1

**Table 8.**—Ratio of 1974 to 1972 total retirement benefits and median amount Percentage distribution of total and full-year OASDI beneficiary nonearners receiving private pension benefits, by age

Item	Nonearners receiving private pension benefits, by age <sup>1</sup>							
	Total				Full year OASDI beneficiaries			
	Total	61-62/ 63-64	63-64/ 65-66	65-66/ 67-68	Total	61-62/ 63-64	63-64/ 65-66	65-66/ 67-68
<b>Ratio of 1974 to 1972 benefits</b>								
Total number	529	97	168	264	454	59	150	245
<b>Percentage distribution</b>								
Total percent	100	100	100	100	100	100	100	100
Under 0 90	5	12	5	3	4	8	6	2
90- 99	3	5	4	2	3	7	3	2
1 00	1	3	0	( <sup>2</sup> )	1	5	0	( <sup>2</sup> )
1 01-1 04	4	4	5	3	4	5	4	3
1 05-1 09	6	4	6	7	7	7	7	8
1 10-1 14	22	11	21	26	25	14	23	28
1 15-1 17	18	12	22	18	21	17	25	19
1 18-1 24 <sup>3</sup>	24	21	23	26	24	24	23	24
1 25-1 49	12	20	9	12	10	10	9	11
1 50 or more	4	7	4	3	2	3	1	2
Median ratio	1 16	1 17	1 16	1 17	1 16	1 16	1 16	1 16
<b>Median benefit</b>								
1972								
Current dollars	\$4 140	\$4 080	\$4,220	\$4,100	\$4,110	\$4 000	\$4 200	\$4 070
1974 dollars	4,880	4,810	4,980	4,840	4 850	4,720	4 960	4 800
1974	4 760	4,700	4,690	4,800	4 740	4 810	4,650	4,760

<sup>1</sup>See table 4, footnote 1  
<sup>2</sup>Less than 0.5 percent

<sup>3</sup>See table 4, footnote 2

## Summary and Conclusions

The private pension benefits of retirees increased slightly during the first half of the 1970's, but their purchasing power declined sharply because of large increases in the inflation rate. Social security benefits, on the other hand, rose substantially more than the CPI in the same period. Thus, although private pension benefits declined as a proportion of total retirement benefits, the total benefits largely maintained or nearly maintained their purchasing power.

If inflation continues its steep climb, however, the income situation may worsen. If private pensions continue

to fall behind the rate of inflation and if, as mandated by current legislation, social security benefit increases are limited to increases in the CPI, the real future total retirement benefits of private pensioners will decline. Unless the trend toward early retirement under private pension plans is reversed, increasing numbers of private pensioners will experience many years of retirement and a substantial deterioration in their standard of living. Because retirement benefits are not tied to the growth in real wages, their standard of living in relation to that of the working population also will deteriorate.

## Technical Note

### The Sample

The sampling frame for the Retirement History Study (RHS) is the same as that used by the Bureau of the Census for its Current Population Survey (CPS).<sup>15</sup> Members of the sample were persons living in households that had last participated in the CPS before February 1969. They were men in all marital-status categories and women who, at the time of sample selection, had no husband in the household. In any month the CPS panel consists of eight groups of households

<sup>15</sup> For a general description of the CPS see the Bureau of the Census, *The Current Population Survey—Design and Methodology* (Technical Paper No. 40), 1978. See also Marvin M. Thompson and Gary Shapiro, "The Current Population Survey: An Overview," *Annals of Economic and Social Measurement*, April 1973.

**Table 9.**—Private pension benefits as percent of total retirement benefits, 1970, 1972, and 1974, for total and full-year OASDI beneficiary nonearners receiving private pension benefits, by age

Age	Nonearners receiving private pension benefits					
	Total			Full-year OASDI beneficiaries		
	1970	1972	1974	1970	1972	1974
<b>Total</b>	Median percent					
	56	48	41	52	46	41
59-60	( <sup>1</sup> )			( <sup>1</sup> )		
61-62	59	54		52	46	
63-64	55	51	46	54	49	45
65-66		45	41		45	41
67-68			39			38

<sup>1</sup>Not computed, base fewer than 50

**Table 10** —Private pension benefits as percent of total retirement benefits, 1972 and 1974 Percentage distribution of total and full-year OASDI beneficiary nonearners receiving private pension benefits, by age<sup>1</sup>

Private pension benefits as percent of total retirement benefits	Nonearners receiving private pension benefits, by age <sup>2</sup>							
	Total		61-62/ 63-64		63-64/ 65-66		65-66/ 67-68	
	1972	1974	1972	1974	1972	1974	1972	1974
	Total							
Total number	529	529	97	97	168	168	264	264
Total percent	100	100	100	100	100	100	100	100
1-19	5	10	6	8	4	10	6	10
20-29	12	16	6	11	11	12	15	19
30-39	17	19	15	16	12	19	21	19
40-49	19	24	14	21	18	23	22	26
50-59	19	15	13	14	23	15	18	14
60-69	15	11	25	21	15	17	11	5
70-79	8	4	10	4	12	2	4	5
80-100	5	2	9	4	5	1	3	1
Median percent	48	42	55	46	52	44	44	40
	Full year OASDI beneficiaries							
Total number	454	454	59	59	150	150	245	245
Total percent	100	100	100	100	100	100	100	100
1-19	6	10	8	10	4	9	6	10
20-29	13	17	8	12	12	14	15	20
30-39	19	20	19	22	14	19	21	19
40-49	20	24	20	20	18	23	21	25
50-59	19	15	10	12	25	15	18	15
60-69	14	11	24	20	16	17	11	4
70-79	8	4	10	3	11	2	5	5
80-100	1	( <sup>3</sup> )	0	0	0	0	2	( <sup>3</sup> )
Median percent	46	41	48	43	51	43	43	40

<sup>1</sup>Persons receiving private pension benefits in both 1972 and 1974

<sup>2</sup>See table 4 footnote 1

<sup>3</sup>Less than 0.5 percent

selected up to 18 months previously. The oldest of these rotation groups is dropped and replaced by a new one each month.

Nineteen of these discontinued CPS rotation groups were used for the Retirement History Study. Bureau of the Census interviewers gathered information from members of the sample and their spouses, usually in late spring of the survey year. In 1969, 11,153 interviews

were completed, 10,169 were completed in 1971, 9,423 in 1973, and 8,693 in 1975.

### Sampling Variability

A measure of the sampling variability of an estimate is given by the standard error of the estimate. Generally speaking, the chances are about 68 out of 100 that an estimate will differ from the value given by a complete census by less than one standard error. The chances are about 95 out of 100 that the difference will be less than twice the standard error.

Table I gives approximate standard errors for the estimated percentage of individuals with a certain characteristic. Linear interpolation may be used to obtain values not specifically given. To derive standard errors applicable to a wide variety of items, a number of assumptions and approximations were required. As a result, these standard errors provide an indication of the order of magnitude rather than the precise standard error for any specific item.

To make a rough determination of the statistical significance of the difference between two independent percentages, the following procedure may be used:

Find estimates of the standard errors of the percentages in question, using table I. Square these standard errors to get variances and add the variances. Take the square root of this sum to get the standard error of the difference. If the absolute difference between the two percentages in question is greater than twice the standard error of the difference, they are said to be significantly different from one another at the 5-percent level.

The percentiles of a variable's distribution are values below which a standard percentage of units of the sample lies. In particular, the 50th percentile is known as the median, and the 25th, 50th, and 75th percentiles are known as quartiles of the distribution. Estimates of these values are subject to sampling variability that may be estimated in the following way and used to calculate confidence intervals for the percentiles in question.

**Table I.**—Approximate standard errors of estimated percentages

Size of base	Estimated percentage									
	2 or 98	5 or 95	8 or 92	10 or 90	15 or 85	20 or 80	25 or 75	30 or 70	40 or 60	50
25	3.1	4.8	6.0	6.6	7.8	8.8	9.5	10.0	10.8	11.0
50	2.2	3.4	4.2	4.7	5.6	6.2	6.7	7.1	7.6	7.8
100	1.5	2.4	3.0	3.3	3.9	4.4	4.8	5.0	5.4	5.5
200	1.1	1.7	2.1	2.3	2.8	3.1	3.4	3.6	3.8	3.9
300	9	14	17	19	23	25	28	29	31	32
500	7	11	13	15	18	20	21	22	24	24
800	5	8	10	12	14	16	17	18	19	19
1,500	4	6	8	8	10	11	12	13	14	14
3,000	3	4	5	6	7	8	9	9	10	10
5,000	2	3	4	5	6	6	7	7	8	8
8,000	2	3	3	4	4	5	5	6	6	6
10,000	2	2	3	3	4	4	5	5	5	6



**Table II.—Ratio of 1974 to 1970 private pension benefits and median amount Percentage distribution of total and full-year OASDI beneficiary nonearners, by age**

Item	Nonearners receiving private pension benefits, by age <sup>1</sup>							
	Total				Full year OASDI beneficiaries			
	Total	59-60/ 63-64	61-62/ 65-66	63-64/ 67-68	Total	59-60/ 63-64	61-62/ 65-66	63-64/ 67-68
<b>Ratio of 1974 to 1970 benefits</b>								
Total number	184	225	66	93	143	213	242	88
	Percentage distribution							
Total percent	100	100	100	100	100			100
Under 0 90	21		23	19	16			18
90- 99	11		8	12	11			11
1 00	16		15	19	18			19
1 01-1 04	6		8	5	6			6
1 05-1 09	11		14	12	10			11
1 10-1 14	6		6	4	7			5
1 15-1 19	6		6	6	6			7
1 20-1 24	5		6	5	6			6
1 25-1 26	2		1	3	3			3
1 27-1 34 <sup>3</sup>	3		4	1	3			1
1 35-1 49	5		1	8	6			8
1 50 or more	7		8	4	7			5
Median ratio	1 02		1 03	1 00	1 04			1 02
	Amount							
<b>Median benefit</b>								
1970								
Current dollars	\$2 000		\$2,190	\$1,980	\$1,890			\$1 970
1974 dollars	2 540		2 780	2 510	2 400			2 500
1974	2 090		2 500	1 950	1 940			1,950

<sup>1</sup>Individuals aged 59-60 in 1970 and 63-64 in 1974 etc  
<sup>2</sup>Figures not computed base fewer than 50

<sup>3</sup>For CPI, the 1974 to 1970 ratio is 1 27

**Table III.—Ratio of 1974 to 1970 total retirement benefits and median amount Percentage distribution of total and full-year OASDI beneficiary nonearners receiving private pension benefits, by age**

Item	Nonearners receiving private pension benefits, by age <sup>1</sup>							
	Total				Full year OASDI beneficiaries			
	Total	59-60/ 63-64	61-62/ 65-66	63-64/ 67-68	Total	59-60/ 63-64	61-62/ 65-66	63-64/ 67-68
<b>Ratio of 1974 to 1970 benefits</b>								
Total number	184	225	66	93	143	213	242	88
	Percentage distribution							
Total percent	100	100	100	100	100			100
Under 0 90	5		4	6	6			6
90- 99	4		6	4	4			5
1 00	1		2	0	0			0
1 01-1 04	3		6	2	1			2
1 05-1 09	3		4	3	4			3
1 10-1 14	4		4	4	5			5
1 15-1 19	4		2	3	4			3
1 20-1 24	11		6	17	15			18
1 25-1 26	5		6	5	6			5
1 27-1 34 <sup>3</sup>	24		24	23	26			23
1 35-1 49	21		18	24	21			23
1 50 or more	14		17	8	9			8
Median ratio	1 29		1 29	1 28	1 29			1 28
	Amount							
<b>Median benefit</b>								
1970								
Current dollars	\$3,670		\$3,700	\$3,750	\$3 640			\$3 730
1974 dollars	4 660		4,700	4,760	4 620			4 740
1974	4 790		5,180	4 700	4 660			4 700

<sup>1</sup>See table II, footnote 1

<sup>3</sup>See table II footnote 3

<sup>2</sup>Figures not computed base fewer than 50

1 Using the appropriate base, determine from table I the standard error of the percentile in question—the standard error of a 50-percent characteristic, for example

2 For 95-percent confidence limits, add to and subtract from the desired percentile twice the standard error found in step 1

3 On the cumulated distribution of the variable in question, use linear interpolation to find the values that correspond to the limits in step 2. These values are 95-percent confidence limits for the percentile

### Response Error

All surveys are subject to response error, but in most instances the nature and extent of such error is unknown and all too easily ignored. The RHS panel data on private pension benefits clearly reveal the existence of response error, however, and require further discussion.

Table 4 indicates that 20 percent of the 1972-74 completely retired private pensioners aged 65-66 in 1972 reported a decline in private pension benefits from 1972 to 1974. No feature of the private plans would cause a decline in benefits for such a large proportion of these recipients, and the observed decline is therefore attributed to response error. Many possible explanations for the decline in benefits have been considered and rejected as inapplicable for this particular group of retirees: (1) elimination of supplemental early-retirement allowances, (2) an increase in the amount of the social security offset, (3) reemployment of pensioners and temporary loss of their pensions under multiemployer plans, and (4) plan terminations.

A review of 1972 and 1974 benefits amounts for each person reporting a decline revealed that 24 (45 percent) of these recipients had a decline of \$100 or less, chiefly reflecting the effect of rounding (\$2,760 in 1972 and \$2,700 in 1974, for example). These recipients appeared to have the same benefits in both years. For 26 percent of the group, the declines amounted to \$500 or more.

Response error clearly exists and can affect the specific proportion of 1970-74 and 1972-74 recipients within each class of benefit-ratio variables (for individual pensioners the ratio of 1974 to 1972 or 1974 benefits to 1970 benefits and the ratio of private pension benefits to total retirement benefits in specified years). The magnitude of specific proportions should therefore be used with caution. The finding, for example, that 17 percent of the 1972-74 recipients aged 65-66 in 1972 received benefits in 1974 that were 118 percent or more of 1972 benefits should be taken as an approximate estimate and not an exact one.

Because underestimates of benefits are likely to have been offset by overestimates, however, it is felt that the trend data for cohorts and median statistics for 1972-74 and 1970-74 retirees are not seriously affected by the response error. Moreover, it is believed that response error does not alter the general findings and conclusions discussed here.

## Pensioners in Both 1970 and 1974

Tables II-IV present retirement benefit data for completely required persons who received private pension income in both 1970 and 1974 (corresponding to tables 4, 8, and 10, respectively, for 1972-74 pension recipients). Because changes in the amount of private pensions from 1970 to 1974 may have been substantially affected by age-related changes in the amount of supplemental early-retirement allowances and because of sample error, the data in these tables should be interpreted with caution.

Tables II and IV give the ratio of 1974 to 1970 retirement benefits in current dollars—private pension and total retirement benefits, respectively. A ratio of .99 or less indicates that the 1974 benefit was lower than the 1970 benefit. A ratio of 1.00 indicates that the 1974 benefit was the same as the 1970 benefit. Ratios between 1.01 and 1.26 indicate that benefits increased between 1970 and 1974 but not enough to match the increase in the CPI. A ratio of 1.27 or greater indicates that the increase in benefit levels matched or exceeded the increase in the CPI.

**Table IV.—Private pension benefit as percent of total retirement benefits, 1970 and 1974. Percentage distribution of total and full-year OASDI beneficiary nonearners receiving private pension benefits, by age<sup>1</sup>**

Private pension benefits as percent of total retirement benefits	Nonearners receiving private pension benefits by age <sup>2</sup>							
	Total		59-60/ 63-64		61-62/ 65-66		63-64/ 67-68	
	1970	1974	1970	1974	1970	1974	1970	1974
	Total							
Total number	184	184	325	325	66	66	93	93
Total percent	100	100			100	100	100	100
1-19	3	9			1	11	3	9
20-29	8	12			11	4	6	14
30-39	15	16			11	15	15	17
40-49	13	21			11	20	15	24
50-59	19	20			15	26	25	18
60-69	12	12			14	20	14	5
70-79	12	7			20	3	11	12
80-100	17	3			18	1	11	1
Median percent	56	46			61	50	54	44
	Full year OASDI beneficiaries							
Total number	143	143	313	313	342	342	88	88
Total percent	100	100					100	100
1-19	4	10					3	9
20-29	9	15					7	15
30-39	19	18					16	17
40-49	15	20					15	23
50-59	20	20					24	19
60-69	15	8					15	3
70-79	12	8					11	13
80-100	6	1					9	1
Median percent	52	43					54	44

<sup>1</sup> Persons receiving private pension benefits in both 1970 and 1974

<sup>2</sup> See table II, footnote 1

<sup>3</sup> Figures not computed—base fewer than 50